

# **Catalog and Announcements 2013-14**

Admissions Office  
1-800-4-ALFRED  
or (607) 587-4215  
[www.alfredstate.edu](http://www.alfredstate.edu)  
[admissions@alfredstate.edu](mailto:admissions@alfredstate.edu)

Nothing in this catalog is exempt from change. Tuition, fees, room rent, academic programs, scholarship information, etc. are all subject to modification.

SUNY College of Technology  
10 Upper College Drive  
Alfred, NY 14802

## GENERAL COLLEGE INFORMATION

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### CAMPUS TELEPHONE DIRECTORY

(Area code 607 unless otherwise noted)

President	587-4010
Vice President for Academic Affairs	587-3913
Vice President for Administration & Enrollment	587-3985
Vice President for Student Affairs	587-3911
Vice President for Institutional Advancement	587-3930
Dean of Arts and Sciences	587-3621
Dean of Architecture, Management & Engineering Technology	587-4611
Dean of Applied Technology	587-3101
ACES	587-4064
Admissions	1-800-4-ALFRED or 587-4215
Alumni	587-3931
Athletics	1-800-4-ALFRED or 587-4361
Bookstore (Alfred Campus)	587-4020
Bookstore (Wellsville Campus)	(585) 593-6270, ext. 3159 or 587-3159
Career Development	587-4060
Center for Community Education & Training	1-800-4-ALFRED or 587-4015
College Housing	587-4371
Communications Office	587-4228
Dining Services	1-800-4-ALFRED or 587-4064
Health and Wellness Services	587-4200
Learning Center	587-4122 Alfred 587-3112 Wellsville
Library	587-4313 Alfred 587-3115 Wellsville
Residential Life	1-800-4-ALFRED or 587-4326
Braddon Hall	587-3237
Burdick Hall	587-3213
Getman Hall	587-4531
MacKenzie East	587-3217
MacKenzie North	587-3214
MacKenzie South	587-3268
MacKenzie West	587-3280
Main Gate A	587-3263
Main Gate B	587-3272
Peet Hall	587-3245
Robinson/Champlin (R/C)	587-4531
Shults Hall	587-3222
Townhouse Complex	587-3981
Student Records & Financial Services (Financial Aid, Student Accounts, Records)	1-800-4-ALFRED or 587-4253
University Police	587-3999
Wellsville Applied Technology Campus	(585) 593-6270 or 587-3105

### ACADEMIC DEPARTMENT DIRECTORY

Agriculture & Veterinary Technology	587-4714
Architecture and Design	587-4698
Automotive Trades	587-3117
Building Trades	587-4130
Business	587-3413
Civil Engineering Technology	587-4616
Computer and Information Technology	587-3455
Computerized Design & Manufacturing	587-3115
Culinary Arts	587-3170
Digital Media and Animation	587-4659
Electrical Trades	587-3115
English & Humanities	587-4270
Mathematics & Physics	587-4270
Mechanical & Electrical Engineering Technology	587-4617
Nursing	587-3672/3680
Physical & Life Sciences	587-3672/3680
Social & Behavioral Sciences	587-4282

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## General College Information

### THE COLLEGE

Alfred State College of Technology is in Alfred, NY, a vibrant community with a permanent population of approximately 1,500 residents and nearly 5,000-6,000 students enrolled in three colleges. It is 15 miles north of the Pennsylvania border, 70 miles south of Rochester, and 90 miles southeast of Buffalo.

Alfred State had its beginning as a state school of agriculture in 1908 when it was created by an act of the state legislature. An important milestone in the history of the college occurred in 1948 when it was incorporated into the newly organized State University of New York (SUNY) system.

In 1951 the college was authorized by SUNY to award the degree of Associate in Applied Science. The Associate in Arts and the Associate in Science degrees were authorized in 1967, and the Associate in Occupational Studies was approved in 1973. Bachelor degrees were added to the college's offerings in 1991.

The college enrolls approximately 3,500 full-time students annually. There are some 275 teaching faculty and professional staff supporting the college's more than 70 programs in agricultural, allied health, business, and engineering technologies, plus liberal arts and sciences, and 16 programs in applied technology. The college's programs are registered by the New York State Education Department and have been approved by the NYS Education Department for the training of veterans. The State Education Department can be contacted by writing or calling: NYS Education Department, Office of Higher Education and the Professions, Cultural Education Center, Room 5B28, Albany, NY 12230; (518) 474-5851. The college is accredited by the Middle States Commission on Higher Education [3624 Market St., Philadelphia, PA 19104, (215) 662-5606].

### COLLEGE VISION

Alfred State will be nationally recognized as the college of choice for students seeking a technology-focused education and the preferred college for employers seeking graduates prepared to "hit the ground running."

### COLLEGE MISSION

Alfred State, a residential college of technology, provides career-focused education enriched by the liberal arts to produce job- and transfer-ready graduates.

### PRINCIPLES OF COMMUNITY

As members of Alfred State, we choose to be part of an academic community dedicated to those principles that foster personal and professional integrity, civility, and tolerance.

**We strive toward lives of personal integrity and academic excellence** – We will encourage in ourselves, and in one another, those responsible actions which lead to lives of productive work, personal enrichment, and useful citizenship in an increasingly interdependent world.

**We commit to treat one another with civility** – Recognizing that there will be differences of opinion, we will explore these differences in a courteous and forthright manner, always acknowledging individual rights to freedom of expression and association.

**We support tolerance** – We encourage those of all cultures, orientations, and backgrounds to understand and respect one another in a safe and supportive educational environment.

This set of principles set forth by the college is supported by policies including the Codes of Student Conduct and Academic Integrity.

### STATE UNIVERSITY OF NEW YORK (SUNY)

SUNY's 64 geographically dispersed campuses bring educational opportunity within commuting distance of virtually all New York citizens and comprise the nation's largest, centrally managed system of public higher education.

## GENERAL COLLEGE INFORMATION

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Nearly 400,000 students are pursuing traditional study in classrooms or are working at home, at their own pace, utilizing distance education. SUNY is governed by a board of trustees, appointed by the governor, which directly determines the policies to be followed by the state-operated campuses.

### DEGREES AND ACCREDITATIONS

#### I. Degrees Granted by New York State Department of Education.

Authorization is granted by the Division of Higher Education of the NYS Department of Education to confer the degree of Associate in Applied Science (AAS), Associate in Science (AS), and Associate in Arts (AA). Section 5 of the Commissioner of Education's Regulations, Paragraph 7, reads as follows:

"Courses of Study. The course of study shall cover two years of standard college work, and shall be so organized and conducted and shall be of such scope and content as to warrant acceptance with full credit upon advanced standing by degree-conferring institutions. Such terminal courses as it offers shall be distinctly of collegiate grade. All courses of study shall contain the subject matter implied by the announced objectives of the institution."

Authorization is also granted by the Division of Higher Education to confer the degree of Bachelor of Science (BS) in engineering technology, the degree of Bachelor of Technology (BTech), and the degree of Bachelor in Business Administration (BBA).

Authorization is also granted by the Division of Higher Education to confer the degree of Associate in Occupational Studies (AOS) under Section 52.2 of the Regulations of the Commissioner of Education (Chapter II of Title 8 of the Official Compilation of Codes, Rules, and Regulations of the State of New York).

State University criteria state that "a course of study leading to the AOS degree should be an organized post-secondary lower-division program leading to occupational competence. It should have a distinct identity, independent of established associate in applied science degree or certificate offered by an institution. The program must require a minimum of 60 semester credit hours or the equivalent of completion and may consist solely of specialized course work and related subjects."

II. The college is regionally accredited by the Commission on Higher Education of the Middle States Commission on Higher Education [3624 Market St., Philadelphia, PA 19104; (215) 662-5606]. The Commission on Higher Education is an institutional accrediting agency recognized by the U.S. Secretary of Education and the Commission on Recognition of Postsecondary Accreditation.

III. The following Associate in Applied Science degree programs in engineering technology are accredited by the Engineering Technology Accreditation Commission (ETAC) of the Accreditation Board for Engineering and Technology (ABET), a specialized accrediting agency recognized by the Commission on Recognition of Postsecondary Accreditation [111 Market Place, Suite 1050, Baltimore, MD 21202-4012; (410) 347-7700]:

- Computing Engineering Technology
- Construction Engineering Technology
- Surveying Engineering Technology
- Electrical Engineering Technology
- Mechanical Engineering Technology

IV. The following Bachelor of Science degree programs in engineering technology are accredited by the Engineering Technology Accreditation Commission (ETAC) of the Accreditation Board for Engineering and Technology (ABET), a specialized accrediting agency recognized by the Commission on Recognition of Postsecondary Accreditation:

- Construction Management Engineering Technology
- Electrical Engineering Technology
- Mechanical Engineering Technology
- Surveying Engineering Technology



V. The court and realtime reporting program is approved by the National Court Reporters Association. This approval indicates that this program has met the general requirements and minimum standards established by the Board on Approved Reporter Training of the National Court Reporters Association [8224 Old Courthouse Rd., Vienna, VA 22182-3808; (800) 272-6272].

VI. The nursing program is accredited by the National League for Nursing Accrediting Commission (NLNAC) [3343 Peachtree Rd. NE, Suite 500, Atlanta, GA 30326; (404) 975-5000]. The NLNAC is responsible for the specialized accreditation of all nursing education programs and schools, both postsecondary and higher degree.

VII. The health information technology program is accredited by the Commission on the Accreditation of Allied Health Educational Programs (CAAHEP) [35 East Wacker Drive, Suite 1970 Chicago, IL 60601-2208; (312) 553-9355] in cooperation with the American Health Information Management Association's Council on Accreditation (AHIMA) [233 North Michigan, Suite 2150, Chicago, IL 60601-5519; (312) 233-1100]. The CAAHEP is a nationally recognized specialized accreditor of allied health education programs. CAAHEP is recognized by the Council for Higher Education Accreditation (CHEA) the only nongovernmental higher education organization that undertakes recognition of accrediting bodies. CAAHEP works in cooperation with 18 Committees on Accreditation (CoA), representing each of the 18 professions that CAAHEP accredits.

VIII. The following programs in applied technology are ASE Master Certified by the National Institute of Automotive Service Excellence (ASE) [13505 Dullies Technology Dr., Suite 2, Herndon, VA 20171-3421; (703) 713-3800; [www.asecert.org](http://www.asecert.org)]:

Autobody Repair (ASE certified)

Automotive Service Technician (ASE certified)

Heavy Equipment: Truck and Diesel Technician (ASE certified)

IX. The heavy equipment: truck and diesel technician program is one of nine national Association of Diesel Specialists (ADS) TechSmart programs. The heavy equipment: truck and diesel technician program is the only program in New York and New England that is approved by the ADS [International Headquarters, 9140 Ward Parkway, Kansas City, MO 64114; (816) 444-3500, fax (816) 444-0330].

X. The drafting/CAD (computer-aided drafting) program in applied technology is certified by the American Design Drafting Association (ADDA).

XI. The welding technology program in applied technology is certified by the American Welding Society (AWS).

XII. The veterinary technology program is accredited by the American Veterinary Medical Association's (AVMA) Committee on Veterinary Technician Education and Activities (CVTEA) [1931 N. Meacham Rd., Suite 100, Schaumburg, IL 60173-4360; (800) 248-2862]. The AVMA CVTEA is responsible for the specialized accreditation of all veterinary technician education programs in the United States. It has also extended its accreditation to Canadian veterinary technician education programs.

## GENERAL POLICIES

### Civil Rights Policy

The laws concerning civil rights include: Title VII of the Civil Rights Act of 1964, Title IX of the Education Amendments of 1972, Section 504 of the Rehabilitation Act of 1973, Section 303 of the Age Discrimination Act of 1975, and the March 1979 "Guidelines" promulgated by the United States Office of Civil Rights.

Questions may be directed to the director of human resources/affirmative action officer and Title IX coordinator, Alfred State, Alfred, NY 14802.

### Policy of Nondiscrimination

Alfred State, in recognition of its educational mission, its social concern, its responsibility for the personal development of individuals, and its concern for the rights of the individual, hereby expresses this policy of nondiscrimination:

## GENERAL COLLEGE INFORMATION

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All programs and services of the college are administered without discrimination on the basis of age, sex, marital or military status, race, color, creed, religion, national origin, disability, or sexual orientation. This policy of nondiscrimination extends to admission, financial aid, housing, counseling, educational programs, athletic activities, and placement as well as to all aspects of employment.

In support of this policy, the college affirms its right to take appropriate action if it or other duly constituted authority should determine that applicable federal and state nondiscrimination laws and regulations have been violated, or that the effect and intent of this policy have been willfully or habitually abrogated. This policy is an affirmation of the college's commitment to making nondiscrimination a reality.

### Family Education Rights and Privacy Act (FERPA)

#### Student Records

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. FERPA gives parents certain rights with respect to their children's education records. These rights transfer to the student when he or she reaches the age of 18 or attends a school beyond the high school level. Parents or eligible students have:

1. The right to inspect and review the student's education records maintained by the school;
2. The right to request that a school correct records which they believe to be inaccurate or misleading;
3. The right to consent to disclosures of personally identifiable information contained within the student's education records, except to the extent that FERPA authorizes disclosure without consent. Schools may disclose records, without consent, to the following parties or under the following conditions:
  - a. School officials with a legitimate educational interest as defined in detail on the Records Office website within the "Student Records" information;
  - b. Other schools to which a student is transferring;
  - c. To comply with a judicial order or lawfully issued subpoena.
4. The right to file a complaint concerning alleged failure by Alfred State to comply with the requirements of FERPA. Written complaints may be addressed to the Family Compliance Office, U.S. Department of Education, 400 Maryland Ave. SW, Washington, DC 20202-4605.
5. The right to obtain a copy of Alfred State's student records policy. A complete copy of this policy and a complete copy of the FERPA Law are available at [my.alfredstate.edu](http://my.alfredstate.edu) under the link to "Records Office" and then "Student Records."

#### Directory Information

Directory information (as defined by Alfred State) includes name, Alfred State email address, address and telephone number, dates of attendance, date and place of birth, college major, expected date of graduation, degrees and awards received, photographs, enrollment status, participation in officially recognized sports and activities, weights and heights of athletes, and most recent previous educational institution attended. The college can release this information without the student's written request. However, under the Family Educational Rights and Privacy Act (FERPA), students have the right to refuse to permit disclosure of any or all of those items without their prior written consent. Students who prefer not to have their directory information disclosed must sign a statement so attesting. This can be done in the Student Records and Financial Services Office before 11 a.m. of the census date (last day to register) and to continue in effect, must be done each and every semester of the student's attendance. Under FERPA, if the Student Records and Financial Services Office does not hear from a student by that time, the student's directory information may be released.

#### Other Information

It should be noted that any parent/guardian who proves that he/she claims a student as a dependent for income tax purposes has the same rights to access. Each time a specific record is requested by a parent, the request must be in writing. All other requests for student educational records must have the written consent of the individual with the exceptions recognized by FERPA or a completed FERPA Waiver must be on file in the Student Records and Financial Services Office.

If you desire further details, a copy of the law is on file in the Student Records and Financial Services Office, Agriculture Science Building.

Alfred State's policy is that student directories will be available for internal use only. These directories will be issued by the Student Records and Financial Services Office to offices upon request. Distribution of student directories (labels) to third parties is prohibited. This is in compliance with provisions of FERPA. Further, the Student Records and Financial Services Office will provide directory information to the military upon written request as mandated by the Solomon Amendment.

**Student Right-To-Know and Campus Security Act**

On July 1, 1992, the Student Right-to-Know and Campus Security Act went into effect, requiring institutions receiving federal student aid funds to make available to prospective students information regarding graduation, retention, and attrition rates beginning in July 1993. Successful outcomes of students' academic performance are measured by graduates, transfers, persisters, and those receiving a certificate.

Information is available for review on the Alfred State website:

<http://www.alfredstate.edu/policies-and-disclosures/student-consumer-information> or by contacting the Student Records and Financial Services Office. You may also view this information by visiting the College Navigator website: <http://nces.ed.gov/collegenavigator/>

The 2011 Campus Awareness and Safety Report includes Alfred State's summaries of the college's personal safety and security procedures in addition to the three-year summary for the Campus Crime Report which is excerpted on the following pages. The information is available in its entirety for review and/or duplication on the college's website at [www.alfredstate.edu](http://www.alfredstate.edu), on the University Police website at [www.alfredstate.edu/UP](http://www.alfredstate.edu/UP), on reserve in both the Hinkle and Applied Technology campus libraries, and from the following campus offices: Admissions, Student Life, University Police, and the Vice President for Student Affairs.

The Advisory Committee on Campus Safety will provide, upon request, all campus crime statistics as reported to the U.S. Department of Education.

You may also visit the U.S. Department of Education's website which contains all campus crime statistics at [www.ope.ed.gov/security](http://www.ope.ed.gov/security) to obtain more information.

<b>Disclosure of Completion, Persistence, &amp; Transfer Rates</b> <b>For Full-Time, First-Time Associate-Level Students Entering in Fall 2006</b> (PURSUANT TO TERMS OF THE STUDENT RIGHT-TO-KNOW ACT) (STATUS AS OF THE FALL 2009 SEMESTER)											
Sex	Race	Entering Institution			Transfers to SUNY (without a degree)		Non-SUNY Transfers (without a degree)		Number Persisters Enrolled Fall 2008 (8)	Attrition, Including Non-SUNY Transfers (9)	Received Certificate or Diploma Only (10)
		Initial Cohort Entering Fall 2006 (1)	Grads Within Two Years (2)	Grads Within Three Years (3)	Four-Year Institution (4)	Two-Year Institution (5)	Four-year Institution (6)	Two-Year Institution (7)			
FEMALE	WHT	251	61	106	14	41	4	2	13	71	0
	BLK	20	5	6	1	2	3	1	2	5	0
	HSP	6	1	1	0	4	1	0	0	0	0
	API	4	2	3	1	0	0	0	0	0	0
	NRA	2	0	0	0	0	0	0	0	2	0
	SUBTOTAL		283	69	116	16	47	8	3	15	78
MALE	WHT	591	222	263	27	80	15	4	51	150	1
	BLK	68	9	18	5	18	3	5	8	11	0
	HSP	21	1	2	0	2	3	3	2	9	0
	API	9	2	3	0	1	1	0	4	0	0
	AIA	9	2	2	0	3	1	0	0	3	0
	NRA	5	0	0	0	0	0	0	0	5	0
SUBTOTAL		703	236	288	32	104	23	12	65	178	1
TOTAL		986	305	404	48	151	31	15	80	256	1

Data Source for Non-SUNY Transfers is Transfer Track Services from the National Student Loan Clearinghouse. Available for participating institutions only. Column 1 = Columns 3+4+5+6+7+8+9+10 Students shown in Columns 4, 5, 6, & 7 transferred spring 2007 through fall 2009.

Of the 166 baccalaureate level students who entered Alfred State in fall 2003, 57 (34.34 percent) graduated within four years; 74 (44.58 percent) graduated within five years; 78 (46.99 percent) graduated within six years; 40 (24.10 percent) transferred to another SUNY institution without a degree; 14 (8.43 percent) transferred to a non-SUNY institution without a degree; and 1 (0.60 percent) was still enrolled in the fall of 2009. In summary, 133 of the 166 students (80.12 percent) who enrolled at Alfred State in fall of 2003 achieved a successful outcome.

## GENERAL COLLEGE INFORMATION

<b>Disclosure Of Completion, Persistence, &amp; Transfer Rates</b> <b>For Full-Time, First-Time Baccalaureate-Level Students Entering in Fall 2003</b> (PURSUANT TO TERMS OF THE STUDENT RIGHT-TO-KNOW ACT) (STATUS AS OF THE FALL 2009 SEMESTER)											
Sex	Race	Entering Inst.			Transfers to SUNY (without a degree)		Non-SUNY Transfers (without a degree)		Number Persisters Enrolled Fall 2008	Attrition, Including Non-SUNY Transfers	
		Initial Cohort Entering Fall 2003 (1)	Grads Within Four Years (2)	Grads Within Five Years (3)	Grads Within Six Years (4)	Four-Year Institution (5)	Two-Year Institution (6)	Four-year Institution (7)	Two-Year Institution (8)	(9)	(10)
FEMALE	WHT	18	5	7	8	2	3	1	1	0	4
	BLK	1	0	1	1	0	0	0	0	0	0
	HSP	1	0	0	0	0	0	1	0	0	0
SUBTOTAL		20	5	8	9	1	3	2	1	0	4
MALE	WHT	140	50	62	65	12	24	9	1	1	28
	BLK	2	1	1	1	0	0	0	0	0	1
	HSP	3	0	2	2	0	0	1	0	0	0
	API	1	1	1	1	0	0	0	0	0	0
SUBTOTAL		146	52	66	69	12	24	10	1	1	29
TOTAL		166	57	74	78	13	27	12	2	1	33

Data Source for Non-SUNY Transfers is Transfer Track Services from the National Student Loan Clearinghouse. Available for participating institutions only.  
 Column 1 = Columns 4+5+6+7+8+9+10 Students shown in Columns 5, 6, 7, & 8 transferred spring 2004 through fall 2009.

The 2005 Campus Awareness and Safety Report includes Alfred State's summaries of the college's personal safety and security procedures in addition to the three-year summary for the Campus Crime Report which is excerpted on the following pages. The information is available in its entirety for review and/or duplication on the college's website at [www.alfredstate.edu](http://www.alfredstate.edu), on the University Police website at [www.alfredstate.edu/UP](http://www.alfredstate.edu/UP), on reserve in both the Hinkle and Applied Technology campus libraries, and from the following campus offices: Admissions, Student Life, University Police, and the Vice President for Student Affairs.

The Advisory Committee on Campus Safety will provide, upon request, all campus crime statistics as reported to the U.S. Department of Education.

You may also visit the U.S. Department of Education's website which contains all campus crime statistics at [www.ope.ed.gov/security](http://www.ope.ed.gov/security) to obtain more information.

### Campus Crime Statistics

The Advisory Committee on Campus Safety and/or the University Police department will provide, upon request, all campus crime statistics as reported to the U.S. Department of Education. The U.S. Department of Education maintains campus crime statistic information on its website at <http://www.ope.ed.gov/security>. You may also obtain the full annual security report, which includes all campus crime statistics, through the University Police Department at (607) 587-3999 or access it through the college website at <http://www.alfredstate.edu/student-services/annual-security-report>.

## **Admission to Alfred State**

Admission into one of Alfred State's more than 70 academic programs is based on the academic qualifications of the applicant without regard to age, sex, marital or military status, race, color, creed, religion, national origin, disability, or sexual orientation. Admission will be offered to qualified applicants whose academic preparation has prepared them for success in their chosen field.

### **APPLICATION PROCESS**

All applicants (except international student applicants) must complete a SUNY application (including the supplemental application), which may be completed online at:

- Alfred State website ([www.alfredstate.edu](http://www.alfredstate.edu)) or the SUNY website ([www.suny.edu](http://www.suny.edu))

A paper copy of the application may be obtained by contacting the Alfred State Admissions Office or by downloading a copy from the SUNY website.

A high school transcript must be supplied to the Alfred State Admissions Office. The preferred way to meet this requirement is by completing the SUNY Online Academic Record (SOAR) through the SUNY website.

High school seniors may apply at any time during their senior year. Fall semester application decisions are mailed starting Nov. 1 and continue on a rolling basis according to space availability. Spring semester applications for those programs open for spring admission (see SUNY Application Viewbook) are also considered on a rolling basis according to availability of space.

Students with disabilities should contact the Admissions Office to inquire about special accommodations to assist them with the application process and paperwork.

Consistent with college policy, any deliberate falsification or omission of data on any admissions document may result in denial of admission, revocation of acceptance decision, or administrative dismissal from the college.

### **INTERNATIONAL STUDENTS**

Alfred State welcomes applications for admission from international students and is authorized under Federal Law to enroll nonimmigrant students.

International students must complete the International Student Application packet which is available on the Alfred State website ([www.alfredstate.edu](http://www.alfredstate.edu)). In addition to the admission application, international students must also submit official academic and financial records. For students whose native language is not English, evidence of English proficiency must be shown by taking the Test of English as a Foreign Language (TOEFL) or International English Language Testing System (IELTS) exam. Scholastic Aptitude Test (SAT) scores (critical reading and math) are required for entrance into the four-year, baccalaureate programs unless the student has successfully completed college-level course work following high school graduation. They are also required for students interested in intercollegiate athletics. All application materials must be submitted well in advance of the intended first semester at Alfred State.

Students who have completed college/university level course work and would like to have their courses evaluated for possible transfer credit must submit to Alfred State an official college transcript and course descriptions (written in English) for courses to be evaluated. In addition, students must also provide a course-by-course credential evaluation completed by an approved credential evaluation service. The information available from Josef Silny & Associates, Inc., located at [www.jsilny.com](http://www.jsilny.com), provides information on the service we feel best meets the needs of the applicant and Alfred State. World Education Service (WES) [[www.wes.org](http://www.wes.org)] is also a good resource. However, we will accept a course-by-course credential evaluation from an approved member of the National Association of Credential Evaluation Services (NACES) [[www.naces.org](http://www.naces.org)]. Please note that course descriptions and the course-by-course evaluation are not necessary if an articulation agreement exists between your previous college/university and Alfred State.

## ADMISSION TO ALFRED STATE

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### HOME-SCHOOLED STUDENTS

Alfred State admits as matriculated students only persons who have a high school diploma or its recognized equivalent. Because of this requirement, Alfred State has established a specific admission policy with respect to home-schooled students. The purpose of the policy is to ensure that home-schooled students are treated fairly yet in accordance with the requirements set forth by the college. The policy deals exclusively with the criteria for eligibility to be considered as an applicant for admission. Once eligibility for consideration is established, the applicant must also meet both campus and curriculum-specific admissions requirements.

#### **Applicants 16 years of age or over** (i.e. beyond the age of compulsory attendance)

These home-schooled students will be eligible for further consideration as an applicant to matriculated status if they can provide one of the following: (1) a letter from the superintendent of the school district in which the student resides, attesting to the student's completion of a program of home instruction meeting the requirements of Section 100.10 of the Regulations of the Commissioner of Education; (2) a passing score on the general comprehensive examination for the state high school equivalency diploma (GED) and the diploma itself if the student is eligible to receive one; (3) official verification of successful completion (a grade of C or better) of 24 college credit hours in the distribution of 6 credits in English language arts, 3 credits in natural science, 3 credits in humanities, 3 credits in mathematics, 3 credits in social science, and 6 credits in approved general education courses (confirmation of appropriate courses may be verified with the Alfred State Admissions Office); (4) official verification of having earned a degree from an accredited college or university; (5) evidence of having passed with a grade of 65 or better on the New York State Regents exams for English language arts, mathematics, U.S. history, a science, and global history - **please note that students admitted through this option are not eligible for financial aid.**

#### **Applicants under the age of compulsory attendance** (i.e. below 16 years of age)

These home-schooled students will be eligible for consideration as applicants for admission to a matriculated status only if the student can provide a letter from the school district in which the student resides, attesting to the student's completion of a program of home instruction that is the substantial equivalent of a four-year high school course of instruction meeting the requirements of Section 100.10 of the Regulations of the Commissioner of Education.

### TRANSFER STUDENTS

Students who have attended other colleges following high school graduation, either full- or part-time, are classified as transfer students and may receive advanced standing. In addition to completing the SUNY application and providing an official high school transcript, transfer students must submit official transcripts. These transcripts should be sent to the Alfred State Admissions Office at the time of application. It is recommended that students who have completed college-level course work during high school submit official transcripts so that appropriate transfer credit may be awarded.

Parallel and equivalent courses passed at a grade C or above will be given transfer credit on approval of the department chair in whose department the course is registered. Credit may be given for courses passed with a grade of C- if the overall index of the courses being transferred remains at C or higher. Only credit hours and honor points earned at this college will be considered when computing a student's index.

### TRANSFER AGREEMENTS

Agreements have been established between Alfred State and two-year colleges, which permit a student to complete an associate degree at the two-year college and transfer to Alfred State to complete a baccalaureate degree. Transfer is guaranteed if the student successfully completes, in accordance with the specific articulation agreement, the prescribed schedule of courses. Any questions regarding transfer of courses should be directed to the transfer adviser within the Student Records and Financial Services Office at Alfred State. The student must provide an official transcript from the two-year college to Alfred State. Refer to page 49 or the website at [www.alfredstate.edu/transfer-students](http://www.alfredstate.edu/transfer-students) for a listing of articulation agreements.

**ONE-PLUS-ONE TRANSFER PROGRAM**

Agreements have been established between Alfred State and several community colleges, which permit a student to complete the first year of a two-year program at a community college and then transfer to Alfred State for the second year. Transfer is guaranteed if the student successfully completes the prescribed first year schedule of courses at the community college with a 2.0 cumulative index and then transfers to Alfred State for the second year.

The student must file an application to the community college for the first year. During the first semester, the student must then file a SUNY Application to Alfred State as a one-plus-one transfer student. There is no filing fee for the one-plus-one application to Alfred State.

Upon completion of the prescribed freshman year program at the community college and the filing of the SUNY application as indicated above, the student is guaranteed automatic transfer acceptance with full credit provided the student successfully completes the required academic program with grades of C or higher and a cumulative index of at least 2.0.

The student must provide evidence of the above by assuring that an official transcript from the community college is provided to Alfred State's Admissions Office.

Refer to page 49 or the website at [www.alfredstate.edu/transfer-students](http://www.alfredstate.edu/transfer-students) for a listing of articulation agreements.

**OTHER TRANSFER PROGRAM**

An agreement exists whereby students who have completed course work at the following institution can receive advanced standing at Alfred State:

<b>Institution</b>	<b>Program</b>
St. James Mercy Hospital	Individual Studies

**JOINT ADMISSIONS**

Alfred State has established Joint Admission Agreements from several of our associate degree programs into our 19 baccalaureate degree programs as well as from our certificate programs into our own associate degree programs. Alfred State students interested in pursuing an advanced degree should complete a SUNY Joint Admissions/Intent to Enroll form, available at the Alfred State Admissions Office. This form should be filed during the final semester of the student's associate degree or certificate program.

**VESID**

Students who may be working through VESID should contact their VESID counselor prior to beginning the application process at Alfred State.

**CONCURRENT ADMISSIONS PROGRAM (CON AP)**

The Concurrent Admissions Program (CON AP) is conducted by colleges and universities that are members of the Service Members Opportunity Colleges (SOC). Concurrent with their enlistment in the Army, new soldiers are encouraged to express an interest in attending Alfred State following completion of their military obligation.

After completing a two-, three-, or four-year enlistment, the new veteran will be encouraged to enroll at Alfred State. This program also applies to soldiers enlisting in the Army Reserve.

Those interested in the CON AP program are encouraged to contact their military recruiter.

**READMISSION**

Students who have not yet graduated from the college and wish to apply for readmission must complete a Readmission Application available from the Alfred State website ([www.alfredstate.edu](http://www.alfredstate.edu)). The completed application, as well as official transcripts from any colleges attended since enrollment at Alfred State,

## ADMISSION TO ALFRED STATE

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must be submitted to the Admissions Office. Applicants who are or will be graduates of the college and wish to apply to return for a non-sequential major must complete the SUNY Application and process it through the SUNY Application Processing Center for a new program of study. The new program must be significantly different from the program from which the student graduated. Please contact the Admissions Office for further information on this requirement.

### EX-OFFENDERS

Individuals who are ex-offenders will have their application for admission reviewed under a college policy established in accordance with section 23A of the New York State Correction Law. Copies of this policy are available from the Admissions Office. Individuals who are ex-offenders and who wish to apply should identify themselves as such.

### ADMISSION REQUIREMENTS

1. Applicants must possess a recognized high school diploma or its equivalent (please note that distance learning degrees/diplomas do not satisfy this requirement for New York State residents). Verification must be supplied to the Admissions Office. Home-schooled applicants should refer to the Home-Schooled Students section on page 14. **Applicants with an IEP certificate/diploma will not be accepted. These students are advised to take the GED exam and earn a 2500 or better to be considered.**
2. Individual program requirements must be satisfied as indicated. In addition, to be considered for admission into programs taught on the Alfred campus, the overall high school average must be at least a 76. For programs taught in the School of Applied Technology, Wellsville campus, the overall average must be a 74 to be considered. Applicants with averages lower than these may be considered with additional documentation. Applicants who do not meet specified program requirements but who show potential for success may be considered for admission through the Alfred State Opportunity Program (ASOP) or the Educational Opportunity Program (EOP).
3. Applicants with previous college experience must submit an official college transcript(s).
4. **Standardized test score (ACT or SAT) results are required for baccalaureate (bachelor) degree programs, for some scholarship considerations, and for those students interested in intercollegiate athletics.** They are not required, but are strongly encouraged, for associate degree and certificate programs as well as for applicants to the baccalaureate degree programs who have successfully completed college-level course work following high school graduation. If a student entering an associate degree or certificate program submits standardized test scores, they are used as a supplement to the educational background studied during the application review process. When multiple score reports are submitted, the highest composite score (SAT critical reading and math) is used.
5. Additional information to explain special or extenuating circumstances is also encouraged.
6. If a student has a gap of more than six months in his/her educational experiences, the student will be required to complete an educational gap form in order to supply information on what he/she did during that time.
7. Financial need is not considered as part of the admissions process.
8. Alfred State participates in one of New York State's five local, regional Career Pathways in Tech Prep programs. Students who participate in other tech prep programs should contact the Admissions Office to ensure proper consideration of secondary courses and credit-bearing courses, if applicable.

### PROGRAMS OF STUDY

Applications are filed for admission into one of the following programs rather than a general freshman year program. Enrollment in other than registered or otherwise approved programs may jeopardize a student's eligibility for student aid awards. Detailed program information is found in the catalog, alphabetically. References for items with asterisks may be found on the page at the end of the Programs of Study listing. In addition to course entrance requirements listed, students must meet overall high school average requirements (76 for Alfred campus programs and 74 for Wellsville campus programs) to be considered for admission. Students with averages lower than these may be considered with additional documentation.

Students graduating from any two-year associate degree program (AAS, AA, AS, and AOS) may enter directly into the corresponding baccalaureate degree program or the technology management Bachelor of Business Administration degree program.



**ADMISSION TO ALFRED STATE**

<b>Program</b>	<b>Page No.</b>	<b>Application Code No.</b>	<b>Required Courses</b>	<b>Recommended Courses</b>	<b>Degree</b>	<b>Hegis Code</b>
Accounting	85	0630	Algebra	Geometry, Algebra 2/ Trigonometry	AAS	5002
Agricultural Business	87	0511		Algebra	AAS	5402
Agricultural Technology	89	0510	Algebra	Geometry, Algebra 2/Trigonometry	AAS	5402
Air Conditioning and Heating Technology	92	0464		Biology, Chemistry Algebra	AOS	5317
Architectural Technology	94	0538	Algebra, Geometry, Algebra 2/ Trigonometry	Physics	AAS	5317
Architectural Technology	96	1452	Algebra, Geometry, Algebra 2/ Trigonometry*	Pre-calculus, Physics	BS	0925
Architecture	99	0135	Algebra, Geometry, Algebra 2/Trigonometry, Pre-calculus, Portfolio review**	Physics	BArch	0202
Autobody Repair	103	0453		Algebra	AOS	5306
Automotive Service Technician	105	0451		Algebra	AOS	5306
Biological Science	107	1554	Algebra, Geometry, Algebra 2/ Trigonometry, Biology, Chemistry		AAS	5407
Building Trades: Building Construction	109	0420		Algebra	AOS	5317
Business Administration	113	0671	Algebra, Geometry	Algebra 2/ Trigonometry	AS	5004
Business Administration	111	0280	Algebra, Geometry***	Algebra 2/ Trigonometry	BBA	0506
Business Management	115	1306	Algebra	Geometry, Algebra 2/Trigonometry	AAS	5004
CAD/CAM Technology	117	1337	Algebra, Geometry	Algebra 2/ Trigonometry, Physics	AAS	5303
Coding & Reimbursement Specialist	119	1671	Biology	Keyboarding, Knowledge of Microsoft Office Professional	Cert.	5213
Computer Engineering Technology	122	1602	Algebra, Geometry, Algebra 2/ Trigonometry	Physics	AAS	5104
Computer Engineering Technology	125	1357	Algebra, Geometry, Algebra 2/ Trigonometry ***	Physics	BS	0925
Computer Information Systems	126	0581	Algebra, Geometry	Algebra 2/ Trigonometry	AAS	5101
Computer Science	128	0532	Algebra, Geometry, Algebra 2/ Trigonometry	Pre-calculus, Physics	AS	5101
Construction Engineering Technology	130	0577	Algebra, Geometry, Algebra 2/ Trigonometry	Physics	AAS	5317
Construction Management Engineering Technology	132	1603	Algebra, Geometry, Algebra 2/ Trigonometry ***	Physics	BS	0925
Court and Realtime Reporting	134	0647	Algebra	Geometry, Algebra 2/Trigonometry	AAS	5005
Court Reporting and Captioning	135	2152	Algebra	Geometry, Algebra 2/Trigonometry	Cert.	5005

## ADMISSION TO ALFRED STATE

Culinary Arts	137	0578		****	AOS	5404
Culinary Arts: Baking, Production and Management	139	0423		****	AOS	5404
Digital Media and Animation	141	1212	Algebra, Geometry	Algebra 2/ Trigonometry	AAS	5606
Digital Media and Animation	142	2018	Algebra, Geometry***	Algebra 2/ Trigonometry	BS	0699
Drafting/CAD	144	0450		Algebra	AOS	5303
Drafting/CAD: Model Bldg. and Process Piping Drawing	146	0419		Algebra	AOS	5303
Drafting/CAD: Technical Illustration	148	0418		Algebra	AOS	5303
Electrical Construction and Maintenance Electrician	150	0498		Algebra	AOS	5310
Electrical Engineering Technology	152	0699	Algebra, Geometry, Algebra 2/ Trigonometry	Physics	AAS	5310
Electrical Engineering Technology	155	0216	Algebra, Geometry, Algebra 2/ Trigonometry ***	Physics	BS	0925
Engineering Science	156	0530	Algebra, Geometry, Algebra 2/ Trigonometry; Pre-calculus; Physics or Chemistry	Both Physics and Chemistry	AS	5609
Entrepreneurship	158	1362	Algebra	Geometry, Algebra 2/Trigonometry	AAS	5004
Environmental Technology	160	2193	Algebra, Geometry, Algebra 2/ Trigonometry, Biology, Chemistry		AAS	5407
Financial Planning	162	1938	Algebra, Geometry, Algebra 2/ Trigonometry***		BBA	0599
Financial Services	164	0641	Algebra, Geometry	Algebra 2/ Trigonometry	AAS	5003
Forensic Science Technology	166	2023	Algebra, Geometry, Algebra 2/ Trigonometry, Biology, Chemistry***	Physics	BS	1999
Health Information Technology	169	1969	Biology	Keyboarding, Knowledge of Microsoft Office Professional	AAS	5213
Heavy Equipment Operations	172	1908		Algebra*****	AOS	5317
Heavy Equipment: Truck and Diesel Technician	174	0452		Algebra	AOS	5306
Human Services	176	1175	Algebra		AS	5501
Human Services Management	178	2153	Algebra***		BS	2101
Individual Studies	180	0688	Algebra	Geometry, Biology	AS	5699
Information Security and Assurance	181	2085	Algebra, Geometry, Algebra 2/ Trigonometry***		BTech	0799
Information Technology: Applications Software Development	183	1502	Algebra, Geometry, Algebra 2/ Trigonometry***		BTech	0799

## ADMISSION TO ALFRED STATE

Information Technology: Network Administration	185	1505	Algebra, Geometry, Algebra 2/ Trigonometry***		BTech	0799
Information Technology: Web Development	187	1506	Algebra, Geometry, Algebra 2/ Trigonometry***		BTech	0799
Interior Design	189	0656	Algebra, Geometry	Algebra 2/ Trigonometry	AAS	5012
Liberal Arts and Sciences: Adolescent Education (Teacher Education Transfer)	191	1804	History/Social Studies and English concentrations: Algebra; Biology and Chemistry concentrations: Algebra, Geometry, Algebra 2/ Trigonometry, Biology, Chemistry; Math and Physics concentrations: Algebra, Geometry, Algebra 2/ Trigonometry, Biology, Chemistry or Physics		AA	5649
Liberal Arts and Sciences: Humanities	194	0201	Algebra	Geometry, Biology	AA	5649
Liberal Arts and Sciences: Math & Science	197	0645	Algebra, Geometry, Algebra 2/ Trigonometry; Biology; Chemistry or Physics	Both Chemistry and Physics	AA	5649
Liberal Arts and Sciences: Social Science	199	0212	Algebra	Geometry, Biology	AA	5622
Machine Tool Technology	200	0551		Algebra	AOS	5312
Marketing	202	0633	Algebra	Geometry, Algebra 2/Trigonometry	AAS	5004
Masonry	204	0401		Algebra	AOS	5317
Mechanical Engineering Technology	206	0493	Algebra, Geometry, Algebra 2/ Trigonometry	Physics	AAS	5315
Mechanical Engineering Technology	208	0235	Algebra, Geometry, Algebra 2/ Trigonometry***	Physics	BS	0925
Motorsports Technology	210	1619		Algebra	AOS	5306
Nursing	211	0622	Algebra, Biology, Chemistry	Combined SAT score of 900 (critical reading & math)	AAS	5208
Nursing	214	0291	Graduation from an approved associate degree nursing or certified diploma program		BS	1203
Pre-Environmental Science and Forestry (option within Liberal Arts & Sciences: Math & Science program)	216	0645 (Indicate P-ESF on Special Campus Project line)	Algebra, Geometry, Algebra 2/ Trigonometry; Biology; Chemistry or Physics	Both Chemistry and Physics	AA	5649
Sport Management	220	0182	Algebra, Geometry***	Algebra 2/ Trigonometry	BBA	0599
Sports Management	218	1396	Algebra, Geometry	Algebra 2/ Trigonometry	AS	5099

## ADMISSION TO ALFRED STATE

Surveying Engineering Technology	222	1039	Algebra, Geometry, Algebra 2/ Trigonometry	Physics	AAS	5309
Surveying Engineering Technology	224	1046	Algebra, Geometry, Algebra 2/ Trigonometry***	Physics	BS	0925
Technology Management	225	1318	Successful completion of an associate degree		BBA	0599
Undeclared Major	227	0000	Algebra	Biology	N/A	N/A
Veterinary Technology	228	0521	Algebra, Geometry, Algebra 2/ Trigonometry, Biology, Chemistry	Physics	AAS	5402
Welding Technology	231	0666		****	AOS	5308

**Note: Standardized test score (ACT or SAT) results are required for baccalaureate-level programs, for some scholarship considerations, and for those students interested in intercollegiate athletics. (The Alfred State athletic department is a NCAA Division III member. With the move to the NCAA, incoming freshmen students who wish to participate in intercollegiate athletics must be admitted into a four-year program OR have a 78 or 2.4/4.0 high school average AND a 900 (critical reading and math) SAT or a 19 composite ACT to be immediately eligible their first semester. Incoming transfer students who wish to participate in intercollegiate athletics must have a 2.0 cumulative GPA for consideration.)**

\* SAT and/or ACT scores also required with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21. Portfolio is required to enter junior year studio courses.

\*\*SAT and/or ACT scores also required with a recommended combined SAT score of 1100 (critical reading and math) or a composite ACT score of 24. Portfolio review is also required.

\*\*\* SAT and/or ACT scores also required with a recommended combined SAT score of 1000 (critical reading and math) or a composite ACT score of 21.

\*\*\*\* It is recommended that a student have an in-depth knowledge of basic math skills.

\*\*\*\*\* Letters of recommendation, a personal essay, and a resume indicating related work experience and/or knowledge of field are highly recommended.

## SPECIAL ADMISSIONS PROGRAMS

### The Honors Program at Alfred State

The Honors Program at Alfred State was created to encourage motivated, curious, academically superior students to explore some aspect of their program in greater depth and to broaden and deepen their awareness of themselves as responsible, contributing members of a larger community. Honors Program participants complete a series of seminars, as well as a substantial honors project and 10 hours of volunteer community service. The permanent college transcript of students completing program requirements will read "Honors Program Graduate."

#### Application

The honors program coordinator reviews academic records of current and incoming freshmen and invites students with a record of strong academic achievement to apply for Honors Program status. The coordinator makes the final decision based on the application, including the required student essay, letters of recommendation from two educators, and meeting with the student. Any current Alfred State student with a GPA of 3.5 (of a possible 4.0) or better and at least one year remaining at the college is welcome to apply to the program. Students accepted into the Honors Program remain in the program of their choice for degree purposes.

#### Program Requirements

Honors Program participants are required to

- earn an overall 3.25 GPA by graduation, with no more than one semester's GPA falling below 3.0;
- enroll in honors courses offered by various departments, schedules permitting;
- work with a faculty or staff member to complete an honors project, usually a technical or research project related to the student's personal or career plans;

- participate in at least two honors seminars per semester - short, informal opportunities to interact with some of the college's most respected teachers;
- attend and participate in the college's speakers series, especially those sponsored by the Honors Program;
- complete 10 hours of volunteer, unpaid service of genuine benefit to the community or individuals in the community.

**Program Benefits**

The Honors Program coordinator will

- offer interesting, challenging, credit-bearing honors courses, informal honors seminars, and speakers of interest from the professional world;
- facilitate arrangements for the honors project and community service requirements, if requested;
- negotiate special Honors Program privileges: one-week laptop loans, "faculty" library borrowing privileges, and first-day course registration privileges;
- write letters to transfer colleges explaining the Alfred State Honors Program and recommending students to the honors program at those colleges;
- indicate "Honors Program Graduate" on the students' permanent college transcripts.

Interested students should contact:

Professor Terrence Morgan, Honors Program Coordinator  
Hunter Student Development Center  
Alfred State  
Alfred, NY 14802  
(607) 587-4187  
morgantm@alfredstate.edu

**Educational Opportunity Program (EOP)**

The Educational Opportunity Program (EOP) offers higher education opportunities to high school graduates or to holders of high school equivalency diplomas who do not meet normally applied admission criteria but who have the potential for college success. Students must also meet family income guidelines printed in the SUNY Application Viewbook.

EOP is typically an extended program with course work paced to enhance student success. Students study full-time, enrolling in at least 12 credit hours per semester. The first-year schedule will include courses in English; math; college skills and/or reading; social, physical, or life science; and/or program course(s). To comply with program requirements, EOP students may be required to repeat courses in which they have earned a grade of D or D+.

Students are required to participate in regular tutoring and academic advising sessions.

Essential to EOP is direct financial aid. For each student, a financial aid package is planned which may include grants from EOP, Pell, and Tuition Assistance Program (TAP). All EOP students must submit the Free Application for Federal Student Aid (FAFSA).

**Alfred State Opportunity Program (ASOP)**

The Alfred State Opportunity Program (ASOP) is a special admissions program that offers higher education to high school graduates or holders of high school equivalency diplomas who do not meet traditional admission criteria, but who possess the potential for college success. Unlike the Educational Opportunity Program (EOP), students are not required to meet financial need criteria. The program is designed to help prepare students in meeting chosen program prerequisites and allows for lighter course loads, college preparatory and developmental courses based on college course placement, and support services.

Course work is paced to enhance student success. The first semester schedule is comprised of 12 to 15 credit hours which might include courses in English; math; reading and/or college skills; social, physical, or life science; and/or program course(s). Assistance is available for tutoring, counseling, and academic advising. To comply with program requirements, ASOP students may be required to repeat courses in which they have earned a grade of D or D+.

## ADMISSION TO ALFRED STATE

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### Advanced Standing

#### Previous Credit

A student who has taken college-level courses after high school is considered a transfer student (See Transfer Students section).

Students who are taking college courses while in high school must submit official transcript(s) in order to receive transfer credit.

#### Course Challenges

Any student wishing to challenge a course is responsible for furnishing material, approved by faculty administering the exam, to be used in the challenge examination. The challenge exam fee includes a \$15 recording fee and \$10 per contact hour compensation fee. A student cannot challenge a course he/she is currently registered for after the registration deadline.

#### Credit by Advanced Placement Examination (AP) and College Level Examination Program (CLEP)

Students who successfully complete either Advanced Placement (AP) or College Level Examination Program (CLEP) examinations shall be granted transfer credit, as predetermined by the respective department chairs. Students must request that an official transcript of their grades (a copy of a grade report is not acceptable) be sent to this college. Students contemplating taking an AP or CLEP examination should be aware that Alfred State requires the student to take the "Subject" examination and, if applicable, the optional essay section. Alfred State is a testing center for CLEP. For further information regarding the testing center, please contact the Center for Community Education & Training.

#### Credit From U.S. Armed Forces Institute (USAFI)

The college may grant credit, upon the recommendation of a department chair, for courses of study satisfactorily completed under this program in those cases where such courses have application to a student's program. Credit is treated as transfer credit.

### Registration Process

In order to finalize enrollment at Alfred State, students should refer to the following information:

#### Orientation

Orientation programs are designed to assist new students in adapting to the college and heightening their level of success. Positive relationships among students and faculty/staff are nurtured through numerous opportunities. Orientation is a college-wide initiative, inclusive of academics, student services, and support services of the college.

#### Immunizations

Prior to registration, students must have a completed health form on file with Alfred State Health and Wellness Services and all immunizations completed as stated on the form. A meningitis response page must be read and the appropriate box checked and signed by the student. Accepted students receive a health form in their acceptance materials which can then be taken to their family physician for completion.

#### Academic Advisement

Each student is assigned a faculty adviser within his/her program of study. The adviser helps students plan their program of course work, reviews interim grades with students, and answers questions about personal academic goals, requirements, and academic regulations.

#### Class Schedule/Course Registration

A tentative schedule, based on the students' Math/English placement recommendations, will be prepared during orientation. Final class schedules will be available for new, transfer, and readmit students on final registration day.

Continuing students will meet with their academic adviser during a designated time each semester to discuss course selection for the next semester and to receive their Registration Authorization Code.

Before meeting with their adviser, they will print their Course Selection Form found in Banner Web under “Student Forms” within the Student Services and Financial Aid link, and begin choosing classes for the upcoming semester. Registration is done online in Banner Web. Available classes can be accessed by going to Banner Web and clicking on “Class Schedule” prior to entering the secure area.

Continuing students will print their own schedules from Banner Web and adjustments to this schedule may be made during Add/Drop.

New, transfer, and readmit students will meet with their academic faculty advisers on registration day to pick up and discuss their final schedules. These final schedules will indicate if students need to process their bills with the Student Records and Financial Services Office. Students are not considered registered until they have picked up their final schedule and paid/processed their bill. Completed student health forms must also be returned to Health and Wellness Services at this time.

Note: Courses are dropped for students who do not process their bills by the due date.

## **Community Education & Training (CCET)**

**Email - [ccet@alfredstate.edu](mailto:ccet@alfredstate.edu)  
(607) 587-4015**

### **CONTINUING EDUCATION/PART-TIME STUDENTS**

Credit courses are open to all who might benefit from study and are qualified by previous education or work experience. High school graduation is not required. Financial aid is not available.

The college's refund policy is followed for all credit courses.

Students may enroll in regular day and evening courses, online, summer school, winter session, or a combination of all. Advising and referral services are available.

### **SUMMER SCHOOL/WINTER SESSION**

Summer sessions provide students the opportunity to take courses in preparation for entering their freshman semester, getting ahead in their program, or lightening their semester load. Courses are conducted on an accelerated schedule, allowing the student to take multiple courses.

Summer housing is available for those students from out of the area who are attending on campus summer sessions.

Winter session provides students with the opportunity to take online courses to get ahead in their program or to lighten their semester load. Courses are conducted on an accelerated schedule.

### **COOPERATIVE COLLEGE-LEVEL PROGRAM FOR HIGH SCHOOL STUDENTS**

This program offers high school juniors and seniors the opportunity to take college-level courses on the Alfred campus with college students. This is a collaborative program and is open only to participating high schools. Financial aid is not available.

Course availability is based on classroom seat availability.

### **NONCREDIT ON/OFF CAMPUS COURSES**

CCET coordinates and oversees all noncredit academic, personal development, and contract programs offered by the college. These programs are open to all with no requirements of previous education or work experience.

### **ONLINE NONCREDIT COURSES**

CCET offers noncredit online courses in RHIT/coding exam prep, essentials of anatomy and physiology, computer, writing, personal enrichment, test preparation, small business, paralegal, health care professional, large business/management, project management, and more through a Web-based delivery system. Internet access, email address, and Web browser are needed.

### **CLEP**

CCET administers College Level Examination Program (CLEP) examinations, which allow students to receive transfer credit for specific courses upon attaining the required scores.

### **BUSINESS/INDUSTRY PROGRAMS**

The CCET provides training and consulting services to support economic and personal development throughout the Southern Tier. CCET contracts with small to large business, industry, and government agencies to provide pre-employment skills training, job skills upgrade, and programs to increase competitiveness and retain employees.

The New York State Department of Transportation (NYSDOT) and the Quality Control/Quality Assurance (QC/QA) Task Force of New York Construction Materials Association collaborate with the college through



CCET to conduct the QC/QA Technician Certification Program for Hot Mix Asphalt in New York State. This program is held every spring on the Alfred State campus.

Alfred State and the Associated General Contractors of America collaborate through the CCET to conduct the New York State Hot Mix Asphalt (NYS HMA) Density Inspector Certification program. This program is scheduled multiple times per year around New York State.

Alfred State and the NYSDOT collaborate through the CCET to conduct the NYSDOT welding certification program. This program is scheduled multiple times per year in Wellsville, NY; other sessions are also scheduled around Western New York.

The college, through CCET, is a training provider for the NYS Office of Alcoholism and Substance Abuse Services. The program provides training for those who wish to maintain or begin a career in the field of alcohol and chemical dependency counseling; Credentialed Alcoholism and Substance Abuse Counselor (CASAC) designation and the Credentialed Prevention Professional (CPP) and Credentialed Prevention Specialist (CPS). For more information on CASAC visit <http://www.oasas.ny.gov>.

**FINANCIAL INFORMATION**

## Financial Information

**COLLEGE COSTS**

Alfred State strives to keep tuition and fees at reasonable rates. Charges may vary due to different room and meal choices, program costs, and fees selected. The chart below is designed to give you an idea of the average student's charges and expenses.

**2013-14 College Costs (Subject to change - costs listed are based on the latest information available at the time of printing.)**

<b>BILLED CHARGES</b>	FALL	SPRING	YEAR
<b>TUITION</b>			
NYS Resident	\$2,935.00	\$2,935.00	\$5,870.00
Nonresident (Associate)	4,870.00	4,870.00	9,740.00
Nonresident (Bachelor)	7,660.00	7,660.00	15,320.00
<b>COMPREHENSIVE FEE</b>	712.00	712.00	1,424.00
<b>ORIENTATION FEE</b>			100.00
Full-time, new students (excluding online)			
<b>ROOM RENTAL</b>			
Double	3,440.00	3,440.00	6,880.00
Small Single	3,710.00	3,710.00	7,420.00
Large Single	3,890.00	3,890.00	7,780.00
Townhouse	4,080.00	4,080.00	8,160.00
<b>MEAL PLAN</b>	2,350.00	2,350.00	4,700.00
(18-meal plan shown, other options available)			
<b>FOREIGN STUDENT MEDICAL INSURANCE</b>	463.75	649.25 (spring/summer)	1,113.00
<b>CLINICAL LIABILITY INSURANCE</b>	\$15.00	\$15.00	
<b>OPTIONAL FEES</b>			
CAMPUS SPENDING ACCOUNT (For textbooks, supplies, and misc. - approx.)	550.00	550.00	1,100.00
FITNESS CENTER FEE	45.00	45.00	90.00
GRADUATION FEE		50.00 (per degree)	
VEHICLE REGISTRATION	95.00 (yearly fee)		
<b>LATE REGISTRATION FEE**</b>	50.00		

\*\*Students who registered or paid their bill after the initial billing due date for each term are subject to this fee.

**POSSIBLE ADDITIONAL EXPENSES (Not included in college's billed costs):**

Clinical Internship	Tools	Personal Expenses
Books and Supplies	Telephone	Computer Hardware and Software
Transportation	Uniforms	

**PART-TIME STUDENTS**

NYS residents enrolled in day or evening programs carrying fewer than 12 credit hours are charged \$245 per credit hour. Tuition for nonresidents is \$406 per credit hour for associate degree programs or \$638 per credit hour for bachelor degree programs. Part-time students are also charged mandatory fees (prorated per credit hour).

**New York State Residency:** The Student Records and Financial Services Office will determine New York State residency per SUNY guidelines. If NYS residency status is in question, the student will be charged out-of-state tuition until the student provides proof of NYS residency. Forms are available in the Student Records and Financial Services Office and online.

Certain nonresident students may be eligible for the resident tuition rate if they meet the following requirements:

1. Are not nonimmigrant aliens within the meaning of 8 USC §1101(a)(15) (See Other Related Information below), and
2. Attended an approved New York State high school for two or more years, graduated from an approved New York State high school and applied for admission to the university within five years of receiving a New York State high school diploma; or
3. Attended an approved New York State program for a General Equivalency Diploma (GED) exam preparation, received a GED and applied for admission to the university within five years of receiving the GED; and
4. If the student is without lawful immigration status, the student submits to the campus a notarized affidavit stating that the student has filed an application to legalize his or her immigration status, or will file such an application as soon as he or she is eligible to do so (See NYS Education Law §355(h) (8)).

\* **All costs are subject to change.** The above costs are based on the latest information available at the time of printing.

## **EXPLANATION OF FEES & PAYMENT OPTIONS**

**Student Comprehensive Fee** - This fee is paid by all students in order to provide quality services to everyone. The services are available to students whether or not the student chooses to take advantage of them. The fee is comprised of:

- **Activities Fee** - Established by students through their incorporated student government. The fee covers student activities such as the weekly newspaper, student organizations, social activities, cultural events, films, and recreational programs.
- **Athletic Fee** - Supports the college's 18 intercollegiate sports teams and entitles students to free admission to all campus sporting events.
- **College Fee** - Established by the SUNY Board of Trustees.
- **Health Fee** - Allows students to receive medications, physician consultations, and all available health services for no additional fee.
- **Technology Fee** - Supports computer technology operations, upgrades, and improvements in laboratories and classrooms.
- **Transcript Fee** - Guarantees students unlimited copies of their transcripts.
- **Transportation Fee** - Supports student transportation services.

**Orientation Fee** - A \$100 mandatory one-time orientation fee is billed to all full- and part-time new and transfer students to cover the cost of programs, food, and registration requirements. Online\* and readmission students are not required to attend and will not be charged the orientation fee.

\*All new and transfer health information technology and coding & reimbursement specialist students will receive an email with login information for a mandatory online orientation course. All other online programs are exempt from orientation participation.

**Clinical Liability Insurance** - Provides malpractice insurance coverage for students participating in specific clinical programs.

### **Optional Fees:**

**Fitness Center Fee** - (if used) For use of the Fitness Center (located on the ground floor of Orvis). It offers top-of-the-line selectorized weight machines, computerized fitness and aerobic equipment, and a free weight area.

**Graduation Fee** - Commencement Policy - All students must pay a nonrefundable fee in order to participate in the commencement ceremony. This fee will be imposed per ceremony attended. Students receiving more than one degree may also be charged for additional accoutrements at the Campus Store. All students graduating from a bachelor's degree program must pay an additional cost for the bachelor

## FINANCIAL INFORMATION

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hoods. Students must attend the ceremony to receive diploma cover and/or honor cord. Please note: bachelor's degree graduates will be required to pay \$30 at the Campus Store for their bachelor hoods when they pick up their regalia. No fee is assessed for those that applied to receive their diplomas without attending the ceremony.

**Vehicle Registration Fee** - Mandatory on all vehicles parked on campus. Vehicles must be registered at the Parking Registration Office (located in the Theta Gamma House) where vehicle hang tags are issued.

**Foreign Medical Insurance** - Enrolls student in an accident and health insurance program. If you have questions about this plan, you may call the Student Records and Financial Services Office at (607) 587-4253. Enrolling in the Foreign Insurance Program is mandatory.

**Meal Plans** - Students living on campus MUST have a meal plan. Meal plans are also available for commuters. Carefully review your plan choice and change the amount if necessary. If you have specific meal plan questions, you may call the ACES Office at (607) 587-4064.

### PAYMENT OPTIONS

Fall semester bills are available online July 1 (or the first business day if the 1st falls on a weekend); spring bills are available online in November. Both are given a due date well before classes begin. Payment is due on this date for the students to be preregistered and to avoid a \$50 late registration fee and cancellation of their course registrations.

**Bills not processed before the due date will be assessed a \$50 late registration fee.** Bills processed after the due date must include the \$50 late fee to be processed and must be received by Final Registration Day. All bills must be signed to assure identity. This may be done by signing the bill on the line indicated and mailing or faxing it to Student Records and Financial Services or by processing online. Due to signature requirements, we are unable to process bills over the phone.

Temporary deferment of payment may be granted at bill-processing time for students who have proof of financial aid or scholarships that will cover the billed amounts. Balances can be paid by cash, check, MasterCard, VISA, Discover, or wire transfer. As financial payments are received by the college, they will be first applied to any outstanding balance. Refunds will be issued only when the bill is paid in full. In a continuing effort to assist our customers, Alfred State also offers monthly payment plan options. Information regarding the plan is available online.

**Students Receiving Title IV aid need to know:** Students need to authorize the use of Title IV financial aid (federal grants and loans) to pay noninstitutional charges (optional fees and vehicle registration). If you choose not to provide this authorization, you will be responsible for paying your optional fees even if you have a credit balance from Title IV financial aid. You will be asked your preference for this authorization during bill processing.

### Student Consumer Information

#### Bill Payment

The college may receive funds for a student from various sources. All monies are applied to the student's account as received until the bill is satisfied. If the college receives funds that result in a refund for the student, the refund will be available for pickup in the Student Records and Financial Services Office for one week. Any remaining refund checks not picked up after one week will be mailed to the student's home address. Go to Banner Web, click on "Student Services and Financial Aid," click on "Student Accounts," then on "Display Refund Detail" to see if a refund has been generated.

**Importance of Proper Registration** - Students must properly register and pay by the appropriate deadlines for all courses for which they expect to receive credit. Students are cautioned that simply attending classes and completing course requirements does not entitle anyone to register after the deadlines have passed or to claim credit for a course in which he/she has participated as an unregistered or a deregistered student. Students must resolve all problems regarding registrations with the Student Records and Financial Services Office. Questions about payments are handled in the Student Records and Financial Services Office.

Late registrants are students who are registered or have processed their bill after the initial billing due date each term. Late registrants will be subject to a late registration fee of \$50. This fee is nonrefundable.

**De-registration/Blocking** - Students who do not comply with published tuition payment deadlines or who have other major obligations to the college may be de-registered, or automatically dropped, from the courses for which they have registered prior to the new academic period. They may also be blocked from receiving college services such as official transcripts and placement records.

**Deadlines** - Courses may be added and dropped according to academic regulations. Please refer to section 500 of the academic regulations found in the academic information section of the catalog or online at [www.alfredstate.edu/academic-regulations](http://www.alfredstate.edu/academic-regulations). Full semester courses dropped after the first week of class will incur a liability, according to the liability policy which follows. For courses less than a full semester in length, please contact the Student Records and Financial Services Office for the appropriate liability schedule.

**Liability Policy**

All tuition and fee liabilities are calculated based on the date of separation as recorded in the Student Records and Financial Services Office. Students who will be separating from the college must file the appropriate paperwork with the Student Records and Financial Services Office. Following is a liability schedule based upon the 'official' withdrawal date or date the class is dropped. Students begin incurring charges the first day of the semester, not the day they complete the registration process.

A student who is dismissed from Alfred State for academic or disciplinary reasons prior to the end of the academic term, shall be liable for all costs for that term and shall not be eligible for a reduction of charges or a refund of payment made.

**Tuition, Student Activity Fee, Athletics Fee, Technology Fee, Health Fee:**

*1st week	0 percent liability
2nd week	30 percent liability
3rd week	50 percent liability
4th week	70 percent liability
5th week	100 percent liability

*\*For liability purposes, the first day of class session shall be considered the first day as reported on the academic calendar. The end of the first week shall be figured as of the close (at 4 p.m.) of five business days.*

**Orientation Fee:** Nonrefundable.

**College Fee, Late Registration Fee, and Transcript Fee:** Nonrefundable after the first week.

**Fitness Center Fee, Graduation Fee, and Vehicle Registration Fee:** Charges are removed only if the student withdraws during the first four weeks of classes. The vehicle hang tag must be returned; Fitness Center fee will only be removed if not registered. After the fourth week all charges will remain on the student's bill.

**Room Rent:**

1st week	0 percent liability
2nd - 8th week	50 percent liability
After 8th week	100 percent liability

Meal Plan; Campus Spending Account: **Unused portions are refunded by the ACES Office or credited to the student's bill.**

**RETURN OF TITLE IV FUNDS**

If a student withdraws, is dismissed, or takes a leave of absence prior to the 60 percent point of the semester, Title IV funds must be returned to the source based on federal regulations. For the purpose of

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the return of Title IV funds, Title IV aid is PELL, SEOG, Federal Perkins Loans, Federal subsidized and unsubsidized Stafford Loans, and Federal PLUS loans. Students who do not complete at least 60 percent of the semester and are receiving Title IV aid may owe a bill after funds are returned to the source. A student will be reviewed to determine if he or she is an unofficial withdrawal at the end of the semester due to receiving failing grades in all of their course work. If no last date of attendance can be determined through our attendance monitoring process, the period midpoint will be used. The student must repay funds credited to his or her account as determined by the Federal Return of Title IV Aid Calculation.

### ADJUSTMENTS TO BILL

Removal of charges from a student's bill must be made before or at the time of processing. Any student not requesting a correction to the bill prior to the end of the first week of classes will be liable for those charges.

Any appeal of a fee must be in writing, with justification, and submitted to the director of the appropriate department by the end of the first week of the semester.

**Late Registration Fee:** Any students who have not registered for classes, paid their bill, or **processed their bill** by the bill due date, will be assessed a \$50 late registration fee. This fee is nonrefundable.

**Penalties for Nonpayment:** Nonpayment of charges will result in current semester registration being dropped, late fees assessed, the holding of transcripts, and possible denial of future registration. Unpaid accounts will be forwarded to a collection agency or to the Attorney General's Office.

**Late Payment Fee:** A monthly late payment fee of up to \$50 is assessed to any account with an outstanding balance. This fee will be added to any account turned over for collection purposes.

**Returned Checks:** A fee of \$20 will be charged for checks returned for insufficient funds.

**Disbursement of Loans, Grants, Scholarships:** The college may receive funds for a student from various sources. All monies are applied to the student's account as received until the bill is satisfied. If the college receives funds that result in a refund for the student, the refund will be available for pickup in the Student Records and Financial Services Office for one week. Any remaining refund checks not picked up after one week will be mailed to the student's home address.

### FINANCIAL AID

Financial aid comes from a variety of sources. Students must file a Free Application for Federal Student Aid (FAFSA) as soon after Jan. 1 as possible for each academic year in which they want to receive federal Title IV financial aid. The FAFSA can be completed online at [www.fafsa.gov](http://www.fafsa.gov). Once the form is submitted, students can print a confirmation page as receipt of the application. While on the FAFSA confirmation page, New York State residents who plan to enroll full time can apply for "TAP on the Web." TAP can also be applied for online at [www.tapweb.org](http://www.tapweb.org). Alfred State's school codes for financial aid are:

002854 for the FAFSA  
3005 for TAP associate degree programs  
6005 for TAP baccalaureate degree programs

Links to these online applications and other financial aid information can be found at [www.alfredstate.edu/my-finaid](http://www.alfredstate.edu/my-finaid).

### Your Financial Aid Award

All students are considered for all types of aid, and financial aid packages are made according to a student's eligibility in each program as determined by federal and state regulations. Awards are determined by financial need based on data provided by the student on the FAFSA. The offer of financial aid is conditional based upon continuation of legislative authority and availability of appropriated funds. Financial need is calculated using the following formula:

Cost of Attendance (tuition, room, meals, fees, books, transportation) - Expected Family Contribution  
(EFC determined by FAFSA) = Financial Need

Electronic financial aid award letters are sent to accepted students with paid deposits via their Alfred State email account beginning in early spring for those with a valid FAFSA on file with the college. Detailed instructions are provided to students on how to accept and apply for their aid. Generally, financial aid can be categorized into three types:

1. **Scholarship and grant aid** are considered gifts and **do not need to be repaid**. These include the Federal Pell Grant, Federal Supplemental Educational Opportunity Grant (SEOG), NYS Tuition Assistance Program (TAP) for NYS residents enrolled full-time, Aid for Part-time Study (APTS) and part-time TAP for NYS residents enrolled part-time, and the Educational Opportunity Program (EOP) for NYS residents who meet established academic and economic guidelines.  
 Students should contact the NYS Higher Education Services Corp. for information on scholarships for volunteer firefighters, victims of the World Trade Center disaster, and certain types of military and public service. The phone number is (888) 697-4372. Information can also be found on the Web at [www.hesc.com](http://www.hesc.com).  
 Students receiving veterans' educational benefits through the Department of Veterans' Affairs must provide a copy of their Certificate of Release or Discharge from Active Duty (DD214) or their certificate of eligibility for benefits to the veterans' certifying official in the Student Records and Financial Services Office. Here students will receive required forms and enrollment certification for the completion of their application for veterans' educational benefits. Alfred State is a participating member of the Yellow Ribbon Program.  
 Campus scholarships are primarily given out by the Admissions Office. Scholarship opportunities and requirements can be viewed on the Web at [www.alfredstate.edu/paying-for-college](http://www.alfredstate.edu/paying-for-college). Links to outside scholarship searches are also provided. Students are encouraged to seek scholarships and grants through their local high schools, civic organizations, and employers.
2. **Loans do need to be repaid** and should be considered as serious commitments. These include the Federal Subsidized and Unsubsidized Stafford Loans, Federal Perkins Loan, and Federal Nursing Loan. These loans are in the student's name and eligibility is determined by financial need based on results of the FAFSA. Students are directed by the college to complete an electronic Master Promissory Note (MPN). Under an MPN students can receive subsequent loan disbursements at the same school for up to 10 years without having to complete another promissory note. Interest rates and terms are set by the federal government and students must be enrolled a minimum of six credit hours per semester in a matriculated degree-granting program. These loans have a grace period before repayment begins once the student is no longer enrolled or drops below half-time enrollment.  
 The Federal Parent PLUS Loan is taken out in the parent's name on behalf of the student. Repayment begins 60 days after the loan is fully disbursed. This loan is also applied for using an electronic Master Promissory Note (MPN). Interest rates and terms are set by the federal government and students must be enrolled a minimum of six credit hours per semester in a matriculated degree-granting program. The Federal Parent PLUS Loan can be deferred while the student is enrolled. Parents interested in deferment should contact their lender directly.  
 Private Alternative Loans are nonfederal loans made by commercial lenders and should be considered loans of last resort. Alternative Loans have higher fees and interest rates. Terms can vary by lender and loan product. Students must be at least 18 years old to apply in their own name and usually require a credit-worthy cosigner.
3. **Employment and Federal College Work-Study** is a way for students to earn money through a part-time job in order to contribute toward their college costs. Work-study awards are offered to students with demonstrated financial need based on FAFSA results. Students are paid at an hourly rate every two weeks for the hours worked. Work Grant is a limited funding source that is not based on financial need; however, specific skills may be required for some jobs.

### **Student Loan Counseling**

**Entrance counseling** – First-time borrowers under the Federal Stafford Loan Program are required to complete an online loan counseling session before loan funds can be disbursed. The session is designed to inform student borrowers of their rights and responsibilities under the Federal Stafford Loan program. Entrance counseling for new borrowers under the Federal Perkins Loan is done at the time students sign their electronic Federal Perkins Loan Master Promissory Note (MPN). Nursing Student Loan borrowers must also complete online student loan counseling.

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**Exit counseling** – Students separating from the college due to graduation, withdrawal, leave of absence, dismissal, or less-than-half-time enrollment are required to complete an online loan exit counseling session. The session is designed to help students avoid the pitfalls of default by informing them of their repayment obligations as well as their deferment and forbearance rights under the loan programs from which they borrowed.

### **Income Verification and Other Requests for Information**

Under the guidelines of established selection criteria, some students who apply for federal Title IV aid will be required to provide copies of parent and/or student federal income tax returns and/or other income documentation to the Student Records and Financial Services Office for the purpose of income verification. Other requests may include verification of family size, signatures on the FAFSA, or requests for assets to name a few. All documentation submitted must be signed by either the taxpayer or preparer and should clearly reference the student's name and ID number. Title IV aid will not be processed until all requested documents have been received and reviewed by the Student Records and Financial Services Office.

### **Quality Assurance Program (QAP)**

Alfred State is a participant in the Federal Quality Assurance Program (QAP). Through this program, a random sample of students is selected for additional verification of FAFSA data. Students are required to provide requested documentation to the Student Records and Financial Services Office. The purpose of QAP is to ensure that Federal Title IV funds are being awarded to the students entitled to those funds.

### **Selective Service Registration**

Prior to receiving Title IV funds, the Higher Education Act mandates that males between the ages of 18-25 register with the Selective Service System. Registration can be completed on the FAFSA or at [www.sss.gov](http://www.sss.gov). Male students who fail to register will be ineligible for Title IV financial aid.

### **Methods of Notification**

Accepted students with paid deposits are provided with an active Alfred State email account. Award letters, requests for information, and changes to a financial aid package are sent to students' Alfred State email accounts. It is the students' responsibility to regularly check their campus email for such updates and requests. Students should also be aware that they can view the status of their financial aid and requests for information anytime using the college's Banner Web student information system.

### **Overaward Policy**

Overawards occur when students receive financial aid resources in excess of the college's cost of attendance. In this instance, the Student Records and Financial Services Office is required under federal student aid regulations to reduce or cancel any resources affected by the overaward. Students receive written notification by the Student Records and Financial Services Office when an overaward is identified and are advised which funds need to be adjusted. In some cases, this could leave a student owing a balance on the semester bill. Students are encouraged to notify the Student Records and Financial Services Office in writing immediately if they receive additional funds that were not included in their original financial aid package.

### **Consortium Agreements**

Alfred State will process financial aid for its matriculated students who are also attempting course work as a 'visiting' student at another college or university. Prior approval is required by the student's academic department to ensure that the course work will transfer into Alfred State and meet the student's graduation requirements. Complete procedures and consortium agreement forms are available by contacting the Student Records and Financial Services Office.

### **Academic Criteria for Financial Aid**

Alfred State is required to monitor the academic progress of students receiving federal and state financial aid. Students who are not maintaining satisfactory academic progress (SAP) and pursuit of program (POP) according to established guidelines are not eligible for federal Title IV and/or state financial aid. In addition, students cannot receive federal and/or state financial aid for courses not applicable to the major in which they are matriculated.



**New York State Criteria/Requirements for Tuition Assistance Program (TAP) (full-time enrollment):**  
 Reviewed at end of each semester.

Category	Minimum for initial enrollment payment	After 1 TAP payment	After 2 TAP payments	After 3 TAP payments	After 4 TAP payments	After 5 TAP payments	After 6 TAP payments	After 7 TAP payments	After 8 TAP payments	After 9 TAP payments	After 10 TAP payments	
TAP - POP (Pursuit of Program)	Enroll full-time	6 hours taken	6 hours taken	9 hours taken	9 hours taken	12 hours taken	12 hours taken	12 hours taken	12 hours taken	12 hours taken	12 hours taken	
TAP - SAP (Satisfactory Academic Progress)	AAS, AA, AS, AOS  Bachelor	Earn 6 hours 1.30 cum.  Earn 6 hours 1.50 cum.	Earn 15 hours 1.50 cum.  Earn 15 hours 1.80 cum.	Earn 27 hours 1.80 cum.  Earn 27 hours 1.80 cum.	Earn 39 hours 2.00 cum.  Earn 39 hours 2.00 cum.	Earn 51 hours 2.00 cum.  Earn 51 hours 2.00 cum.	Earn 66 hours 2.00 cum.  Earn 66 hours 2.00 cum.		Earn 81 hours 2.00 cum.	Earn 96 hours 2.00 cum.	Earn 111 hours 2.00 cum.	2.00 cum.

**Students Receiving TAP Need to Know That:**

**TAP Aggregate** – Students enrolled in associate degree programs can receive up to six semesters of TAP (six payment points per semester) for a total of 36 payment points. Bachelor's degree students can receive up to eight semesters of TAP or 48 payment points. Students who qualify under the Educational Opportunity Program (EOP) can receive up to 10 semesters or 60 payment points. TAP payments received at other schools are still counted in the aggregate when students transfer schools.

**Repeating Courses** – Students must enroll in a minimum of 12 new credit hours each semester to qualify for TAP. Under many academic programs, repeating a course that previously received a passing grade cannot be included as part of the required credit hours for that semester when determining TAP eligibility. However, the following exceptions apply: (1) when a failed course is repeated; (2) when a grade received is passing at the institution, but is unacceptable in a particular program as stated in the college catalog by the academic department; and (3) when a course may be repeated and credit is earned each time. The Student Records and Financial Services Office determines if students are out of SAP-POP compliance as part of the TAP certification process. Students are notified of their ineligibility by the Student Records and Financial Services Office.

**Withdrawal or Leave of Absence** – Students who received TAP for a semester from which they withdrew or took a leave of absence and did not earn any academic credit are not considered to be fulfilling the pursuit of program requirements and would be made ineligible for TAP for the next enrollment period.

**2.0 GPA** – Students having received four semesters of TAP (24 payment points) must have a 2.0 cumulative GPA (out of a possible 4.0) to continue receiving TAP. This includes students who may have received TAP payments at another college prior to enrolling at Alfred State.

**Sit-Out** – Students who become ineligible to receive state financial aid for a semester due to poor academic performance or failure to meet pursuit of program requirements may sit out for one year. Students would then be eligible to receive the state financial aid for which they qualify upon their return. Sit-out does not apply to the TAP 2.0 requirement.

**Aid to Part-Time Students (APTS)** – Although part-time students are not eligible for TAP, APTS is deducted from a student's available TAP payments. Two APTS payments (three points each) equal one TAP payment (six points).

**Part-Time TAP** – Similar to APTS, part-time TAP is also deducted from a student's total available TAP payments. However, instead of using three points for each semester of part-time enrollment, points are used according to the actual number of part-time credit hours taken against the percentage of a full TAP award.

**Federal Criteria/Requirements: Reviewed at the end of each semester.**

Credit Hours Attempted	Completion of Credit	Minimum GPA
0 - 19	67 percent	1.30
20 - 36	67 percent	1.75

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37 - 50	67 percent	1.90
over 50	67 percent	2.00

### **Students Receiving Federal Title IV Aid Need to Know:**

**Degree Completion** – Students must complete their degrees or certificates within 150 percent of the normal credits required for completion. Students who change programs and are in good academic standing are considered to be at the semester level based on the number of transfer credits accepted by the new program. For any subsequent program changes or program changes due to poor academic standing all attempted hours will be considered. Example: If an AAS student needs 60 credit hours to complete a degree, he/she cannot receive aid after 90 credit hours have been attempted.

**Federal Warning** – Students found to be below the academic standards for federal aid eligibility will be placed on federal aid warning for one semester. Students who have not regained eligibility by the end of the warning semester will be ineligible for federal aid.

### **Waiver Procedures**

Students who experienced extenuating circumstances that affected their academic progress resulting in the loss of their financial aid eligibility may file a waiver to appeal the SAP-POP and/or Title IV requirements. Students interested in filing for a waiver are encouraged to contact the Student Records and Financial Services Office for instructions. Waiver procedures are also provided to students in writing when they receive their notice of ineligibility.

### **Remedial Courses**

Alfred State offers credit and noncredit remedial courses which will be counted toward the number of credit hours attempted and taken for the purpose of financial aid. However, remedial courses may not be counted in the number of credit hours earned.

### **Incomplete Course Work, Withdrawals, and Repeated Course Work**

Course work that has not had a grade issued will not count in credit hours earned and may impact financial aid eligibility. Withdrawal from courses that will have a grade of withdrew passing/failing will be counted in hours attempted and/or earned. Courses repeated due to a failing grade will have the highest earned grade count in hours attempted and/or earned.

### **Questions**

Questions in regard to any of the above information can be directed to: Alfred State Student Records and Financial Services Office, 10 Upper College Drive, Alfred, NY 14802; Phone (800) 4-ALFRED; or email sfs@alfredstate.edu.

## **SCHOLARSHIPS AVAILABLE AT ALFRED STATE**

Alfred State is proud of its commitment to recognize outstanding students by offering numerous scholarships. Since it is the desire of Alfred State to award scholarships to as many students as possible, students do not receive more than one scholarship. Acceptance deposits must be paid by the due date in order to be eligible for scholarship consideration as well as to maintain any scholarship awards.

The Alfred State Athletic Department is a NCAA Division III member. Therefore, no consideration of athletic ability or athletic accomplishments will be considered in determining students' scholarship eligibility or financial aid packages.

The following scholarships are available, while funding exists, to incoming students who have been accepted for the fall semester into a regular program for full-time study:

**Academic Distinction Scholarship** - \$1,000 awarded to first-time freshman students who possess an 87 or better cumulative high school average through their junior year; at least a 1070 (critical reading and math) combined SAT or 23 composite ACT score is required; multiple scholarships available while funding exists; students must maintain required GPA to receive funding in subsequent semesters.<sup>1</sup>

**Agricultural Endowed Scholarship** - Awarded to student enrolling in an agriculture program.<sup>2</sup>

**Alfred State Distinguished Scholars Program:** *(Please note that the Distinguished Scholars Program Scholarships are for first-time freshmen students only. Students must live on campus and be U.S. citizens or permanent residents to receive these three scholarships. Scholarships are guaranteed to qualified students who are accepted and provide official documentation of meeting the necessary criteria by March 1.)*

**Excellence in Education Scholarship** - Free tuition (equivalent to NYS tuition rate), room (standard room, double occupancy), and board (14-meal plan); multiple scholarships available; students must possess a 93 or better cumulative high school average through their junior year; at least a 1200 (critical reading and math) combined SAT or 26 composite ACT score is required, and students must apply for financial aid with any TAP award applied toward the cost of tuition; must maintain required GPA to receive funding in subsequent semesters.<sup>1</sup>

**Presidential Scholarship** - Free room (standard room, double occupancy); multiple scholarships available; students must possess a 90 or better cumulative high school average through their junior year; at least an 1150 (critical reading and math) combined SAT or 25 composite ACT score is required; must maintain required GPA to continue to receive funding in subsequent semesters.<sup>1</sup>

**All-American Scholarship** - Free board (14-meal plan); multiple scholarships available; students must possess an 88 or better cumulative high school average through their junior year; at least an 1100 (critical reading and math) combined SAT or 24 composite ACT score is required; must maintain required GPA to continue to receive funding in subsequent semesters.<sup>1</sup>

**Allegany County Counselors' Association Annual Scholarship** - Awarded to student attending high school in Allegany County who will be enrolling in a vocational or technical program; preference given to student who attended BOCES while in high school; applications available in high school guidance offices in early spring.<sup>3</sup>

**Allegany County School Food Service Association Scholarship** - \$200 awarded to a student with a financial need from Alfred-Almond, Andover, Bolivar-Richburg, Friendship, or Wellsville school districts who is entering the culinary arts program. Letter of interest should be sent to the Culinary Arts Department.<sup>5</sup>

**ALSTOM Power Inc./Air Preheater Annual Scholarship** - \$300 awarded to students enrolling in the electrical construction & maintenance electrician, machine tool, and welding programs.<sup>2</sup>

**Alumni Scholarship** - \$500 a year awarded to first-time freshmen students who are the child or grandchild of an Alfred State alumnus; multiple scholarships available; student must have at least an 85 high school average (through end of junior year); a letter must be sent to Admissions Office indicating student's name as well as the alumnus' name at the time of graduation, the year graduated from Alfred State, and the student's relationship to the alumnus.<sup>4</sup>

**Alumnus 1939 Endowed Scholarship** - Awarded to academically talented incoming students.<sup>2</sup>

**Anderson Family Endowed Scholarship** - Awarded to academically talented incoming student.<sup>2</sup>

**Association of Diesel Specialists (ADS)/Ortner Scholarship** - Up to \$750 awarded to students enrolling in heavy equipment: truck & diesel technician; applications available from [www.automotivescholarships.org](http://www.automotivescholarships.org).<sup>3</sup>

**BG Scholarship** - Awarded to incoming and current students; information and application available at [www.bgscholarship.com](http://www.bgscholarship.com).<sup>3</sup>

**Evelyn C. and Rumsey C. Billings Memorial Endowed Scholarship** - Awarded to academically talented incoming students from Steuben and Otsego counties.<sup>2</sup>

**Lee Brasted Engineering Science Endowed Scholarship** - Awarded to a student enrolling in the engineering science program.<sup>2</sup>

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**Bully Hill Vineyards Award** - \$1,000 awarded to incoming students enrolling in the culinary arts or culinary arts: baking, production and management programs; scholarship application available on the Alfred State website.<sup>3</sup>

**Anthony C. Cappadonia Endowed Scholarship** - Awarded to an incoming student with a musical background who was a member of his/her high school choir; must have an 80 or better high school average through the end of the junior year; letter of interest should be sent to the Admissions Office by March 1.<sup>5</sup>

**The Car Care Council Women's Board (WB) Scholarship** - Awarded to a female enrolling in an ASE certified, post-secondary automotive technology program; applications available at [www.automotivescholarships.org](http://www.automotivescholarships.org).<sup>3</sup>

**Cross Connection Control Foundations of the Niagara Frontier, Inc., Annual Scholarship** - Awarded to student enrolling in air conditioning and heating technology program.<sup>2</sup>

**Culinary Arts Scholarship** - \$1,000 awarded to incoming students enrolling in culinary arts or culinary arts: baking, production and management program; students must have an 80 or better high school average through the end of their junior year and be in the top 50 percent of their class; scholarship application available on the Alfred State website.<sup>3</sup>

**Daniel DiFrancesco Memorial Endowed Scholarship** - Awarded to an incoming student enrolling in an agriculture program who exhibits service to school and/or the community, exhibits a strong sense of responsibility to self and dedication to family, and possesses a love of the outdoors and demonstrates an appreciation of nature; letter of interest should be sent to the Admissions Office by March 1.<sup>5</sup>

**Max & Marian Farash Annual Scholarship** - Awarded to student enrolling in mechanical engineering technology or air conditioning and heating technology program.<sup>2</sup>

**Friendship Designated Scholarship** - \$500 awarded to graduates of Friendship Central School accepted into a regular program at Alfred State.<sup>2</sup>

**Genesee Valley Balloon Association Endowed Scholarship** - Awarded to student from Western New York enrolling in an agriculture program.<sup>2</sup>

**Vernon Gleasman SAE Endowed Scholarship** - One \$500 scholarship awarded to academically talented incoming student enrolling in mechanical engineering technology.<sup>2</sup>

**Global Automotive Aftermarket Symposium (GAAS) Scholarship** - Awarded to students enrolling in an ASE/NATEF certified post-secondary automotive, collision repair, or heavy duty program; applications available at [www.automotivescholarships.org](http://www.automotivescholarships.org).<sup>3</sup>

**Michael K. Gowdy Memorial Endowed Scholarship** - Awarded to academically talented students from Wellsville High School.<sup>2</sup>

**W.R. Grace & Company Endowed Scholarship** - Awarded to a student enrolling in the biological science or forensic science technology program.<sup>2</sup>

**Graham Nursing Memorial Endowed Scholarship** - Awarded to incoming nursing students; preference given to students from LeRoy Central or Warsaw Central School districts, then to students from Wyoming County, then to students from the rest of New York State.<sup>2</sup>

**International Excellence Scholarship** - Awards up to \$7,000 to international students who meet two of the following four criteria: 213 TOEFL exam score (79-80 on Internet-based exam, 550 on paper exam), 3.25 college cumulative grade point average (a 90 overall high school average may be substituted), 1200 (critical reading and math) combined SAT score, and/or are a current member of Phi Theta Kappa in good standing.<sup>1</sup>

**International Merit Scholarship** - Awards up to \$3,000 to international students who meet two of the following four criteria: 195 TOEFL exam score (71 on Internet-based exam, 525 on paper exam), 3.0 college cumulative grade point average (an 88 overall high school average may be substituted), 1100 (critical reading and math) combined SAT score and/or are a member of Phi Theta Kappa in good standing.<sup>1</sup>

**Eugene Jacobs Memorial Educational Foundation Endowed Scholarship** - \$1,000 awarded to student enrolling in a baccalaureate degree program; student must have at least an 85 overall high school average through the junior year or a 3.0 cumulative grade point average to be considered.<sup>2</sup>

**John J. Lorenzen and Debbie J. Tranello (NYSAAA) Memorial Scholarship Fund** - \$1,000 awarded to incoming student who is a resident of New York State and is committed to a career in the automotive industry; applications available at [www.automotivescholarships.org](http://www.automotivescholarships.org).<sup>3</sup>

**Suzanne Malachesky Memorial Endowed Scholarship** - Awarded to a commuter student enrolling in the nursing program.<sup>2</sup>

**Rudolf "Rudy" Mazourek Memorial Annual Scholarship** - Awarded to incoming student enrolling in the antibody repair program; preference given to students from Newfield High School or another high school in Tompkins County.<sup>2</sup>

**Lawrence "Bud" McCarthy Educational Foundation Endowed Scholarship** - \$1,000 awarded to incoming student with demonstrated skills in a related technology area; students must have at least an 80 high school average through the end of their junior year to be considered.<sup>2</sup>

**Miller-Neverett Memorial Endowed Scholarship** - Awarded to an academically talented student who demonstrates potential for campus service as evidenced by previous involvement in organizations and activities; letter of interest should be sent to the Admissions Office by March 1.<sup>3</sup>

**Ortho-Clinical Diagnostics Endowed Scholarship** - Awarded to an academically talented student entering the forensic science technology program.<sup>2</sup>

**Out-of-State Scholarship** - \$2,000 awarded to first-time freshman students who reside and attend high school outside of New York State and will be studying on campus; students must possess an 85 or better cumulative high school average through the end of the junior year and be accepted by March 1.<sup>1</sup>

**Phi Theta Kappa External Transfer Scholarship** - \$2,000 awarded to transfer students who are members in good standing of Phi Theta Kappa and are entering a baccalaureate degree program; must provide proof of membership in Phi Theta Kappa; students who have or will earn a baccalaureate degree prior to enrolling at Alfred State are not eligible.<sup>4</sup>

**John Plail Work Ethic Endowed Scholarship** - Awarded to student enrolling in a business program; student must have an 80 or better high school average through the end of their junior year and exhibit achievements in high school; letter of interest as well as a written document identifying student's goals for pursuing business as a career and the importance of having a strong work ethic should be submitted to the Admissions Office by April 1.<sup>4</sup>

**Praxair Designing the Future Annual Scholarship** - \$1,000 awarded to academically talented incoming students enrolling in one of the drafting/CAD programs; students must possess an 85 or better cumulative high school average to be considered.<sup>2</sup>

**Regional Annual and Endowed Scholarships** - Awarded to academically talented incoming freshmen who reside in school districts defined as the residences of Alfred State faculty and staff.<sup>2</sup>

**Floyd and Eleanor Rose Endowed Scholarship** - Awarded to academically talented students from Western New York and Northern Pennsylvania enrolling in either the agricultural technology or building trades: building construction programs; students must have an 85 or better high school average through their junior year to be considered.<sup>2</sup>

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**Russo Family Endowed Scholarship** - Awarded to academically talented incoming students.<sup>2</sup>

**Shaw Family Endowed Scholarship** - Awarded to incoming freshman enrolling in an agriculture program.<sup>2</sup>

**Ernest and Fern Snyder Memorial Annual Scholarship** - Awarded to student enrolling in an agriculture program; student must be from Western New York (west of Rte. 81).<sup>2</sup>

**Standard Motor Products Scholarship** - Awarded to students enrolling in an ASE/NATEF certified automotive vocational school; applications available at [www.automotivescholarships.org](http://www.automotivescholarships.org).<sup>3</sup>

**Steuben Trust Company Annual Scholarship** - Awarded to academically talented students from Allegany or Steuben counties enrolling in the accounting, business administration, or financial services programs.<sup>2</sup>

**Richard D. Stillman Memorial Endowed Scholarship** - Awarded to incoming student who was a member of his/her high school band or choir; must have an 80 or better high school average through the end of junior year; letter of interest should be sent to the Admissions Office by March 1.<sup>4</sup>

**Albert and Judith Styracula Endowed Scholarship** - Awarded to academically talented students from Dundee High School or Yates County.<sup>2</sup>

**Robert A. Sweeney Memorial Endowed Scholarship** - Awarded to student from Steuben County enrolling in a business program.<sup>2</sup>

**Top Hat Scholarship** - \$1,200 awarded to an incoming student enrolling in culinary arts or culinary arts: baking, production and management program; must have an 80 or better high school average through the end of the junior year and be in the top 50 percent of class; scholarship application available on the Alfred State website.<sup>3</sup>

**Transfer Scholarship** - \$1,000 awarded to transfer students entering a baccalaureate degree program; students must have completed at least three semesters with a 3.25 cumulative GPA and demonstrate continuous full-time college attendance since high school graduation; students who have or will earn a baccalaureate degree prior to enrolling at Alfred State are not eligible; available while funding exists.<sup>1</sup>

**Evelyn Turner Culinary Arts Annual Scholarship** (in memory of Henry "Hank" Turner) - \$1,000 each awarded to an incoming student in the culinary arts and culinary arts: baking, production & management programs.<sup>2</sup>

**University of the Aftermarket (U of A) Foundation Scholarship** - Awarded to students enrolling in an ASE/NATEF certified, post-secondary automotive, collision repair, or heavy duty program; applications available at [www.automotivescholarships.org](http://www.automotivescholarships.org).<sup>3</sup>

**Vocational Excellence Scholarship** - \$1,000 per year for two years to first-time freshman students entering a program taught at the School of Applied Technology on the Wellsville campus; multiple scholarships available on a selective basis; to be considered, students must have at least an 83 high school average through the end of their junior year and demonstrate vocational excellence through a combination of education, employment, competition, military experience, and other verifiable activities; students should submit a letter to the Admissions Office indicating how they have excelled in the vocational area as well as two letters of recommendation from qualified individuals verifying skill level; students must maintain at least a 2.5 GPA to continue funding.<sup>4</sup>

**Bea L. Williams Memorial Endowed Scholarship** - Awarded to students attending high school in western Steuben County; applications available in high school guidance offices in early spring; academics as well as school and community activities will be considered in the evaluation process.<sup>3</sup>

The following scholarships are awarded by the appropriate academic department to continuing Alfred State students based on performance while at Alfred State:

Alstom Power Inc./Air Preheater Annual Award  
American Institute of Architects Southern New York Chapter Annual Scholarship  
Will Arlow Motorsports Annual Scholarship  
Dr. Khalid Ashraf Memorial Endowed Scholarship  
Automotive Service Excellence (ASE) Endowed Scholarship  
Kathy Barnes Honorary Guardian of Nursing Annual Scholarship  
Bethesda Foundation Annual Scholarship  
EJ Brown Memorial Annual Scholarship  
Paul Buckman Memorial Annual Award  
Bully Hill Vineyard Culinary Arts Annual Scholarship  
Matthew Burzycki Memorial Endowed Scholarship  
Gertrude Butera Business Technology Annual Award  
Anthony Carino Memorial Endowed Scholarship  
James Comstock Memorial Annual Scholarship  
Creative Writing Annual Award  
Culinary Arts Alumni Scholarship  
Culinary Arts Award  
Culinary Arts Continuing Education Award  
Culinary Arts Perfect Attendance Award  
Culinary Arts Performance Award  
Dalrymple Companies Annual Scholarship  
Norman A. Diedrich Endowed Scholarship  
Drafting Achievement Annual Scholarship  
Drafting/CAD Freshman Subsidiary Annual Award  
Joel French Memorial Endowed Scholarship  
Henry and Rosa Gabriel Endowed Scholarship  
Donald Gadley Memorial Annual Scholarship  
Professor Brian Gillespie Memorial Endowed Scholarship  
Eleanor Graves Memorial Endowed Scholarship  
Ralph B. Harmon Memorial Endowed Scholarship  
Doris Harriger Memorial Annual Scholarship  
Mary Heider Memorial Annual Scholarship  
Shirley Hellwig Memorial Annual Scholarship  
Donald B. Holzer Endowed Scholarship  
Hunter Family Memorial Endowed Scholarship  
Information Technology Annual Award  
Phyllis S. Jones Memorial Annual Award  
Carroll J. Locke Memorial Annual Scholarship  
Vincent Lockwood Memorial Annual Scholarship  
Robert and Janet Love Nursing Annual Scholarship  
Marilyn Lusk Award for Clinical Excellence in Nursing Annual Award  
Wallace "Pete" and Kathleen MacDonald Annual Scholarship  
Main Tire Exchange Annual Scholarship  
Suzanne Malachesky Memorial Endowed Scholarship  
Margaret A. Pfuntner Annual Scholarship  
Phi Theta Kappa Annual Award  
Praxair Designing the Future Annual Scholarship  
Prose Writing Annual Award  
Mary Rauhe Annual Scholarship  
Dorothy and Lester Reynolds Family Mathematics Achievement Annual Scholarship  
Joseph and Carmella Saccone Memorial Endowed Scholarship  
Senior Annual Award for Academic Distinction – English & Humanities  
Donald Simons Annual Scholarship  
Stephens Mills Grange Endowed Scholarship  
Top Hat Annual Scholarship  
Evelyn Turner Culinary Arts Annual Scholarship (in memory of Henry "Hank" Turner)

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Odelphia A. Vander Linde Memorial Annual Scholarship  
Western NY Veterinary Medical Association Annual Scholarship

The following scholarships are awarded by the Student Records and Financial Services Office based on financial need. There is no application process other than completing the FAFSA:

Alumni Association Advancement Endowed Scholarship  
Roland D. Hale Need-Based Endowed Scholarship  
Hornell Association Endowed Scholarship  
Dr. David H. Huntington Endowed Scholarship  
Koller Student Service Endowed Scholarship  
William H. MacKenzie Memorial Endowed Scholarship  
Lyle McCaffery Memorial Annual Scholarship  
Middleton Memorial Annual Scholarship  
Northern Lights Endowed Scholarship  
Charles A. Orlando Endowed Scholarship  
Paul B. Orvis Annual Scholarship  
Radia Khouri Rezak Family Endowed Scholarship  
Dr. Charles Spinelli Annual Scholarship  
Mike Taylor Memorial Endowed Scholarship  
George Whitney Memorial Endowed Scholarship  
Robert E. Wood Jr. Memorial Endowed Scholarship

<sup>1</sup>**No scholarship application necessary.**

<sup>2</sup>**No scholarship application necessary. Awarded by specific criteria. Students must have minimum high school average of 80 through end of junior year unless otherwise noted. Scholarships awarded in March.**

<sup>3</sup>**Scholarship application necessary.**

<sup>4</sup>**Send letter of interest and any other information as indicated to the Admissions Office. Decisions ongoing while funding exists unless otherwise indicated.**

<sup>5</sup>**Send letter of interest to specified individual and/or department.**

**Please note that students studying through the Internet are not eligible for scholarships.**

Scholarships are made possible by the generosity of the Alfred State Development Fund, Inc., the Educational Foundation of Alfred, Inc., the Alumni Council, private donors, and Alfred State faculty and staff.



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## Residential Life

### RESIDENTIAL LIFE

Residential Life believes that a student's residence hall experience should be as individually suited to his/her needs and interests as possible. On this basis, Alfred State offers a lifestyle approach to residence hall living. Within the limits of college policy, various lifestyle areas are offered, and students may choose the area which best suits them. The following styles are located in designated areas of certain residence halls:

**No Smoking** – All of our residential facilities are smoke-free.

**Baccalaureate Lifestyle** – Available in Peet Hall only. This lifestyle option provides an opportunity for students in the baccalaureate programs to reside together.

**Substance-free Lifestyle** – This lifestyle is designed for the student interested in living within a tobacco-free and alcohol-free area. All guests and visitors are also required to abide by the substance-free lifestyle while visiting the area. Each student signs a contract pledging to remain substance free while living in this area. If you are not totally committed to the restrictions, this lifestyle is not for you.

**Healthy Living Lifestyle** – The healthy living option is available for those students choosing to live in a positive environment that focuses on the six dimensions of wellness: physical, social, spiritual/emotional, occupational, intellectual, and culture.

**24 and Over Lifestyle** – This lifestyle option was created to address the special needs of nontraditional students, e.g. self-governed quiet hours and the ability to stay in the residence hall during breaks. Available in Main Gate B only.

**Quiet Study** – Guarantees a student a quiet area to study and reside. Mandatory 24-hour quiet. Stereos and radios are allowed but kept at a minimal noise level. Areas are available in certain residence halls.

**Over 21** – A student must be 21 or older at the beginning of the academic year. MacKenzie West, North, and Main Gate A offer this lifestyle option.

**Living and Learning Community** – First-year student community in Burdick Hall. As a first-year student, you have the opportunity to become a member of our Leadership Living and Learning Community (LLC) and take the knowledge you are acquiring in the classroom and connect it with experiences outside the classroom, making you more prepared to tackle your college experience than other students! For more information, visit <http://www.alfredstate.edu/LLC>.

**Architectural Living and Learning Community (ALLC)** – Baccalaureate architecture majors can explore their field of study in an exciting new way. Members of the ALLC can study, live, work, and engage with their faculty, all in their own residence hall and with other architecture students. Peet Hall is this ALLC's home and provides access to architecture work labs, study space, newly renovated meeting space, and kitchenettes, all steps away from your room.

**Nursing Living Learning Community (NLLC)** – Freshman nursing majors have the opportunity to be a part of a community dedicated to helping new nursing students transition into the nursing curriculum. Besides participating in a cohort seminar led by nursing faculty within their residence halls, this NLLC provides a quiet atmosphere and enhanced opportunities to learn from and connect with their faculty.

**Global Scholars Living Learning Community (GSLLC)** – Burdick Hall is home of the Global Scholars LLC, and this unique living environment will connect students with global perspectives. Students in this GSLLC will become a member of a culturally rich environment where both domestic and international students will live, take classes, and study, all within their own residence hall. For these students they will

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live the lessons learned in the classroom and be prepared to engage in our increasingly interdependent and multicultural world.

**Townhouse Style Living** – Apartment-style living for sophomores, juniors, and seniors.

Services available in the residence halls include laundry and vending machines, kitchenette, a recreational room, study areas, and computer labs.

### ON-CAMPUS HOUSING REQUIREMENTS/CAMPUS WAIVER PROCEDURES

#### SUNY – Board of Trustees' Policy

Every student in full-time attendance at a state-operated unit of the university, other than married students or students residing with a parent or parents, shall be required to live in a dormitory maintained and operated by such a unit or to have the permission under such provisions as may be made therefore by the chief administrative officer of such unit to live off campus.

#### Local Campus Policies

##### I. WAIVERS

Any full-time student who wishes to live off campus must request a waiver of the Board of Trustees' Policy. This waiver form is available from the Office of Residential Life and online. All waiver requests will be considered in accordance with the SUNY policy and the Board of Trustees' intent to maximize the educational process. Certain conditions, if met, assure an individual of permission to live off campus. These specific exceptions are as follows:

**General Eligibility:** Married students, students providing direct care for a legal dependent, students 23 years of age or older, students already possessing a baccalaureate degree (reviewed for verification), or a student residing with a parent, grandparent, or court-appointed legal guardian at that person's permanent home address who is commuting fewer than 60 miles one way (notarized statement and supplemental statement required).

**Honorably Discharged Veterans of the U.S. Armed Forces:** DD-214 must be provided as documentation.

**Academic Eligibility:** Fourth-year students in baccalaureate programs are eligible for off-campus status subject to the following minimum requirements: good academic standing with a minimum cumulative grade point average of 3.00, and no current disciplinary status through the time of off-campus occupancy.

**Greek Organization Eligibility:** Information relative to organization eligibility is available from Residential Life. Individual members of eligible Greek organizations may apply for a housing waiver if all criteria are met:

- Individual members must possess a 2.0 cumulative GPA and a 2.0 semester GPA (prior semester) at the time a housing waiver is requested.
- Individual members may not be on any disciplinary sanction and must have completed any special conditions as a result of a past sanction (e.g., alcohol assessment, Signals, community restitution projects, etc.) at the time a housing waiver is requested.
- The organization in which they are a member maintains continuing authorization for off-campus communal residency.

All other reasons will be reviewed according to the Reasons for Waiver stated on the form, and will be considered according to uniformity and intent of the Board of Trustees' policy. Submission of false or intentionally misleading statements may result in waiver revocation, campus disciplinary sanctions, and other penalties. All waivers are granted for the academic year or the remaining portion thereof. Each student must resubmit a waiver application each year he/she is in attendance.

##### II. DETERMINATION OF FULL-TIME STUDENT STATUS

1. A full-time student is an individual enrolled for 12 or more credit hours (including credit hours added after registration day).
2. Students initially registered in a part-time status who add sufficient courses to attain full-time status are subject to campus housing policies unless a waiver is approved.

## III. WAIVER PROCEDURE

1. Waiver processing will begin March 1 or as soon as predictable thereafter for fall semester consideration. Waiver processing will begin Nov. 1 or as soon as predictable thereafter for spring semester consideration.
2. The License for Residence is a full academic year agreement and takes precedence over any waiver application. Interim requests for release are processed according to current campus policy.
3. At the time a housing waiver application is submitted and approved, any predetermined housing assignment is released.
4. **Initial Request:** Any individual who is not living with parents and who wishes to live off campus must attend and participate in a required 'living off-campus' educational seminar prior to the submission of a housing waiver application.
5. If the reason for off-campus waiver is not one of the three general exceptions noted above, a detailed explanation of the reason(s) must be provided to the director of college housing at the time of submission.
6. **Review:** The director of college housing or his/her designee will review all requests and, with the intent of the Policy of the Board of Trustees and the stated purpose of the college policy, render a decision. This decision will be given within five (5) business days, when possible. Note: Missing documentation will delay processing.
7. Decisions based upon health or psychological grounds require consultation with and recommendation of campus personnel in the appropriate professional areas. Permission for disclosure authority is granted by the submission of the application.
8. **Appeal:** A denied waiver may be appealed to the Sr. Director of Residential Services. The appeal must be in writing and address the reason(s) given for the denial of the initial request. The appeal must be sent within five (5) business days of receipt of the initial decision.
9. **Appeal Decision:** All appeals will be reviewed in accordance with the intent of the Policy of the Board of Trustees and the stated purpose of the college policy. A written decision will be given within five (5) business days, when possible. There is no appeal of the Sr. Director's decision.

# Student Engagement and Orientation

Life at Alfred State is more than classes, papers, books, and tests. Some 80 percent of a student's time is spent outside of the classroom. Toward that end, Alfred State offers numerous cocurricular activities.

Each student at Alfred State pays a mandatory activities fee, administered by the Student Senate. The Office of Student Engagement assists nearly 100 campus clubs and organizations that exist specifically for student interaction and involvement.

Students in search of leadership opportunities will benefit from the Office of Student Engagement and the Student Senate-sponsored Leadership Development series, along with countless other leadership development activities.

### AUXILIARY CAMPUS ENTERPRISES AND SERVICES

Auxiliary Campus Enterprises and Services (ACES) is a not-for-profit corporation responsible for many services on campus. A board of directors consisting of faculty, students, and administrators governs activities of the corporation. ACES manages campus food service, special events and catering, snack bars, campus stores, food/beverage and laundry vending services, Lake Lodge, cable TV services, transportation services, and accounting and bookkeeping services.

#### Dining Services

Students living in residence halls are required to participate in a dining program. All dining programs are controlled by a access-computer access system using encoded Campus ID Cards. Individuals may elect a program based on their specific needs from a variety of meal plan options as described in promotional material appearing on college websites and the student billing. Participants are allowed considerable flexibility as they may eat in the dining hall and other food locations by using a meal swipe, dining dollars or campus spending account funds.

Visit [www.alfredstate.edu/aces](http://www.alfredstate.edu/aces) for up-to-date details on dining and other ACES services, along with hours of operation.

### CAREER DEVELOPMENT

Career Development offers a wide variety of services for students and alumni. These services include assistance with developing career plans and goals, resume development and critique, job/internships, interview preparation, mock interviewing, and a variety of classroom workshops. Career Development provides and maintains three major online branded services: JobLink (job postings for on-campus jobs, work study, internships and FT career jobs; on-campus recruitment; career fairs), OptimalResume (online resume, portfolio and website builder, interview prep) and CareerBeam (a 24/7 virtual career office). In addition to maintaining hundreds of job postings for full time, part-time and summer employment, Career Development also organizes and facilitates four major Career Fairs each year.

Students are encouraged to connect with Career Development early in their freshman year and continue to stay connected throughout their college career!

Many of the services offered through this office can also be accessed through its website at [www.alfredstate.edu/career-development](http://www.alfredstate.edu/career-development). All students and alumni are encouraged to take advantage of the services offered.

### STUDENT DISABILITY SERVICES

Academic and nonacademic assistance is provided to students with self-identified disabilities (permanent or temporary) who have provided appropriate documentation to the Office of Student Disabilities Services (Hunter Student Development Center, Alfred campus; Student Services Building, Wellsville campus).

Academic services may include faculty conferencing, tutoring referrals, assistive technology, note takers, and testing accommodations. Nonacademic services may include residence hall accommodations and

agency referrals. Attendant care and personal assistive devices are not provided. Accommodations are decided by the counselors from Student Disabilities Services after reviewing the appropriate documentation and talking with the individual student. Please remember that self-advocacy is essential to receiving assistance.

### **MULTICULTURAL AFFAIRS**

In an effort to prepare students to enter an ever-growing diverse society after college, Multicultural Affairs creates opportunities for students to increase their understanding and appreciation of racial, ethnic, gender, sexual orientation, and other differences. Because Alfred State is a community that promotes diversity and strives to create an atmosphere free of bias and prejudice, many organizations work toward this goal by providing educational, cultural, and social events.

### **HEALTH AND WELLNESS SERVICES**

Health and Wellness Centers are located on each campus. At the center, treatment of student illness, accidents, and counseling needs are provided by a doctor, mental health counselor, or registered nurse. The Mind Spa is also located at the Health and Wellness Center on the Alfred campus. A mandatory fee allows the student to obtain medicines and medical supplies provided by Health and Wellness Services without further cost. The Health and Wellness Services records are kept strictly confidential. Appointments can be made in person or by calling (607) 587-4200.

For more information, visit <http://www.alfredstate.edu/health-and-wellness-services>

#### **The Mind Spa**

This unique oasis is a quiet place for students to experience and explore on their own. Students are able to indulge in their senses, clear their minds, or simply relax and unwind while using the Mind Spa. The Mind Spa offers use of a full body massage chair, tea, aromatherapy, bio-feedback software, multi-spectrum light, and self-help audio library as well as many other relaxation and stress reduction aids. Please visit <http://www.alfredstate.edu/mind-spa> for more information.

### **CAMPUS SHUTTLE SERVICE**

The college provides a bus service which circles the main campus continuously throughout each class day from 8 a.m. - 5 p.m. including traveling to the Veterinary Technology Center. The college also provides a shuttle service back and forth each day to the Wellsville campus. These buses have various morning departure times from the Alfred campus and afternoon departures from the Wellsville campus. A daily shuttle schedule is posted online for quick and easy access.

### **STUDENT/VISITOR MOTOR VEHICLES**

All licensed motor vehicles, including automobiles, trucks, motorbikes, motorcycles, and other motor vehicles to be operated or parked on college property, must be registered at the University Police Department in the Theta Gamma house on the Alfred campus. If you are a Wellsville commuter student, you must register at Student Services on the Wellsville campus. Visitors must register their vehicles immediately to avoid enforcement violations. Information and assistance regarding vehicle registration can be found 24 hours a day, seven days a week at the University Police Department.

### **UNIVERSITY POLICE**

The University Police Office is located on Lower College Drive in the Theta Gamma House on the Alfred campus. University Police is open 24 hours a day, seven days a week. University Police maintains an office in the "H" building on the Wellsville campus. The Wellsville office is staffed during the academic year Monday - Friday, 8 a.m.- 4 p.m.

Alfred State's University Police Department is a fully sworn and accredited, community oriented and service-based police department that provides law enforcement and emergency services to all members of the Alfred State community. The University Police Department is responsible for enforcing all Federal, State, and local laws on both the Alfred and Wellsville campuses. The department prides itself on a level of professionalism, courtesy, and respect that meets the specialized needs of a college setting. With a 24-hour dispatch center, University Police serves as the primary point of contact for off hours services such as electrical, plumbing, or other facility based issues. In keeping with the educational mission of our

## STUDENT ENGAGEMENT AND ORIENTATION

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setting, the department also encourages its members to continue their development through additional education and training.

University Police can be contacted at (607) 587-3999 or simply 3999 from any campus phone. In an emergency dial 911 or use any of the emergency blue light phones located throughout campus.

### ALUMNI COUNCIL

Upon the dissolution of the Alumni Association in 2010, the Alumni Council was created in its stead. The mission of the Alumni Council exists to enhance the engagement of the college's alumni for their enjoyment through programs and services which build relationships, and to support the institution's efforts in student recruitment, career placement, and friend/fundraising.

The major objectives of the Alumni Council are following:

1. To promote and increase fellowship of students and alumni of Alfred State.
2. Serve as a liaison between Alfred State, its alumni, and students in order to foster and maintain close and mutually beneficial ties.
3. Maintain and promote loyalty of the alumni of Alfred State.
4. Assist and promote the interest of Alfred State, its students and alumni.
5. Develop programs that support the goals and objectives of the campus, including campus fundraising, in conjunction with the Office of Institutional Advancement.

The Alumni Council provides a variety of programs and services to both alumni and students. Some of these include:

- Bi-annual alumni newsletter - *Transitions*
- Alumni records update service
- Annual Alumni reunion – Homecoming
- Assistance with program-specific events
- Regional alumni events
- Scholarship program
- Career Development assistance - posting job openings, seeking position, etc.

The Office of Alumni Relations is located on the Alfred campus in the Huntington Building. For additional information related to the above programs, please stop in, call (607) 587-3931, or forward an email message to [alumni@alfredstate.edu](mailto:alumni@alfredstate.edu).

### LIBRARIES

The libraries on the Alfred and Wellsville campuses are strongly committed to serving the information and research needs of students and faculty. The collections on both campuses encompass materials in a variety of formats - electronic, print, and visual media. To access the libraries' holdings, visit the library website at [www.alfredstate.edu/library](http://www.alfredstate.edu/library). Materials not available locally may be requested through the interlibrary loan service.

The Walter C. Hinkle Memorial Library on the Alfred campus houses a collection of approximately 55,000 book volumes and 4,000 video titles, and has print subscriptions to 12 newspapers and some 140 journals and magazines. The Wellsville campus library holds about 3,000 volumes, 30 current journal titles, and four daily newspapers. The library contains an extensive collection of automotive manuals in print and microfiche, as well as materials in a variety of audio-visual formats.

Students and faculty on both campuses have access to more than 64,000 electronic journals and magazines available from 48 online databases. A good number of these are provided through

SUNYConnect, an initiative to share library collections and services across most of the 64 SUNY campuses.

Also located in Hinkle Library is the Jean B. Lang Western New York Historical Collection, a unique repository of historical and genealogical materials that focuses on Alfred, Allegany County, and western New York State.

Both the Alfred and Wellsville campus libraries provide public access computers and printers. Laptop users in Alfred may take advantage of the wireless connectivity in the library, using their own laptops or those available for loan. Both the Alfred and Wellsville campus libraries are accessible to those with disabilities, and are open to the general public at no charge.

The effective use of information is a challenge facing everyone in this electronic age. To help meet this challenge, Alfred State's library faculty offer a range of programs, from individualized reference service to classroom instruction on research techniques and sources.

# Academic Information

Alfred State offers more than 70 majors in programs based in the arts and sciences, applied technology, and management and engineering technology.

Administratively, the college is broken down into three schools:

School of Arts & Sciences

School of Architecture, Management & Engineering Technology

School of Applied Technology

Faculty and staff focus on programs within their areas of expertise. Depending on major, each student will find most courses taught within a particular area of study. However, most students will also be required to take some courses within other disciplines.

## INTERNSHIPS AND CAREER DEVELOPMENT

The time to begin thinking about your career is in your freshman year! Career development assistance begins with the identification of career goals and the development of a plan to meet those goals. Plans frequently include résumé assistance, identification of available experiential education opportunities, individual employment/career counseling, interview preparation, and workshops.

Students have the opportunity to meet with employers at fall and spring career fairs, information sessions, and on-campus interviews.

Job opportunities are posted daily for current students and alumni on the Career Development Web page.

## ACADEMIC MINORS

An academic minor at Alfred State is an optional program of study available to matriculated baccalaureate students. A minor may be used to complement the major course of study, broaden and enhance career opportunities, gain expertise in an area of interdisciplinary studies, or provide an in-depth study in a subject of special interest.

A minor is described as a thematically related set of academic courses, consisting of no fewer than 18 credit hours. A minor will be officially recorded on the transcript when a student has satisfied all requirements for the major baccalaureate program and the minor, and has attained a 2.0 grade point average in the courses approved for the minor.

The following academic minors are available to students studying in a baccalaureate program: **applications software development, business administration, computer technology, construction management, digital media and animation, interior design, information security, information technology, international studies, network administration, surveying engineering technology, and web development.**

Students wishing to pursue minors should first discuss options with their advisers and meet with the department chair where the minor resides to determine specific course requirements. Students must apply for minors on degree application forms.

## EMPLOYMENT AND TRANSFER

The Career Development Office surveyed the 937 members of the May 2012 graduating class. A 75 percent college-wide response was realized from the survey. Alfred State Technology Services generated the statistical information utilized in the preparation of this report in May 2013.

### Highlights:

- 64 percent of the graduates were employed after graduation.
- 91 percent of the employed graduates were employed in jobs related to their field of study at Alfred State.



- 35 percent of the graduates transferred to another college after graduation.
- A combined employment and transfer rate of 99 percent.

## ARTICULATION AGREEMENTS

### Articulation Agreements:

The following is a listing of agreements which exist between Alfred State and other institutions. For the most up-to-date list of articulation agreements, please visit our website at [www.alfredstate.edu/articulation-agreements](http://www.alfredstate.edu/articulation-agreements).

Note: Alfred State graduates from any two-year associate degree program (AAS, AA, AS, and AOS) may enter directly into the corresponding baccalaureate degree program or the technology management BBA degree program.

### AGREEMENTS INTO ALFRED STATE:

#### **Bermuda College**

AOS-Building Trades

#### **BOCES: Broome-Tioga**

AAS-Veterinary Technology

#### **BOCES: Cattaraugus-Allegany**

AAS-Agriculture Technology

AAS-Veterinary Technology

#### **BOCES: Finger Lakes Tech**

AAS-Agriculture Technology

AAS-Veterinary Technology

#### **BOCES: Genesee Valley**

AAS-Health Information Technology

#### **BOCES: Greater Southern Tier**

AAS, AS, BT-Computer & Information Technology

#### **BOCES: Madison-Oneida**

AAS-Agriculture Technology

AAS-Veterinary Technology

#### **BOCES: Nassau**

AAS-Agriculture Technology

AAS-Veterinary Technology

#### **BOCES: Tompkins-Seneca-Tioga**

AAS-Agriculture Technology

AAS-Veterinary Technology

#### **BOCES: Wayne-Finger Lakes**

AAS-Veterinary Technology

#### **BOCES: Western Suffolk**

AAS-Agriculture Technology

AAS-Veterinary Technology

#### **Corning Community College**

BS-Human Services Management

BS-Electrical Engineering Technology

## ACADEMIC INFORMATION

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### **Erie Community College**

BS-Mechanical Engineering Technology  
BS-Nursing  
BBA-Technology Management

### **Finger Lakes Community College**

BS-Nursing

### **Genesee Community College**

BS-Nursing

### **High School: GW Carver**

AAS-Veterinary Technology

### **High School: Pioneer High School**

AAS-Veterinary Technology

### **High School: Unadilla Valley**

AAS-Agriculture Technology  
AAS-Veterinary Technology

### **Human International University of Japan**

### **Jamestown Community College**

AAS-Court and Real-time Reporting  
AAS-Health Information Technology  
AAS-Veterinary Technology  
BS-Forensic Science Technology  
BS-Human Services Management  
BS-Nursing  
BBA-Technology Management

### **Jefferson Community College**

BS-Forensic Science Technology

### **Mohawk Valley Community College**

BS-Digital Media and Animation  
BS-Human Services Management  
BS-Nursing  
BBA-Technology Management

### **Monroe Community College**

AAS-Veterinary Technology  
BS-Nursing  
BS & BT-Electrical Engineering Technology and Information Technology  
BBA-Technology Management

### **Onondaga Community College**

BS-Architecture Technology

### **Orange County Community College**

BS-Architecture Technology

### **St. James School of Radiology (St. James Mercy Health School of Radiological Science)**

AS-Individual Studies

**SUNY Delhi**

BS-Architecture Technology

**Suffolk County Community College**

BS-Digital Media and Animation

**Tompkins-Cortland Community College**

BS-Digital Media and Animation

**Utica School of Commerce**

BBA-Technology Management

**Westchester Community College**

BT-Information Security and Assurance

**AGREEMENTS OUT OF ALFRED STATE:**

**Alfred University**

BBA-Business Administration

**Clarkson University**

BBA-Business Administration

**Cornell University**

AAS-Agriculture and Veterinary Technology

**Hilbert College**

AAS-Accounting

AAS-Business Management

AAS-Marketing

AAS-Financial Services

AS-Business Administration

**IBEW Local 86**

AOS-Electrical Construction & Maintenance Electrician

**Niagara University**

BBA-Business Administration

**Penn College of Technology**

AAS-Health Information Technology

**Rochester Institute of Technology**

AAS-Accounting

AAS-Marketing

AAS-Financial Services

AS-Business Administration

AS-Computer Science

**St. Bonaventure University**

BBA-Financial Planning

BBA-Technology Management

BBA-Business Administration

**The College at Brockport (SUNY Brockport)**

AAS-Nursing

## ACADEMIC INFORMATION

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### **SUNY College of Environmental Science & Forestry**

AA-Liberal Arts & Sciences: Math and Science

### **SUNY Potsdam**

AS-Computer Science

### **Rochester Institute of Technology**

AS-Computer Information Systems

### **Villa Maria College**

AAS-Interior Design

## **ARTICULATION AGREEMENTS WITH SUNY INSTITUTIONS:**

### **CROSS-REGISTRATION**

Under the SUNY policy on cross-registration and agreements with Rochester Area Colleges and Western New York Consortium, matriculated and full-time (12 credit or more) Alfred State students may take up to 6 credits a semester at a member institution without additional tuition charges. Students interested in cross-registration must seek the approval of their academic advisor before entering the program.

Registration begins on the opening day of the term at the host institution and is on a space-available basis. Cross-Registration forms are available in the Student Records and Financial Services Office.

### **ROTC**

The U.S. Army ROTC program at Alfred State is an affiliate of the Seneca Battalion program headquartered at nearby St. Bonaventure University.

### **Dean's List**

To be named to the semester Dean's List, a student must have taken a minimum of 12 credit hours of course work that count toward graduation requirements and have earned at least 3.5 semester index.

### **Phi Theta Kappa**

To qualify for membership in this international honor society, candidates must have earned at least 24 semester hours of credit at Alfred State maintaining a GPA of 3.5 or above, or a student must have earned at least 12 semester hours of credit at Alfred State maintaining a GPA of 3.75 or above.

The goal of Phi Theta Kappa is to recognize and encourage scholarship among associate degree students by providing opportunities for leadership, fellowship, and service.

Founded in 1918, Phi Theta Kappa currently numbers some 1,000 chapters worldwide. Alfred State's chapter was chartered in spring 1991.

### **Sigma Tau Epsilon**

To qualify for membership in this scholastic honor society, a chapter of the National Vocational Technical Honor Society, a person must be a full-time student with a 3.5 cumulative index and be enrolled in an applied technology program. Students are elected by members of the society.

### **Tau Alpha Pi**

The Tau Alpha Pi National Honor Society was founded in 1953 and is now chartered at 133 colleges and universities. Its purpose is to recognize desirable personal and intellectual qualities of engineering technology students. Student nominees must have 30 credit hours with at least a 3.5 quality point average index in an Engineering Technology Accreditation Commission of the Accreditation Board for Engineering and Technology (ETAC/ABET) accredited program.

### **Psi Beta**

Since 1987 Alfred State has been a charter member of Psi Beta, the National Honor Society in Psychology for Community and Junior Colleges. Annually, the Alfred State Department of Social and Behavioral Sciences has inducted members into this society, which includes over 130 chapters and 12,000 members nationwide.

To be eligible, candidates must possess both an interest in and have completed nine credit hours in psychology (taken at Alfred State). They must also possess a 3.0 GPA in these courses and a 3.0 GPA overall. In addition, they must also have the recommendation of a Social and Behavioral Sciences faculty member. If the inductee is transferring to a four-year college that has a sister chapter of Psi Chi, the member is usually enrolled in that society with only a letter of introduction from the Psi Beta adviser.

## **ACADEMIC ASSISTANCE**

### **Tutoring Services**

Alfred State offers free peer tutoring services for most courses. Peer tutors are students who have earned a grade of A or B in a course and have received special training.

### **Professional Writing Tutor**

Professional tutoring is available in writing and grammar for any course offered at Alfred State.

### **Math Lab**

Many members of the Math and Physics department volunteer in the Math Lab. Student proctors are also available in the Math Lab for drop-in help.

### **Professional ESL Tutor**

A professional ESL tutor is available on a part-time basis.

## **COURSE CANCELLATION POLICY**

Alfred State reserves the right to cancel any course without prior notice due to insufficient enrollment or unforeseen circumstances.

## **STUDENTS UNABLE TO ATTEND CLASSES**

1. No person shall be expelled from or be refused admission as a student for the reason that he or she is unable, because of religious beliefs, to attend classes or to participate in any examination, study or work requirements on a particular day or days.
2. Any student who is unable, because of religious beliefs, to attend classes on a particular day or days shall, because of such absence on the particular day or days, be excused from any examination or any study or work requirements.
3. It shall be the responsibility of the faculty and of the administrative officials to make available to each student who is absent from school, because of religious beliefs, an equivalent opportunity to make up any examination, study or work requirements which may have been missed because of such absence on any particular day or days. No fees of any kind shall be charged for making available to the said student such equivalent opportunity.
4. If classes, examinations, study, or work requirements are held on Friday after 4 p.m. or on Saturday, similar or makeup classes, examinations, study or work requirements shall be made available on other days, where it is possible and practicable to do so. No special fees shall be charged to the student for these classes, examinations, study, or work requirements held on other days.
5. In enforcing the provisions of this section, it shall be the duty of the faculty and administration to exercise the fullest measure of good faith. No adverse or prejudicial effects shall result to any students who avail themselves of the provisions of this section.
6. Any student who is aggrieved by the alleged failure of any faculty or administrative officials to comply in good faith with the provisions of this section shall be entitled to maintain an action or proceeding in the county Supreme Court.

## **LEAVE OF ABSENCE POLICIES**

Students who need to interrupt their studies during a semester already in progress or for a future semester can protect their matriculated status by applying for a leave of absence for up to one year. Leaving without officially withdrawing from college will result in the student's receiving a grade of F for all his/her course work and will show on the official Status Report of the college as an academic dismissal. Complete information on applying for a leave of absence can be found at [my.alfredstate.edu](http://my.alfredstate.edu), then go to "Services" on the Records Office Web pages.

## ACADEMIC INFORMATION

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### WITHDRAWALS

Students who need to withdraw from the college before the end of an academic term must officially withdraw from classes. Leaving without officially withdrawing from college will result in the student's receiving a grade of F for all his/her course work and will show on the official Status Report of the college as an academic dismissal. Complete information on applying for a withdrawal can be found at [my.alfredstate.edu](http://my.alfredstate.edu), then go to "Services" on the Records Office Web pages.

### CURRICULUM CHANGES

Continuing students will use a Degree Program Change Form to switch from one program to another or to include or exclude previously earned credits into a new program. Once the decision has been made to change programs, students must notify both their present department chair and the department chair of the new program. Both department chairs will sign the request and the new department chair will specify which classes to exclude from the new program. Only courses not required in the new program may be excluded. General education courses cannot be excluded. The form must be received and processed by the Student Records and Financial Services Office. Students may not process a curriculum change after the fourth week of classes for the current semester. New students who wish to change their program after applying for admission but prior to enrollment must do so in writing to the Admissions Office.

### COURSE AUDITING

Course auditors must secure permission to take a class from the instructor of the class. Approval forms are available from the Student Records and Financial Services Office or can be printed from our website under "Forms" at [my.alfredstate.edu/enrollment-management/records-office-forms](http://my.alfredstate.edu/enrollment-management/records-office-forms). Return the approved form to the Student Records and Financial Services Office before the last day to register.

Course auditors will be permitted to audit courses on a space-available basis. Enrolled students receiving credit will be given priority. Auditors will not be enrolled or listed in the registrar's rosters, will attend without credit or grade, will attend without formal recognitions, and will not be required to meet the course requirements. Audited courses are not eligible for financial aid. Auditors are responsible for all associated costs of the course. A student may retake such a course for credit in a subsequent semester.

Course auditors who are currently enrolled at the college will not be charged tuition. A nonrefundable \$50 registration fee will be charged to auditors who are not enrolled at the college. Special auditors, individuals over the age of 60, are invited to audit classes with no registration fees. Texts and/or class materials are at the expense of the auditor. Contact the Student Records and Financial Services Office for more information.

### ADD/DROP

Students wishing to add or drop a course after the start of classes must submit the appropriate Course Change Notice form with the required signatures to the Student Records and Financial Services Office. Courses will not be dropped by simply not attending classes. Additional information may be found on the Course Change Notice form available from the student's adviser or department chair. If classes are not added or dropped appropriately, a grade of F will be received for the course. Dropping below full-time enrollment may affect current or future financial aid eligibility. Contact the Student Records and Financial Services Office for details.

### BANNER WEB

Alfred State student software is Banner Web for students. Students will use this to view and update information as well as perform a number of functions. You can obtain instructions by going to <http://web.alfredstate.edu/banweb/>. Functions and information available on Banner Web include:

- Register for classes and add or drop courses
- View/print student schedules
- Apply to graduate
- Check to see if you have registration holds
- View interim and final grades and academic standing
- View your unofficial academic transcript
- Learn the status of your financial aid award package

- Check your personal information and learn how to change it
- View bill processing information.

**DEVELOPMENTAL/REMEDIAL COURSES**

SUNY policy states, "Courses designated developmental/remedial shall not be awarded academic credit (noncredit) and thus cannot be applied as credit toward a college degree."

Developmental/remedial courses and grades in such courses are designated with an asterisk (\*).

**STUDENT DEMOGRAPHIC INFORMATION**

Students must update their personal/demographic information electronically via Banner Web for Students. This can be done by logging in to the Secure Area of Banner Web for Students and selecting the "Personal Information" menu. If the data reflected in the Personal Information on Banner Web is accurate, updates need not be submitted. Only inaccurate information should be updated. Information that students should check includes mailing address, telephone number, emergency contact information, and marital status. Changes can also be made in writing via the form available at <https://my.alfredstate.edu/enrollment-management/records-office-forms> then "Student Data Change Form." Students who wish to change their name or correct their social security number must present legal documentation to the Student Records and Financial Services Office.

**GRADUATION REQUIREMENTS**

Individual programs are listed in the college catalog, and these listings include both the general and technical components necessary for completion of degree requirements. Each degree, except the AOS, has certain minimum requirements that must be met in the liberal arts and sciences, typically social science, natural science, mathematics, humanities, and physical education. Further, with the exception of AOS degree programs, all programs have specific SUNY General Education requirements. These are included in the Academic Regulations contained on the Alfred State website. For more information regarding the specific graduation requirements for your program, contact your adviser or department chair. Further information regarding SUNY General Education requirements as well as the list of courses approved for General Education and the list of courses approved for Liberal Arts and Sciences can be found at [www.alfredstate.edu](http://www.alfredstate.edu) under "Current Students" followed by "Records Office."

In addition, all students who plan to graduate must apply for graduation online through Banner Web, which can be found through a Quick Link on [www.alfredstate.edu](http://www.alfredstate.edu), or must submit a Degree Application Form to the Student Records and Financial Services Office. Online access and forms are available to all students during restricted times throughout the semester in which they expect to graduate.

Students are expected to meet regularly with their academic advisers who will assist with academic problems and monitor progress toward satisfaction of graduation requirements for the degree. Degree evaluations can be viewed within the secure area of Banner Web for students.

It is important for students to know the current graduation requirements for their program. Per Academic Regulation 102, "Each individual student has ultimate responsibility for understanding and adhering to each of these regulations and for meeting the requirements for graduation as stated herein." Please see Academic Regulation 200 Graduation Requirements for complete information. Further, students who readmit must comply with degree requirements at the time of readmission. Students should direct specific questions to their advisers/department chairs.

The graduation eligibility of expected graduates is checked and finalized by academic departments. Final graduation lists are submitted to the registrar by academic departments per the published End of the Semester Timetable.

**TRANSFER CREDIT****REGULATIONS:**

- Transfer credit procedure shall be initiated in the Student Records and Financial Services Office.\*
- Evaluation of transfer credit from another institution shall be made by the course discipline department chair or designated appointee.

## ACADEMIC INFORMATION

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- Credit will be given for courses passed with a grade of C or better. In the evaluating of transfer credit, a grade of S or P will be considered equivalent to a grade of C.
- Credit will be given for courses passed with a grade of C- or better if the overall index of the courses being transferred remains at 2.0 or higher.
- Credit hours granted will be equivalent to the corresponding course hours in this college. Partial credit may be granted with the approval of the department chair in whose department the course is offered.
- Transfer credits from other institutions will not be included in the calculations of indexes.
- Evaluation of transfer credit from one major to another within the college shall be made by the department chair or designated appointee(s) in the department to which the student transfers. Grades, including Fs, for courses that have been taken and that are required in the new program, shall be transferred as earned.
- Transfer from one program to another requires consultation with the department chair or designee of the department in which the student is registered and approval of the department chair or designee of the department to which the student wishes to transfer.
- A student may satisfy degree requirements by taking courses at another college and transferring no more than 12 credit hours within a seven-year period after leaving this college. This transfer program shall have prior written approval by his/her department chair. Courses transferred in this manner may replace comparable courses already taken at this college, thereby removing such courses from the calculation of index.

**\* The above rules and regulations are listed under ACADEMIC REGULATIONS-305 on the Alfred State website at [www.alfredstate.edu/academic-regulations](http://www.alfredstate.edu/academic-regulations).**

- To receive an associate degree, at least 30 lower-division credit hours (not including challenge credit) must be completed at this college.\*\*
- To receive a bachelor's degree, at least 30 upper-division credit hours (not including challenge credit) must be completed at this college.\*\*\*

**\*\* The above regulation is listed under ACADEMIC REGULATIONS-201.7 on the Alfred State website at [www.alfredstate.edu/academic-regulations](http://www.alfredstate.edu/academic-regulations).**

**\*\*\*The above regulation is listed under ACADEMIC REGULATIONS-202.4 on the Alfred State website at [www.alfredstate.edu/academic-regulations](http://www.alfredstate.edu/academic-regulations).**

### Transfer Credit Manual

- Courses will be transferred in per the college's Transfer Credit Manual. All courses in the manual have been evaluated by the course discipline department chair.
- Once a student's official transcript is received, a transfer credit evaluation is completed and students are notified through their Alfred State email account as courses are transferred in. Students can also review transfer credits on their unofficial transcript in Banner Web for Students.
- The transfer evaluation of a course within a specific discipline may be changed on an individual student basis if the discipline department chair is willing to do so.
- If the discipline department chair is not willing to change the transfer evaluation of a course on an individual student basis, that student may appeal per the transfer credit appeals process found on the website.

### ACADEMIC TRANSCRIPTS

Students planning to attend another college after leaving Alfred State must submit a signed transcript request to the Student Records and Financial Services Office. The transcript request form can be found at [my.alfredstate.edu/enrollment-management/records-office-forms](http://my.alfredstate.edu/enrollment-management/records-office-forms). Transcripts cannot be sent without the student's written permission each time one is requested. Transcripts can be faxed upon request but are usually considered unofficial and a second one may have to be sent. Transcripts cannot be sent for students who have financial holds. See section on holds for further information.

Alfred State cannot release copies of a student's transcript from other institutions. These must be requested from the schools previously attended.



**VETERANS INFORMATION**

If you are a veteran and are eligible for the GI Bill, you should apply for your benefits online through the VA website. If you do not have Web access, you should contact the Student Records and Financial Services Office for a paper form. You will need to supply a copy of your DD214 or certificate of eligibility to the Student Records and Financial Services Office. Staff will then supply the Veterans' Administration with the enrollment certification that indicates you are a student so you can receive your monthly benefits.

The following procedures to monitor attendance have been approved by the State Education Department Bureau of Veterans' Education:

- Veterans are required to attend classes in order to receive educational benefits.
- Veterans receiving benefits must complete the VA School Certification form each semester they wish to be certified for benefits. Further, veterans must contact the certifying official in the Student Records and Financial Services Office to ensure paperwork is properly completed whenever they add or drop a course, change their major, withdraw from the college, and/or are enrolled in courses that have nonpunitive grades (S or U).

**RECORDS OFFICE WEBSITE**

Web pages for the Student Records and Financial Services Office are available on the Intranet at [my.alfredstate.edu/enrollment-management/records-office](http://my.alfredstate.edu/enrollment-management/records-office).

Listed below is some of the information provided on these Web pages:

- Academic Calendar
- Schedule of Classes
- Courses approved for completing general education degree requirements
- Courses approved for completing liberal arts & science degree requirements
- Final Exam Schedule matrix

**ACADEMIC REGULATIONS**

**DISCLAIMER:** Printed versions of these regulations are for general reference purposes. The only official copy of the Academic Regulations is to be found on the Alfred State website at [www.alfredstate.edu/academic-regulations](http://www.alfredstate.edu/academic-regulations).

**100 Jurisdiction, Changes, and Distribution of Academic Regulations**

**101 Jurisdiction**

The regulations contained herein have been adopted by the Faculty Senate and approved by the college president and will apply to all College students, faculty, and administration, except where variation of these regulations has been adopted herein for the Applied Technology campus.

**102 Responsibility**

Each individual student has ultimate responsibility for understanding and adhering to each of these regulations and for meeting the requirements for graduation as stated herein.

**103 Changes**

Changes in these regulations must originate as recommendations by the Committee for Academic Affairs. Before becoming an official part of the "Academic Regulations" proposed changes must be adopted by the Faculty Senate and approved by the president of the college. Approved changes will go into effect immediately unless otherwise stated.

**104 Official Copy and Distribution**

The vice president for academic affairs will maintain the official copy of the "Academic Regulations." Upon approval by the college president, official changes will be transmitted to the vice president for academic affairs by the college president. At the beginning of each academic year the vice president for academic affairs will distribute a copy of the official "Academic Regulations" in electronic form. Any changes effective during the academic year will be published by the vice president for academic affairs upon notice from the college president.

**105 Interpretation**

In any case where a question arises regarding the interpretation of these regulations, the vice president for academic affairs or his appointed representative will have the final authority in resolving such matters.

**106 Waiver**

Requests for a waiver of any particular provision of these regulations will be made in writing to the Committee for Academic Affairs. Requests that are received by the chair of the committee following the last scheduled committee meeting of the semester will be considered during the following semester. The Committee for Academic Affairs has the authority to grant such a waiver only if it deems that unusual or extenuating circumstances warrant such action. The vice president of academic affairs (or appointee), in consultation with the appropriate department chair, will make decisions on waivers that need immediate attention when school is not in session. NOTE: high school students enrolled in credit-bearing courses should submit written appeals directly to the vice president for academic affairs for decision.

**200 Graduation Requirements**

**200 Requirements for Certificate**

## ACADEMIC INFORMATION

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- 200.1** To be eligible to receive a certificate in an approved program, a student shall satisfactorily complete the requirements for the certificate program with a cumulative index of 2.00 and shall have an academic status of good standing.
- 200.2** A student shall satisfy the requirements of the program in which he/she is matriculated and be recommended by his/her department faculty to the department chair, vice president for academic affairs, and the college president for action by the College Council.
- 200.2a** To graduate, a student shall satisfy the requirements of the program in which he/she is matriculated and must apply, or the student can be recommended by his/her academic department.
- 200.2b** Students matriculated in an associate program that also satisfy requirements of the corresponding certificate program must apply, or the student can be recommended by his/her academic department.
- 200.3** To receive an approved certificate, at least 50 percent of the credit hours (not including challenge credit) must be completed at this college.
- 200.4** To be eligible to receive an approved certificate, a student must complete and submit to the registrar a Degree Application Form by the date established by the registrar, or the student can be recommended by his/her academic department.
- 200.5** A certificate will only be granted within a seven (7)-year period after the student has left the College.
- 201 Requirements for AAS, AS, AA, and AOS Degrees**
- 201.1** To be eligible to receive the degree of associate in applied science, a student shall satisfactorily complete a minimum of 61 credit hours of which a minimum of one credit hour must have an HPED prefix with a cumulative index of 2.0, shall have passed COMP 1503, and shall have an academic status of good standing. For students entering prior to the fall semester 2002, at least 20 credit hours shall be in the fields of liberal arts and sciences, and shall include social science (6 hours), natural sciences and/or mathematics (6 hours), humanities (6 hours - including COMP 1503), and electives in the aforesaid fields (2 hours). For students entering in the fall semester of 2002 and thereafter, at least 20 credit hours shall be in the fields of liberal arts and sciences, the student shall have achieved competency in at least five of the following 10 knowledge areas (as prescribed by the student's academic department): mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilizations, arts, foreign language, and basic communication (which must include COMP 1503 or transfer equivalent). For students entering in the fall semester 2003 and thereafter, students who enroll in program 530 (nursing) at least 20 credit hours shall be in the fields of liberal arts and sciences, the student shall have achieved competency in at least 3.5 of the following 10 knowledge areas (as prescribed by the student's academic department): mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilizations, arts, foreign language, and basic communication (which must include COMP 1503 or transfer equivalent). In addition, all students receiving an AAS degree shall achieve competency in the following two skill areas: critical thinking and information literacy. The method by which this competency shall be achieved will be prescribed by the student's department.
- 201.2** To be eligible to receive the degree of associate in science, a student shall satisfactorily complete a minimum of 61 credit hours of which a minimum of one credit hour must have an HPED prefix with a cumulative index of 2.0, shall have passed COMP 1503, and shall have an academic status of good standing. For students entering prior to the fall semester of 2000, at least 30 credit hours shall be in the fields of liberal arts and sciences and shall include COMP 1503, humanities, natural sciences and mathematics, and the social sciences. The exact balance within the 30 credit hours will be prescribed by the department. There should be reasonable distribution of work in these three categories as well as appropriate depth in one. For students entering in the fall semester of 2000 and thereafter, at least 30 credit hours shall be in the fields of liberal arts and sciences and shall have achieved competency in at least seven of the following 10 knowledge areas (as prescribed by the student's academic department): mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilizations, arts, foreign language, and basic communication (which must include COMP 1503 or transfer equivalent). In addition, students shall achieve competency in the following two skill areas: critical thinking and information literacy. The method by which this competency shall be achieved will be prescribed by the department.
- 201.3** To be eligible to receive the degree of associate in arts, a student shall satisfactorily complete a minimum of 61 credit hours of which a minimum of one credit hour must have an HPED prefix with a cumulative index of 2.0, shall have passed COMP 1503, and shall have an academic status of good standing. For students entering prior to the fall semester of 2000, at least 48 credit hours shall be in the fields of liberal arts and sciences and shall include COMP 1503, humanities, natural sciences and mathematics, and the social sciences. The exact balance within the 48 credit hours will be prescribed by the department. There should be reasonable distribution of work in these three categories as well as appropriate depth in one. For students entering in the fall semester of 2000 and thereafter, at least 48 credit hours shall be in the fields of liberal arts and sciences and shall have achieved competency in at least seven of the following 10 knowledge areas (as prescribed by the student's academic department): mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilizations, arts, foreign language, and basic communication (which must include COMP 1503 or transfer equivalent). In addition, students shall achieve competency in the following two skill areas: critical thinking and information literacy. The method by which this competency shall be achieved will be prescribed by the department.
- 201.4** To be eligible to receive the degree of associate in occupational studies, a student shall satisfactorily complete a minimum of 60 credit hours with a cumulative index of 2.0 and shall have an academic status of good standing.
- 201.5** A waiver of the one HPED credit hour requirement may be granted by the chair of the Health and Physical Education Department. In such cases, the student must complete a minimum of 60 credit hours for graduation.
- 201.6** A student shall satisfy the requirements of the program in which he/she is matriculated and be recommended by his/her department faculty to the department chair, vice president for academic affairs, and the college president for action by the College Council.

- 201.6a** To graduate, a student shall satisfy the requirements of the program in which he/she is matriculated and must apply, or the student can be recommended by his/her academic department.
- 201.6b** Students matriculated in a bachelor program that also satisfy the requirements of the corresponding associate program must apply, or the student can be recommended by his/her academic department.
- 201.7** To receive a degree, at least 30 lower-division credit hours (not including challenge credit) must be completed at this college.
- 201.8** To be eligible to receive a degree, a student must complete and submit to the registrar a Degree Application Form by the date established by the registrar, or the student can be recommended by his/her academic department.
- 201.9** A degree will only be granted within a seven (7)-year period after the student has left the college.
- 202 Requirements for BS, BTech and BBA Degrees**
- 202.1** To be eligible to receive the degree of bachelor of science, a student shall satisfactorily complete a minimum of 121 credit hours of which a minimum of one credit hour must have an HPED prefix. The student shall have a cumulative index of at least 2.0, shall have passed COMP 1503, and have an academic status of good standing. Of the 121 credit hours, 60 college-level credit hours must be in the liberal arts and sciences with at least 30 credit hours from general-education-approved courses. Effective for students matriculating spring 2011 and after, the general education core must contain basic communication (written and oral) and mathematics plus additional courses from at least five of the following eight other general education knowledge areas: natural sciences, social sciences, humanities, western civilization, American history, other world civilizations, the arts, and/or foreign language. Students matriculating between fall 2000 and spring 2011 shall have achieved competency in the following 10 knowledge areas (except such areas as may be waived by the SUNY provost): mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilizations, arts, foreign language, and basic communication (which must include COMP 1503 or transfer equivalent). In addition, for all students the general education core must also include proficiency (at the program level) of the following two general education competencies: critical thinking and information management. Additional credit hour requirements may be necessary to meet specific accreditation standards.
- 202.2** To be eligible to receive the degree of bachelor of technology or bachelor of business administration, a student shall satisfactorily complete a minimum of 121 credit hours of which a minimum of one credit hour must have an HPED prefix. The student shall have a cumulative index of at least 2.0, shall have passed COMP 1503, and have an academic status of good standing. Of the 121 credit hours, 30 college-level credit hours must be in the liberal arts and sciences with at least 30 credit hours from general education approved courses. Effective for students matriculating spring 2011 and after, the general education core must contain basic communication (written and oral) and mathematics plus additional courses from at least five of the following eight other general education knowledge areas: natural sciences, social sciences, humanities, western civilization, American history, other world civilizations, the arts, and/or foreign language. Students matriculating between fall 2000 and spring 2011 shall have achieved competency in the following 10 knowledge areas (except such areas as may be waived by the SUNY provost): mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilizations, arts, foreign language, and basic communication (which must include COMP 1503 or transfer equivalent). In addition, for all students the general education core must also include proficiency (at the program level) of the following two general education competencies: critical thinking and information management. Additional credit hour requirements may be necessary to meet specific accreditation standards.
- 202.3** To graduate, a student shall satisfy the requirements of the program in which he/she is matriculated and must apply, or the student can be recommended by his/her academic department.
- 202.4** To receive a degree, 45 upper-division credit hours (not including challenge credit) are required, of which 30 (not including challenge credit) must be completed at this college.
- 202.5** To be eligible to receive a degree, a student must complete and submit to the registrar a Degree Application Form by the date established by the registrar, or the student can be recommended by his/her academic department.
- 202.6** Waiver of the one HPED credit hour requirement may be granted by the chair of the Health and Physical Education Department. In such cases, the student must complete a minimum of 120 credit hours for graduation.
- 202.7** To be eligible to receive a baccalaureate degree with a minor, a student shall have completed the required credit hours in his/her major, and a student shall have completed a minimum of 18 credit hours in the minor. A maximum of six of the total credit hours can be applied to both the major and the minor.
- 202.8** To receive a second minor, a student shall have completed at least 12 credits that were not used in either the major or first minor.
- 202.9** A student must declare the minor(s) no later than the submission of the graduation application.
- 202.10** A degree will only be granted within a seven (7)-year period after the student has left the college.
- 203 Program Requirements**
- When a student changes his/her program or graduates and immediately readmits from a certificate to an associate program or from an associate to a bachelor program, provided that there is continuous enrollment, the student must meet graduation requirements in effect when the student first matriculated to the college. In all other cases, the student must meet graduation requirements for the program effective when he/she was admitted/readmitted to the college.
- 205 Requirements for Earning Two Degrees**
- 205.1** In order for a student to receive two associate degrees, he/she must have earned a minimum of 90 credit hours at Alfred State College or transferred in 30 credit hours but earned a minimum of 60 credit hours at Alfred State College (not including challenge credit). The two associate programs must differ by a minimum of 30 credit hours.
- 205.2** In order for a student to receive two baccalaureate degrees, he/she must have earned a minimum of 150 credit hours or transferred in 90 credit hours but earned a minimum of 60 upper-division credit hours (not including challenge credit). The two baccalaureate programs must differ by a minimum of 30 credit hours.
- 205.3** A baccalaureate-level student may receive an associate degree in a related program or an associate-level student may receive a certificate in a related approved program, provided that he/she applied for both degrees prior to the completion of the baccalaureate or associate degree respectively.

## ACADEMIC INFORMATION

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### 300 Credits, Grades, and Indexes

#### 301 Credit Hour Definition

**301.1** A credit hour signifies 45 hours of student time involvement per semester per course credit hour. This may consist of 15 hours of lecture and 30 hours of preparation; 45 laboratory hours with no outside preparation; 15 hours of lecture and 30 laboratory hours; or other combination of lecture, laboratory, and preparation to 45 hours.

**301.1a** One credit for directed study and/or independent study will be awarded for the equivalent of forty-five 50-minute sessions of student academic activity.

**301.2** Honor points signify the quality of a student's performance for each credit hour in courses graded A through F. The number of honor points awarded per credit hour will vary from 4.0 to 0.0, depending upon the final grade earned in the course. The number of honor points is multiplied by the course credit hours to calculate the honor points earned in that course. The sum of the honor points earned is used in calculating the semester and cumulative indexes.  
(Note: 302.1 and 304)

#### 302 Grade Designation

**302.1** The following grade designations will be used:

Grade	Honor Points	Meanings
A	4	Excellent
B+	3.5	High B
B	3	Good
C+	2.5	High C
C	2	Satisfactory
D+	1.5	High D
D	1	Minimal passing
F	0	Failing
S	0	Passing-not included in index
U	0	Unsatisfactory
E	0	Incomplete (See Sec. 302.2)
G	0	Withdrew or took leave of absence from college while passing
H	0	Withdrew or took leave of absence from college while failing
N	0	Grade not yet issued
P	0	Successful challenge
Q	0	Course taken on non-credit basis
NG	0	No grade
T	0	Transfer course
W	0	Dropped from course by instructor (See Sec. 502.9)
*	0	This symbol with a grade designates a developmental/remedial course.

**302.2** A grade of E is a temporary designation that indicates incomplete work due to circumstances beyond the student's control. It shall not be issued when the student fails to meet requirements due to his/her laxity.

**302.3** A grade designation of E will automatically be changed to F by the registrar if not removed during the next semester. A grade designation of E may not be changed to an N grade. A student with an E grade for a course needed to meet degree requirements will not be eligible to graduate.

**302.4** Use of N Grade

- The use of the N grade shall be restricted to those cooperative work experience professional practice courses, where completion of the course requirement does not adhere to the college calendar.
- The N grade signifies the course is still in progress.
- Use of the N grade for any course other than those described in 1 must have the approval of the student's department chair and the chair of the department in which the course is offered.
- A student with an N grade on his/her record will not be eligible for graduation.
- A grade designation of N will automatically be changed to F by the registrar if not removed during the following semester.

**302.5** A maximum of one open elective course may be taken for a grade of S or U each semester at the student's option with his/her department chair's approval. Such a selection will be made at the time of registration for the course, and conversion of the letter grade (A-F) will be made by the registrar, using the following scale:

- Grades of A through D will become S
- Grade F will become U. An "open elective course" as referred to in this section is any course not specified in the student's program by name or subject area. This regulation does not apply to programs in Applied Technology, which have no provision for "open elective courses."

#### 303 Grade Changes

**303.1** A grade may be changed by the instructor of the course in which the grade is given. After one full semester has elapsed, any grade change must have the approval of the instructor's department chair. The registrar will notify the department chair(s), in which department student is enrolled and in which department the course is taught, of the grade change.

**303.2** Upon graduation, grades in courses used to complete degree requirements can not be changed except in cases where 303.1 applies. Further, such courses can not be repeated or transferred, thereby changing the student's grade point average.

#### 304 Calculating Index

**304.1** Only courses completed at this college for which a grade A through F is earned will be used in computing a student's index. All other grade designations will appear on the student's permanent record, but will not be used in calculating index.

**304.2** The semester index shall be calculated by dividing the total honor points earned by the total credit hours completed in that semester as specified in Sec. 304.1.

- 304.3** The cumulative index shall be calculated by dividing the total honor points earned by the total credit hours completed at this college as specified in Sec. 304.1.
- 304.4** Upon transfer from one program to another, grades for courses which are not transferred shall not be used in calculating the cumulative index. (See Sec. 305.3)
- 304.5** When a course is repeated, the credit hours shall be used only once, and the honor points corresponding to the highest grade earned shall be used in calculating the cumulative index. If the course cannot be repeated because it has been deleted or the department has revised the program requirements, a course of similar content may be taken in place of the original course and recorded as a "repeat." Such course substitutions must have the approval of the student's department chair and the course department chair.
- 305 Transfer Credit**
- 305.1** Transfer credit procedure shall be initiated in the Enrollment Services Office.
- 305.2** Evaluation of transfer credit from another institution shall be made for matriculated students by the department chair or designated appointee(s) in whose department the student is enrolled using the following grades:  
 A. Credit will be given for courses passed with a grade of C or better (**credit for a C minus shall not be given**). In the evaluating of transfer credit, a grade of S or P will be considered equivalent to a grade of C.  
 B. Credit will be given for courses passed with a grade of C minus or better if the overall index of the courses being transferred remains at 2.0 or higher.  
 C. Credit hours granted will be equivalent to the corresponding course hours in this college. Partial credit may be granted with the approval of the department chair in whose department the course is offered.  
 D. Transferred credits from other institutions will not be included in the calculation of indexes.
- 305.3** Evaluation of transfer credit within the college shall be made by the department chair or designated appointee(s) in the department to which the student transfers. Grades, including Fs, for courses that have been taken and that are required in the new program shall be transferred as earned. If the student has already completed a degree at the college, no grades that were earned for that degree can be excluded from the student's academic transcript during the transfer evaluation.
- 305.4** Transfer from one degree program to another requires approval of the department chair of the department in which the student is registered as well as approval of the department chair of the department to which the student wishes to transfer. Such changes must be processed by the end of the fourth week of classes for the current semester. Changes after the fourth week will be effective for the subsequent semester.
- 305.5** A student may satisfy degree requirements by taking courses at another college and transferring no more than 12 credit hours within a seven-year period after leaving this College. This transfer program shall have prior written approval by his/her department chair. Courses transferred in this manner may replace comparable courses already taken at this college, thereby removing such courses from the calculation of index.
- 306 Challenge Credit**
- 306.1** A challenge credit is a request by a matriculated student to take an examination for course credit in a subject in which he/she has competence. The challenge must be approved by the department chair or designee in which the course is offered. A student may not challenge a course for which he/she has already earned a final grade at the college.
- 306.2** In order to receive challenge credit, the challenger shall successfully pass a comprehensive examination as determined by the chair of the department in which the course is offered.
- 306.3** Tuition charges and/or examination fees for challenges will be determined by the College.
- 306.4** A grade of P shall be given upon successful completion of a challenge. The grade shall be treated as transferred credit in meeting graduation requirements.
- 307 Proficiency Examination Credit**
- 307.1** College credit for NYS Proficiency Examinations, College Level Examination Program (CLEP), Advanced Placement Examinations, and other proficiency examinations shall be treated as transferred credit in meeting graduation requirements.
- 307.2** Such credit will be based on the following rules:  
 A. No more than 30 credits required for an associate's degree will be granted.  
 B. Credit for successful examination performances is based on a minimum test grade of C or a grade which is equivalent to a C, such as a 3 on Advanced Placement.  
 C. Credit may only be granted after the student has matriculated at this college.  
 D. Credit is given only for subject matter that could normally be transferred from this institution.  
 E. Evaluation for proficiency examination credit is performed by the chair of the department in which the subject related to the examination is offered.  
 F. Credit for proficiency is not counted as residence credit required in regulation 201.7.  
 G. No fee will be charged for services performed by the college in regard to these proficiency tests.
- 400 Classification of Students**
- 401 General Classification of Students**
- 401.1** By Class:  
 Associate  
 Level: Freshman - 0 - 23 credit hours earned and a degree student in a associate-level program  
 Senior - 24 or more credit hours earned and a degree student in a associate-level program  
 Bachelor  
 Level: Freshman - 0 - 23 associate-level credit hours earned and a degree student in a bachelor-level program  
 Sophomore - 24 - 61 credit hours earned and a degree student in a bachelor-level program  
 Junior - 61 - 89 credit hours earned and a degree student in a bachelor-level program  
 Senior - 90 or more credit hours earned and a degree student in a bachelor-level program
- 401.2** Other:  
 Full-time student - Currently registered for 12 or more credit hours  
 Part-time student - Currently registered for fewer than 12 credit hours  
 Degree Student - Enrolled in a program in which she/he anticipates earning a degree  
 Non-Degree Student - Enrolled in an academic area of study or continuing education program but does not anticipate earning a degree  
 Matriculated Student - Currently enrolled and admitted to the college by official approval of the State University of New York and the college Admissions Office.

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Non-matriculated Student - Enrolled in coursework, but has not been admitted to the college by the Admissions Office.

- 401.3** A student who earns 30 credit hours while non-matriculated must submit a formal application for admission to the college or sign a statement that he/she does not intend to pursue a degree. A formal application for admission must be submitted no later than the semester before he/she expects to graduate.

### 402 Student Academic Status

- 402.1** Designation of Academic Status:

The academic status of every full-time or part-time student will be determined at the end of the regular fall and spring academic semesters.

- 402.1a** The academic status of "no standing" is automatically assigned to a student who withdraws, takes a leave of absence, or is suspended.

- 402.1b** A student's department chair, at the request of the department faculty, can make a request to the Vice President for Academic Affairs for a change in academic standing of a student at any time during a semester.

- 402.1c** A student with remedial or developmental coursework will have his/her standing calculated to include all courses for purposes of standing.

- 402.2** Changes in Academic Standing & Appeals

A student has the right to appeal an academic standing by submitting a formal appeal letter and attaching any supportive documentation (e.g., proof of medical illness, extenuating circumstances) to the Office of the Vice President for Academic Affairs.

- 402.2a** The appeal must be received within 10 business days of the calendar deadline for submitting final grades.

- 402.2b** Each school in the College will establish a School Academic Dismissal Appeal Committee consisting of a representative (chair or faculty member) from each academic department within that school. Academic Dismissal appeals will be reviewed by this committee.

- 402.2c** The school's Academic Dismissal Appeal Committee can recommend to the Dean to keep the student academically dismissed or to grant a conditional readmission where the student is placed on academic probation and must meet specific conditions or terms (e.g., repeat courses; change degree program; limit credit hours taken, attendance, etc.) recommended by this committee.

- 402.2d** A final decision on the Academic Dismissal Appeal Committee's recommendation will be made by the Vice President for Academic Affairs, and may also require permission of a Department Chair when a degree program change condition is imposed.

- 402.2e** A student required to take a semester off for any reason will need to reapply through the Admissions Office.

- 402.3** Good Standing:

A student with a cumulative grade point average (CGPA) of 2.0 or higher is considered in Academic Good Standing.

- 402.3a** A student failing to fulfill specific program or course grade requirements may be placed on academic probation or academic dismissal from his/her academic degree program by his/her academic department.

- 402.3b** A student will receive a letter of Academic Warning from the Vice President for Academic Affairs, if his/her semester grade point average (SGPA) falls below a 2.0, but cumulative grade point average (CGPA) remains at or above a 2.0.

- 402.4** Academic Probation:

A student will be on Academic Probation if his/her cumulative grade point average (CGPA) is below a 2.0 and his/her semester grade point average (SGPA) is above the academic dismissal cut-off shown in section 402.5.

- 402.4a** A student with a semester grade point average (SGPA) at or above a 2.0 will remain on academic probation until his/her CGPA is at or above a 2.0.

- 402.5** Academic Dismissal:

A student will be academically dismissed if his/her cumulative grade point average (CGPA) falls below a 2.0 and his/her semester grade point average (SGPA) is below the following standards:

# of attempted credit hours	SGPA less than:
1-18	< 1.0
19-36	< 1.5
37+	< 2.0

- 402.5a** A student may be academically dismissed from his/her academic degree program if they do not meet specific program or course grade requirements.

### 403 Honors

- 403.1** All candidates completing their degree requirements with a cumulative index of 3.5 or greater will be recognized as honor graduates, and this honor will be included in the student's academic record. Each honor graduate, based on final cumulative index calculation, will also be recognized at the Commencement exercises in a manner to be determined by the Commencement Committee. Honor graduates will be distinguished by the following categories:

CUM LAUDE	3.50-3.69
MAGNA CUM LAUDE	3.70-3.89
SUMMA CUM LAUDE	3.90-4.00

- 403.2** To be named to the Dean's List, a student must have taken at least twelve (12) GPA credit hours of course work for the semester and (A) have earned at least 3.50 semester index.

### 500 Registration, Scheduling, and Attendance

- 501.1** A student shall register according to the college calendar. Registration is completed when he/she has paid the required tuition and fees. Any student who does not complete his/her registration by the assigned day will be considered a late registrant.

**502 Scheduling and Schedule Changes**

- 502.2** A student registering for more than 19 credit hours in a semester must have the approval of his/her academic dean.
- 502.3** A course may be dropped until 10 instructional days after the interim grade period ends, with the approval of the student's department chair. Courses dropped during this period shall receive no grade designation.
- 502.3a** Courses in which a student has been failed for academic dishonesty cannot be dropped.
- 502.4a** Part-of-term courses may be dropped or added without fee within one week of the first class meeting and with the approval of the student's department chair and dean.
- 502.4b** Part-of-the-term and intersession courses may not be added after 20% of the scheduled classes have been completed, and may not be dropped after 50% of the scheduled classes have been completed.
- 502.5** Students may be admitted to the college within the first five instructional days of the semester. After the first five instructional days, students may only be admitted into programs that have a designated start date beyond that point in time.
- 502.6** A student may add a course to his/her schedule within the first five instructional days, with the approval of the student's department chair or academic advisor.
- 502.7** After five instructional days of the semester, a course may be added only with the approval of both the student's department chair and the chair of the department in which the course is offered. Courses may not be added after the tenth instructional day of the semester.
- 502.8** A class section change within the first five days requires the approval of the student's department chair or academic advisor. After five instructional days, a section change will also require the approval of the course department chair.
- 502.9** An instructor may request that the course department chair drop a student from course registration due to non-attendance or violation of standards as stated in the course syllabus or as published in the Principles of Community, with the approval of the student's department chair. The course department chair will inform the student in writing citing the reason(s). When a student is dropped from a course according to this procedure, a grade of "W" • will be assigned.
- 502.10** A student enrolled in an associate degree program may register in no more than a total of 19 credit hours of course work designated as upper-level. Any course work with grades designated in AR 302.1 except Q or NG will be included in the 19-credit total.

**503 Attendance**

- 503.1** Each instructor shall be responsible for distributing to the students enrolled in his/her classes the printed or typed attendance requirements of the course which abide by Sec. 503.2 and Sec. 503.3. These attendance regulations must be filed in the instructor's department office.
- 503.2** Participation in authorized college functions such as field trips; athletic events; choir, band, and drama tours; and other intercollegiate activities shall be an acceptable reason for class absence, provided that prior to the absence the student makes arrangements with his/her instructors to make up work to be missed. Instructors need not extend make-up privileges when a student's total absence exceeds 10 percent of the scheduled class meetings.
- 503.3** Under existing state laws, individual students may be excused from class without penalty because of religious beliefs provided that prior to the absence the student makes arrangements with his/her instructors to make up work to be missed. Instructors need not extend make-up privileges when a student's total absence exceeds 10 percent of the scheduled class meetings.
- 503.4** Individual students will be excused from class without penalty due to military orders. The student must make arrangements with his/her instructors to make up work. If requested by the faculty member, military orders must be provided to the faculty member as soon as they are received by the student. Instructors need not extend make-up privileges when a student's total absence exceeds 15 percent of the scheduled class meetings.

**600 Withdrawal and Readmission**

**601 Withdrawal from College**

- 601.1a** A formal withdrawal or leave of absence from the college is not official until the registrar signs the required form.
- 601.1b** A student who receives a leave of absence, withdraws, or is academically dismissed after more than 30 instructional days into a semester shall receive a grade of G or H, depending on the student's academic standing in a course on the last day of attendance in that course.
- 601.1c** Continuing students who have officially withdrawn from the college are eligible to apply for readmission. The "application for readmission" form is available by contacting Admissions.
- 601.2** Students leaving the college during a semester without formally withdrawing, have not received a leave of absence, been academically dismissed will not receive G or H, determined as of the last day of attendance in that course.
- 601.3** Part-of-term courses that are completed prior to the date of withdrawal, leave of absence, or academic dismissal will be assigned a grade (A-F, G or H, or NG) at the discretion of the faculty member instructing the course, with notification to be given to the student's department chair.
- 601.4** Any student suspended/expelled from the college will be issued a grade of NG for each course he/she was enrolled in during the semester when he/she was suspended/expelled.
- 601.5** A student who is currently suspended/expelled from the college for disciplinary reasons is not eligible to apply to graduate nor can his/her name be added to any final graduation list.

**602 Readmission**

- 602.1** A student who has discontinued his/her academic program prior to meeting graduation requirements and wishes to apply for readmission must complete the Alfred State Application for Readmission through the Admissions Office.
- 602.2** A student who is or will be a graduate of the college and wishes to apply for readmission must complete a SUNY Application and process it through the Application Services Center for a new program. The new program must be significantly different than the program from which the student graduated (See Section 205 for Earning Two Degrees). The Admissions Office in conjunction with the Academic Affairs Leadership Team will create acceptable readmission application procedures to implement the two parts of this regulation.

## ACADEMIC INFORMATION

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### 700 Examinations

#### 701 Final Examinations

- 701.1** A final examination period will be included in the academic calendar at the end of each semester. Final or unit examinations will be scheduled according to the final exam matrix during the examination period for all courses, as established by the Registrar's Office. Exams for evening classes will be scheduled during the final exam period during the same day/time as the class normally meets. Departments with multiple section courses desiring combined section testing must coordinate the scheduling of this exam with the registrar's office. Faculty concluding a course with a unit exam must give the unit exam during the final examination period. All comprehensive final examinations must be scheduled during the final examination period.
- 701.2** The decision to have a final examination for any course will be determined by a consensus of the faculty currently teaching the course. A final exam or a final project may be used. Notice of the decision will be provided to the course department chair and announced to the students during the first week of instruction on the course syllabi.
- 701.3** The weight of the final examination in computing the final grade shall be at the discretion of the course instructor.



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## Agriculture and Veterinary Technology Department

Dr. Philip D. Schroeder, Chair

Phone: (607) 587-3983; Email: schroePD@alfredstate.edu

Classes and laboratories for students taking agriculture and veterinary technology courses are held primarily in the Agriculture Science Building, the Veterinary Technology Center, and at the college farm. The Agriculture Science Building contains laboratories specializing in soils, botany, and animal anatomy and physiology. A 5,300-square-foot greenhouse produces hydroponic vegetables, edible flowers, and herbs. The greenhouse also contains a tropical room, desert room, and plant propagation areas. Greenhouse plants are used for instruction in the botany, IPM, soils, sustainable vegetable and forage courses. The Veterinary Technology Center features Surgical and Radiography suites, a vivarium for lab animals and exotics, and kennel areas.

The college farm is the home to 135 registered Holsteins. Sixty lactating cows have a BAA of 108.7 and a rolling herd average of over 28,000 pounds with over 1,100 pounds of fat. Students experience all aspects of herd management. They also have an opportunity to participate in cattle showing as well as the opportunity to become a member of the Alfred State Dairy Judging Team that tours during the fall and spring semesters. The farm is also home to a small number of horses, both miniature and full size, alpacas, swine, poultry, and sheep that are used for instruction in animal care and management. The 800-acre farm is also used by soils, botany, feeds and nutrition, and field, and forage crops classes. Students have the opportunity to work on the farm as interns.

The college farm is also home to Alfred State's Center for Organic and Sustainable Agriculture (COSA). COSA features an organic dairy herd housed in a free stall barn completed in 2012. Management intensive grazing and a robotic milking system are key aspects of the organic dairy. Students learn dairy herd management and animal health care protocols on both the conventional and organic pasture - based herds. In addition, field trips to very large dairy farms in Western and Central New York give students exposure to yet another category of farming operation. Our goal is to help students become creative problems solvers and decision makers in an industry characterized by rapid changes and continuous innovation

### THE EXPERIENCE OPPORTUNITY

Agriculture students participate in hands-on experiences working with crops, plants, animals, facilities, and equipment. Students are involved with all the enterprises relating to their field of study. Graduates leave our programs with a true feel for the industry they plan to enter. Veterinary technology students are prepared to sit for the Veterinary Technology National Exam (VTNE) through intensive lecture and laboratory courses. Passage of this exam is required for licensure as a Veterinary Technician. Veterinary technology students are also required to complete a 240-hour preceptorship (work experience), which gives them real, practical experience between completing their first year and graduation. Students have many opportunities to help tell the story of agriculture at college-hosted events for elementary and high school students, educators and the general public. Through the agricultural and veterinary technology clubs, students help organize dairy and livestock shows, consignment sales, judging competitions, agricultural skills contests, tours and other educational events.

### FACILITIES

Students are taught in modern, well-equipped laboratories including specialized facilities for the study of soils, botany, microbiology, plant pathology, and entomology. The College also maintains the 800-acre College Farm which serves as a field laboratory to provide practical instruction in production agriculture, and produce feed for the College's livestock. The College Farm has recently undergone a complete renovation. The new facilities include side-by-side conventional and organic dairy herds and feature a robotic milking system. Currently, Alfred State is the only institution of higher education in the United States with both conventional and organic dairy systems. Our organic dairy herd also employs an Intensive rotational grazing management system. Other facilities at the farm focus on high tunnel vegetable production, row crop production, and agroforestry practices. The farm allows students to apply the knowledge they learn in the classroom, and gain practical hands-on learning experiences through involvement in the day-to-day management of the farm. Additional facilities are being developed at the Groveland farm, a 270-acre crop farm near Sonyea, NY.

## ACADEMIC INFORMATION

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The veterinary technology program is primarily housed in the newly completed Veterinary Technology Center. The center includes surgical and radiography laboratories a classroom area for Introduction to Veterinary Technology, Animal Health Care and Laboratory Animal management laboratories, as well as animal housing facilities. The Veterinary Technology Center vivarium will house mice, rats, snakes, lizards, tortoises, turtles, rabbits, and guinea pigs. The cat room can house up to 18 cats and the dog kennels can house 11 dogs, with seven kennels having outdoor run access. Well-equipped laboratories for teaching animal anatomy and physiology, necropsy, parasitology and clinical pathology are located in the Agriculture Science building. Large animal laboratories are conducted at the Alfred State farm where students learn to safely work with and care for a variety of farm animals including horses, pigs, sheep, goats, alpacas, and dairy cattle of all ages.

### DEPARTMENT PROGRAMS

Agricultural Business (AAS)  
Agricultural Technology (AAS)  
Veterinary Technology (AAS)

## Architecture and Design

Heinrich Hermann, Ph.D., Chair

Phone: (607) 587-4698; Email: [hermanhg@alfredstate.edu](mailto:hermanhg@alfredstate.edu)

The Department of Architecture and Design offers a five-year professional Bachelor of Architecture degree, a Bachelor of Science degree in architectural technology, and an Associate in Applied Science degree in architectural technology. These degrees are designed to serve the varying needs within the profession of architecture. The Associate of Applied Science degree in interior design provides graduates with basic knowledge and skills for entry-level positions in the interior design discipline.

### DEPARTMENT MISSION

The Architecture and Design Department at Alfred State prepares graduates for immediate employment or continued educational opportunities in a range of design and technology-related disciplines. The department provides quality technical education that integrates theory and practice with a foundation in the arts and sciences.

### FACILITIES

The Architecture and Design Department offers all students in the department the use of extensive laboratory facilities that enhance each student's learning experience as it relates to his/her chosen program.

**Architectural Studios** - Junior and senior baccalaureate-level students have access 24 hours per day to three studios. These rooms in the Engineering Technology Building contain 15 advanced computer visualization workstations. Peripheral devices such as scanners, digital cameras, and large format color plotters are readily available. A school-wide 3-D Printing Fabrication Laboratory is in preparation.

**Interior Design Studios** - First- and second-year students have access 24 hours per day to four studios. Each has 20 work stations and are laptop ready (either hard-wired or with access to the campus wireless network). Students also have access to a model shop, plotter room, and materials library.

**Please note:** All entering students in both the architecture and interior design programs are required to purchase a laptop computer. The laptop enables students to have access to program-specific software via the wireless network on campus.

### DEPARTMENT PROGRAMS

Architecture (BArch)  
Architectural Technology (AAS and BS)  
Interior Design (AAS)

## Automotive Trades Department

Kent Johnson, Chair

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Today, more than ever, the highly skilled automotive service technician has an increasingly important role in the efficient operation of our society. The four automotive trades areas - automotive service technician, heavy equipment: truck & diesel technician, autobody repair, and motorsports technology - prepare technicians for the ever-expanding and highly specialized trade industry.

Students can apply for and take their NYS Inspection test during their freshman year.

The automotive service technician program is master certified by the National Automotive Training Educational Foundation (NATEF); the autobody repair program is Inter-Industry Conference on Automotive Collision Repair (ICAR) certified; and the heavy equipment: truck & diesel technician program is ADS affiliated.

NATEF is a national industry-wide organization whose 40-member board of directors represents all aspects of the automotive industry. Representation by such a diverse group of individuals adds to the credibility of the certifications to assure that programs meet stringent national standards.

### FACILITIES

Students work in facilities consisting of approximately 82,000 square feet of repair shops, classrooms, on-campus parts store, and study areas. The areas have the latest equipment.

The autobody collision shop contains late-model down-draft bakepaint booths, paint mixing room, frame-straightening machines, uni-body bench, and a computerized estimating system.

Auto repair shops and classroom areas contain the latest equipment, including computerized front-end aligners, brake equipment, computerized engine analyzers, automatic transmission and engine machine shop equipment, computer specification and service information terminals in all shops.

Our heavy equipment: truck & diesel shops are equipped with: specialized fuel injection overhauling and test lab; engine rebuilding area of live units; multispeed transmission and rear axle repair area; engine tune-up area containing computer-operated late model diesel engines; handheld diagnostic scanners; and a computerized specifications and service information room.

Students take the motorsports courses and perform extensive hands-on work in a newly remodeled, newly equipped facility located in Alfred. First-year courses are taken in the freshman automotive building located at the School of Applied Technology campus in Wellsville.

### EXPENSES

In addition to regular college expenses, students entering the automotive trades programs must purchase tools and uniforms. The cost of tools and toolbox is approximately \$4,400 for the automotive trades freshman year. The cost of tools for the second year depends upon which program is selected. In addition, the total cost for textbooks, shop uniforms, safety shoes, and safety glasses is about \$950 for two years.

Students entering the automotive parts technology program must purchase textbooks and uniforms. The cost of textbooks is approximately \$750. The cost of uniforms is approximately \$200-\$225.

Miscellaneous expenses are approximately \$200.

Please refer to the most current required tool list on the Alfred State website at [www.alfredstate.edu/tool-lists](http://www.alfredstate.edu/tool-lists).

### BENCH UNITS/STUDENT AUTOMOBILES

Some instruction cannot be given on 'live' vehicles; thus, students who have been accepted into the automotive technician, heavy equipment: truck and diesel, and motorsports programs are required to

## ACADEMIC INFORMATION

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furnish bench units. These units, such as alternators, starters, distributors, air conditioning compressors, power steering pumps, and gear, may be purchased at an approximate cost of \$0-150.\*\* (\*\* Cost calculated from poll of current students.)

Students receive information about procurement and identification of bench units from individual course instructors after arriving on campus.

Students are required to have a personal vehicle for use in performing 'live' lab assignments that are required in order to gain proficiency in the trade. Due to the rapid changes in the tune-up, electrical, fuel, and emission areas of the service field, students are encouraged to work on vehicles and bench units manufactured within the last 10 years. It should be noted that these personal vehicles do not have to be licensed or registered. They may be stored on the campus automotive parking lot for the duration of the school year and must be removed by the last day of classes.

### TECHNICAL STANDARDS FOR ALL AUTOMOTIVE TRADES PROGRAMS

Applicants for all programs in the Automotive Trades department must meet the following physical requirements:

1. Must be able to perform safely in the shop.
2. Must be able to lift 50 pounds to eye level.
3. Must be able to communicate orally with a person six to 10 feet away.
4. Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
5. Must have a valid motor vehicle license and be able to drive a standard transmission vehicle.
6. Must be able to diagnose mechanical failures that are distinguished audibly.
7. Must be able to understand information found in service repair manuals and use diagnostic flow charts.
8. Must meet qualifications for a NYS driver's license.

### DEPARTMENT PROGRAMS

Autobody Repair (AOS)

Automotive Service Technician (AOS)

Heavy Equipment: Truck & Diesel Technician (AOS)

Motorsports Technology (AOS)

Automotive Parts Technology (AAS)

## Building Trades Department

George H. Richardson, Chair

Phone: (607) 587-4574; Email: richargh@alfredstate.edu

The Building Trades department is composed of four programs: building construction; heavy equipment operations; masonry; and air conditioning and heating technology. Rewarding careers in the construction industry are open to students graduating from the building trades programs. With the continual development of new building methods and materials, the craftsperson finds it necessary to keep abreast of these developments. Construction, as in many other occupations, is becoming a field of specialists.

The building trades programs provide instruction in the skills required by the carpenter, heavy equipment operator, mason, plumber, heating specialist, or air conditioning specialist in the construction and remodeling of residential or light commercial masonry buildings. Coupled with hands-on experience working at off-campus construction sites, the programs provide the necessary theory as well as instruction in blueprint reading, cost and materials, estimating, safety, and the use of newly developed equipment and materials.

Please refer to the most current required tool list on the Alfred State website at [www.alfredstate.edu/tool-lists](http://www.alfredstate.edu/tool-lists).

**FACILITIES**

The building construction laboratory is equipped with nearly every power and hand construction tool available to instruct the student in all phases of the carpentry trade. Off-campus construction of frame buildings is carried out each year by the department so that students have a maximum amount of on-the-job experience.

**TECHNICAL STANDARDS**

Applicants in the Building Trades department programs must be able to meet the following physical requirements:

1. Must be able to lift 50 pounds to shoulder height.
2. Must be able to perform safely in the laboratory.
3. Must be able to communicate orally with a person 20 feet away.
4. Must be able to climb a ladder and/or able to climb, un-aided, onto and off of equipment using three points of contact.
5. Must be able to stand for long periods of time.
6. Must be able to visually read from a blueprint or drawing.
7. Must be able to hear a backup warning alarm.

**DEPARTMENT PROGRAMS**

Air Conditioning and Heating Technology (AOS)  
Building Trades: Building Construction (AOS)  
Heavy Equipment Operations (AOS)  
Masonry (AOS)

## **Business Department**

Francine Staba, Chair

Phone: (607) 587-3422; Email: stabafm@alfredstate.edu

Alfred State's Business department faculty employ their real-world experiences to lead, motivate, and empower students to succeed in all aspects of business and life, and to positively impact their communities as well as their respective disciplines.

The department offers 13 programs for students desiring immediate employment or wishing to pursue a four-year degree.

Classrooms are equipped with up-to-date electronic equipment. Computer technology has been integrated into course content. Computers are networked to classrooms, faculty offices, residence halls, and the Internet.

Courses during the first year in virtually all business programs are almost identical. This 'core block' of courses enables students, during freshman year, to easily transfer from one business program to another with no loss of academic credit. Students may enter the programs in either the fall or spring semesters.

All programs in business provide graduates with maximum employment flexibility. Many associate graduates go on to pursue bachelor's degrees in business or business education, while many graduates of the BBA programs go on to pursue master's degrees.

All business programs are computer-based, mixing both theory and practice. Technical accounting knowledge, communication and interpersonal skills, and career-related computer literacy are stressed throughout the programs. Graduates of two-year degree programs have the option of entering the job market or pursuing a four-year or advanced degree.

Students completing virtually any Business department two-year degree may seamlessly transfer directly into one of our own bachelor degree programs.

## ACADEMIC INFORMATION

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Students in technology management, financial planning, or sport management (BBA) programs have the advantage of participating in a semester-long, 12-credit internship during their last semester, providing them real-life experience. Many times these lead to full-time employment upon graduation.

### FACILITIES

The court and realtime reporting laboratory is equipped with computer-aided translation equipment at every student workstation. All students receive hands-on instruction using computer-aided translation (CAT) equipment. This real-time translation skill enables the graduate to take advantage of closed-captioning employment opportunities.

### DEPARTMENT PROGRAMS

Accounting (AAS)  
Business Administration (Transfer) (AS)  
Business Administration (BBA)  
Business Management (Career) (AAS)  
Court and Realtime Reporting (residential and online) (AAS)  
Court Reporting and Captioning (Certificate) (online only)  
Entrepreneurship (AAS)  
Financial Planning (BBA)  
Financial Services (AAS)  
Marketing (AAS)  
Sport Management (BBA)  
Sports Management (AS)  
Technology Management (BBA)

### STUDY ABROAD

The Business Department offers two opportunities for students to study abroad. The first program is a study abroad program in Sorrento, Italy. Alfred State has partnered with Sant'Anna Institute (formerly Sorrento Lingue Institute) in Sorrento, Italy, to offer an optional semester of study abroad to its students. Alfred State and Sant'Anna Institute now offer the American college student an enriching semester of studies in the south of Italy.

In keeping with Alfred State's mission, which is to offer two-year and four-year programs to prepare graduates to live as citizens of a global society, our study abroad program at Sant'Anna Institute (SASL) will establish a foundation for lifelong learning, foster an understanding of global culture, and better equip the participant to 'hit the ground running' after graduation. The beautiful scenery of the Gulf of Naples and the safe and welcoming city of Sorrento provide the setting for an unforgettable educational experience.

For Alfred State junior business administration and technology management students, there is the added opportunity of studying the European Union. Italy, one of the 27 member states, is a symbol of success, thanks to its system of capitalism. Required courses in International Business and Business in the European Union will give our students a global business perspective. Students will use a framework to research select bachelor business administration program outcomes (communication, management, marketing, and economics) from different European Union member state's perspective. Students will have the opportunity to visit Italian businesses and participate in round table discussion with business leaders.

These courses are taught by Alfred State faculty unless otherwise noted. Students will also be able to customize their curriculum of study by taking online courses through Alfred State or any other institution, or even participate in an internship with a business in Sorrento.

The second opportunity is a student exchange program with IAE-Lille, which is located in Lille, France. The Bachelor of Business Administration is a one-year program of courses taught in English, on the main domains of business administration and management. Students who have completed a two-year degree in one of the business curriculums would be eligible to apply for this program.

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## Civil Engineering Technology Department

Jeffrey K. Marshall, Chair,  
Phone: (607) 587-4649; Email: marshajk@alfredstate.edu

The Civil Engineering Technology department offers a bachelor's program in construction management engineering technology to serve the construction industry and the civil engineering profession as well as an associate degree program in construction engineering technology. Additionally, it offers associate and bachelor degree programs in surveying engineering technology to serve the surveying profession. Students are required to have laptops. The laptops allow students wireless access to the campus network from any location on campus.

### DEPARTMENT MISSION

To provide graduates with the skills necessary to have a successful career in their chosen field, have a better understanding of the world we live in, and improve their own lives.

### FACILITIES

The Civil Engineering Technology department offers all students in the department use of extensive laboratory facilities that enhance each student's learning experience as it relates to his/her chosen program.

**Construction Management Laboratory** – Equipped with 20 computer work stations in conjunction with appropriate estimating software and hardware to digitize quantities from drawings and work up estimates with minimal manual input. Software commonly used for project scheduling and planning is also used with the computers in this facility to develop PERT and CPM charts. Construction Project Administration software is also used in this lab.

**Soils, Concrete, and Material Testing Laboratory** – Provides a meaningful experience in laboratory and field testing of various construction materials and structural systems. The equipment enables students to learn procedures that meet recognized field testing procedures of the American Concrete Institute (ACI) and the American Society for Testing and Materials (ASTM).

**Hydraulics Laboratory** – Equipped to offer students an applied as well as theoretical approach to the study of hydraulic problems encountered in civil engineering technology and the construction industry.

**Surveying Computations Laboratory** – Contains microcomputer workstations, plotters, digitizers, and overhead projection systems. It is designed to support the 'field-to-finish' concept of surveying data collection, data reduction, and analysis as well as computer-aided drafting and design. Students use this facility to work with land development and design software, geographic information system software, and the reduction of satellite data. This lab enables students to do word processing, spreadsheet analysis, programming, data analysis, networked computer-aided design and drafting, and advanced 3D modeling.

**Surveying Laboratory and Equipment Room** – Serves as the basic laboratory/lecture area for surveying field/design projects. Adjacent to this lab is the room housing a myriad of equipment, including electronic total stations, global positioning satellite equipment, theodolites, transits, and levels.

### DEPARTMENT PROGRAMS

Construction Engineering Technology (AAS)  
Construction Management Engineering Technology (BS)  
Surveying Engineering Technology (AAS and BS)

## **Computer and Information Technology Department**

James Boardman, Chair

Phone: (607) 587-3454; Email: boardmjh@alfredstate.edu

The Computer and Information Technology (CIT) department offers both associate and bachelor degrees. The CIT department offers the following associate degrees: an Associate of Applied Science (AAS) in computer information systems, and an Associate of Science (AS) in computer science. Students who earn the computer information systems degree may continue in any of the department's four Bachelor of Technology (BTech) degree programs. The computer science degree program is primarily designed to allow students to transfer into a college that offers a Bachelor of Science degree program in computer science; however, after completing their first year of study, computer science students have the opportunity to transfer into either our computer information systems AAS degree or into one of our four BTech degrees.

The department offers four Bachelor of Technology degree programs in network administration, applications software development, web development, and information security and assurance. Our programs are designed to allow for employment in the rapidly expanding computer and information technology industry. Students may enter these programs as freshman or transfer in as juniors from related associate degree programs. Articulation agreements have been developed with several community colleges to facilitate transfers. All of our degree programs provide our students with a solid foundation in the four core areas of information technology: application programming, web programming, network administration, and information security. At the end of their sophomore year, students are then allowed to select the BTech degree that best matches their academic interests. Our degrees incorporate the latest technology, including mobile application development, secure software development, life cycle processes, cloud computing, wireless networking, and neural programming. Our programs also stress the soft skills so necessary in the working environment by requiring students to take courses in business management, technical writing, speech, business communications, project management, and business accounting.

### **FACILITIES**

Laboratories - Students are allowed 24-hour access to labs equipped with state-of-the-art software and hardware. Our laboratories provide students with ample hands-on experience, giving them a considerable edge in the highly competitive computer and information technology job market. Our labs are constantly being updated to keep current with advancing technology.

The college has an academic license for VMWare software products, so students, using the latest version of VMWare Workstation, can run multiple guest virtual machines on our powerful lab computers, creating complex layered virtual networks that can be directly connected to any of our lab's network equipment. The department has a blade server with 128 gigabytes of RAM and a 12 terabyte storage array. We employ the latest VMWare enterprise software to manage our blade server and create a private cloud infrastructure dedicated to our students.

The college has an academic license for all Microsoft software, which allows students free access to the latest enterprise network operating systems, latest enterprise security software, and latest application software. The department has a Cisco Certified Academy so our network lab contains a full complement of Cisco routers, switches, and wireless access points. Being a Cisco Academy allows our instructors to freely access all Cisco advanced networking software. As a certified academy, the department has three Cisco-certified instructors to teach the Cisco Certified Network Associate (CCNA) and CCNA Security curricula. Additionally, the network lab contains a full complement of network security equipment to include Cisco Adaptive Security firewalls, Juniper application firewalls, Juniper routers, Juniper SSL VPN concentrators and Oracle blade server. The department also has a certified Juniper academy and VMWare IT academy. All of our networking equipment is professionally installed on 19-inch racks with multiple patch panels, which allows our students to easily design and implement complex client/server network and security architectures. The department has an academic license with Oracle, allowing students and professors access to over \$750,000 worth of software. Additionally our lab computers are installed with the latest Web development software to include the very expensive Adobe Creative Suite 6.0. We also



have a dedicated systems laboratory used for teaching microcomputer configuration. The department manages a Pearson VUE, Prometric and Certified Internet Web Professional certification testing center. The testing center allows IT students to obtain professional certifications in all areas of information technology.

### **DEPARTMENT PROGRAMS**

Computer Information Systems (AAS)

Computer Science (AS)

Information Security and Assurance (BTech)

Information Technology: Applications Software Development (BTech)

Information Technology: Network Administration (BTech)

Information Technology: Web Development (BTech)

## **Computerized Design & Manufacturing Department**

Karen M. Young, Chair

Phone: (607) 587-3182; Email: [youngkk@alfredstate.edu](mailto:youngkk@alfredstate.edu)

The Computerized Design & Manufacturing department has three exciting and very rewarding areas of study: the drafting/CAD programs, the machine tool technology program, and welding.

Addressing the ever-increasing need for professionally trained CAD drafters, the drafting/CAD programs provide graduates with necessary skills and knowledge to successfully compete for entry-level positions. Graduates of our programs will have successfully completed 1,800 hours as follows: 120 hours of applicable math and 30 hours of geometric dimensioning and tolerancing. The balance is instruction of drafting techniques and concepts on students' laptops using AutoCAD, or NX8 software. The first year's work is directed toward the student's gaining a thorough understanding of the fundamentals of drafting principles, tolerancing, manufacturing processes, procedures, and applied mathematics. The student's senior year is devoted to the discipline of the student's choice.

With the rising demand for skilled machine operators and machinists, the machine tool technology programs provide graduates with skills needed to perform well in an industrial setting. Manual machine tools are used extensively for the first year of the program. The second year of the machine tool technology program offers the use of computer numerical control machine tools as well as cutting-edge software and advanced machine techniques.

Graduates of the machine tool programs successfully complete 1,800 class hours as follows: 120 hours of related math and 120 hours of print reading; the balance is machine instruction and programming.

Graduates of the welding program will have successfully completed 1,800 hours of related course work. The welding program offers hands-on and classroom training in the skills necessary to become certified as an entry-level welder. The program is taught according to the standards set by the American Welding Society and features newly equipped labs. Students learn MIG, TIG, stick arc, plasma, Flux Core, Shielded Metal Arc, and Oxy-Fuel welding processes on state-of-the-art equipment from Lincoln and Miller, among others. In addition, fundamentals of welding metallurgy, testing and inspection, blueprint reading, fabrication, and industrial-related special welding processes are incorporated in the program. Welding students are given the opportunity to take certification tests after successful completion of their welding course.

### **Technical Standards for Drafting/CAD**

Applicants in any of the drafting/CAD programs must meet the following physical requirements:

1. Must be able to visually read computer monitor or laptop.
2. Must be capable of using digitizing equipment.
3. Must have good hand/eye coordination to operate the above.

## ACADEMIC INFORMATION

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### Technical Standards for Welding & Machine Tool

Applicants for the welding and machine tool programs in the Computerized Design and Manufacturing department must meet the following physical requirements:

1. Must be able to perform safely in the shop.
2. Must be able to lift 50 pounds to eye level.
3. Must be able to communicate orally with a person between six and 10 feet away in a shop environment.
4. Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
5. Must be able to diagnose mechanical failures that are distinguished audibly.
6. Must be able to understand and retain information found in service repair manuals and use diagnostic flow charts.
7. Must be able to visually read an LCD display on welding equipment.
8. Must have the dexterity and mobility to weld in all the welding positions to meet all requirements.
9. Good eyesight is recommended.

Industrial internships are available to all students of the Alfred State Computerized Design & Manufacturing department. These opportunities allow the student to interact in a professional work environment. Upon successful completion, appropriate college credit is applied to the student's record as applies.

Please refer to the most current required tool list on the Alfred State website at [www.alfredstate.edu/tool-lists](http://www.alfredstate.edu/tool-lists).

### FACILITIES

The drafting facilities simulate typical industrial settings. Plotting media, scanning equipment, and various projection systems are used in the delivery of daily lectures and presentations. Students work using cutting-edge software on their own notebook computer.

The first-year machine tool lab is equipped with manually operated machines (lathes, mills, shapers, grinders, etc. and appropriate tooling), establishing a solid machining foundation upon which to continue. Acquisition of equipment stems from a \$1,000,000 grant from the Gleason Foundation. This equipment allows students to use the most up-to-date technology available. The second-year machine tool technology program is located in an actual industrial setting. The second-year machine tool student will be instructed in the use of CNC machine tools and may apply this knowledge in a shadowing experience in the host companies' facilities.

The welding shop, established using a \$300,000 federal Appalachian Regional Commission grant, houses 20 individual welding booths, each with an adjustable exhaust pickup. It contains heavy-duty industrial grade welders, TIG, MIG, Oxy-fuel, and arc welders along with oxy-fuel and plasma cutters. Hydraulic bend tester and grinders comprise the equipment in this facility. In our senior welding lab, tools used in the fabrication industry will be used. This impressive facility is located adjacent to our machine tool center at a local industrial park.

### DEPARTMENT PROGRAMS

Drafting/CAD

Machine Tool Technology (AOS)

Welding Technology (AOS)

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## Culinary Arts Department

John M. Santora, Chair

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The food industry, and in particular food production and management, is one of the most dynamic and fastest growing industries in the world. The variety and number of culinary employment opportunities are apparent to anyone who has dined in a restaurant, resort, college dining hall, hospital, or coffee shop. The industry offers a wide range of career opportunities on many levels, including food production and service, food production management, supervisor of food production employees, and employee training programs.

Students in this program learn culinary arts by cooking approximately 750 meals a day in our cafeteria and in our a la carte lunch and fine dining kitchens. Through production at 'real-world' levels, they develop professionalism, quality, and efficiency. Our labs include institutional, a la carte, evening fine dining, and baking, hands-on food planning, production, service, and management and supervisory skills to meet real customers' needs.

### TECHNICAL STANDARDS

1. Perform lab functions while standing on their feet for extended periods of time (up to five hours) daily.
2. Be proficient in reading (for guest checks, recipes, and instructional manuals) and mathematics (for recipe conversion, cost control, and calculations associated with food production and service).
3. Write with sufficient clarity for communication with faculty, kitchen personnel, and guests.
4. Lift 40 pounds from floor to eye level.
5. Orally communicate with people six to 10 feet away.
6. Visually identify degree of product doneness.
7. Walk on a slippery floor while carrying 40 pounds with caution and safety.
8. Handle kitchen equipment, including knives, with dexterity and safety.

Please refer to the most current required tool list on the Alfred State website at [www.alfredstate.edu/tool-lists](http://www.alfredstate.edu/tool-lists).

### FACILITIES

The Cafeteria Lab gives students the opportunity to learn quantity food production for institutional production of food through the preparation and service of 750 institutional meals daily.

The Restaurant Lab is a well-equipped dining room and a la carte kitchen that has the equipment used in commercial restaurants. Students prepare and serve meals to order for approximately 40 luncheon patrons daily. It is also used for our evening fine dining lab, where up to 16 patrons are treated to gourmet delights in the only evening meal training program in Western New York. Selected banquet activities are scheduled so that students may learn to plan and prepare for catered events. Breakfast, lunch, and dinner special events are scheduled each semester.

The Bakery Lab is reputed to be the best equipped training facility of its kind in the state. The student has access to virtually all types of baking equipment used commercially to produce baked goods. The bakery is adjacent to an institutional food production laboratory and an a la carte kitchen where baked goods are an integral part of the 750 meals produced daily. The Baking Lab is a learning-production lab for quantity baking for a cafeteria, restaurant dining, or catered functions. In addition, the preparation and presentation of elaborate creations common to upscale restaurants offers creative students the opportunity to develop their talents.

An amphitheater-style resource-demonstration room, equipped with computers, video taping capabilities, and an extensive library of cookbooks and videotapes, is within our building with access for all.

### DEPARTMENT PROGRAMS

Culinary Arts (AOS)

Culinary Arts: Baking, Production & Management (AOS)

### Digital Media and Animation Department

Tammy Brackett, Chair

Phone: (607) 587-4659; Email: bracketr@alfredstate.edu

The Digital Media and Animation department offers Associate of Applied Science and Bachelor of Science degrees in digital media and animation.

#### DEPARTMENT MISSION

The Digital Media and Animation department at Alfred State prepares graduates for immediate employment or continued educational opportunities in a range of design and technology-related disciplines. The department provides quality technical education that integrates theory and practice with a foundation in the arts and sciences.

#### FACILITIES

**Digital Media and Animation Studios** - Students in DMA programs have access to a large traditional studio space for foundations in traditional materials, figure drawing, and 2D and 3D design. They also have access to a highly sophisticated computer lab that provides industry standard capability in 2D graphics, Web design, interactive media, motion graphics, 2D and 3D animation. Students enrolled in a DMA degree program have 24-hour access to these studios.

A sound production studio with industry standard software and hardware is also available for students to use for class projects.

**Other Equipment and Software** - Digital cameras, digital audio recorders, HD video cameras, and other pieces of high-end equipment are available for students to sign out.

**All entering students in the digital media and animation programs are required to purchase a laptop computer.** The laptop enables students to have access to program-specific software via the wireless network on campus.

#### DEPARTMENT PROGRAMS

Digital Media and Animation (AAS)

Digital Media and Animation (BS)

### Electrical Trades Department

James R. Jerla, Chair

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Electricity, and the electricians who install and maintain these systems, plays a critical role in the function of the nation's and the world's complex industrial technology, as well as an individual's personal environment. Nearly all aspects of an individual's life are affected by some component of this diverse field. Without competent personnel to support today's complex electrical systems, our lives and the economy would be seriously impacted. The faculty and staff of the Electrical Trades department provide the skills and occupational competence necessary for entry in the field of electrical technologies.

#### FACILITIES

The Electrical Trade's laboratories are well equipped with electrical test equipment. Students will facilitate learning by direct hands-on applications of the theory, knowledge, and skills presented in lecture. In this program approximately 50 percent or more of each day is spent working hands-on in the laboratory.

The opportunity for real-life work experience is integrated into the program. Much of the hands-on electrical training provided in the freshman year consists of actual wiring projects off campus. The senior electrical students receive real-life experience working with the campus maintenance department,

troubleshooting campus equipment, rewiring existing facilities, or designing and installing the electrical systems in new facilities. Seniors also will design and install automated projects in the lab incorporating relay logic, PLC's, pneumatics, hydraulics, and process control systems.

Computer technology has been integrated into all of the courses. The facilities for the Electrical Trades department have full wireless network capability for students with laptop computers having network cards. The classrooms are also fully wired with ports for the desktop computers provided and for student laptops without wireless capabilities.

**EXPENSES**

Electrical construction and maintenance electrician program: The cost for textbooks, tools, and lab supplies is approximately \$1,200 for the two years of study.\* A laptop computer is not required for this program.

\*Please refer to the most current required tool list on the Alfred State website at [www.alfredstate.edu/tool-lists](http://www.alfredstate.edu/tool-lists).

**TECHNICAL STANDARDS FOR THE ELECTRICAL CONSTRUCTION & MAINTENANCE ELECTRICIAN PROGRAM**

Math sequence I & II recommended for all programs, plus the following requirements:

1. Must be able to visually translate information on analog or digital meters and other test equipment.
2. Must be able to lift 50 pounds to eye level.
3. Must be able to communicate orally with a person six to 10 feet away.
4. Must be able to read and decipher information found in technical manuals.
5. Must be able to adhere to and perform all safety requirements.

**DEPARTMENT PROGRAMS**

Electrical Construction and Maintenance Electrician (AOS)

## **English and Humanities Department**

Dr. Robert Curry, Chair

Phone: (607) 587-4235; Email: [curryrl@alfredstate.edu](mailto:curryrl@alfredstate.edu)

The English and Humanities department offers courses in composition, foreign language, fine art, speech, philosophy, and literature for the entire college.

Colleges, universities, and large corporations have been increasingly emphasizing the significance of a liberal arts and sciences education in providing a solid foundation upon which careers are built. The liberal arts and sciences: humanities program prepares students for life by stressing the importance of reading, writing, and thinking while developing in them an appreciation of the arts and of the wisdom of great minds.

The department is housed in the Hunter Student Development Center, with mathematics, computer, and study skills labs as well as classrooms equipped with the most recent technological teaching aids.

**DEPARTMENT PROGRAMS**

Liberal Arts & Sciences: Humanities (AA)

## **Mathematics/Physics Department**

Dr. Kathleen Ebert, Chair

Phone: (607) 587-4270; Email: ebertkc@alfredstate.edu

The Mathematics/Physics department offers a variety of courses, including pre-algebra, algebra, trigonometry, statistics, calculus, differential equations, astronomy, physics, and physical science. Students are recommended for placement in mathematics on the basis of their high school preparation and their placement test score.

The department faculty serve as advisers for students majoring in the areas of mathematics and/or science and for those in the pre-environmental science and forestry programs. They also serve as advisers for undeclared majors.

Physics and physical science courses develop within the student an understanding of basic physical principles and an appreciation of the natural environment. Technical programs require a firm foundation in fundamental physics. To that end, courses also encourage and develop the student's competence in the use of logical procedures in problem solving.

Math courses are taught to develop students' abilities in logical reasoning, problem solving, and critical thinking, as well as to build algebraic reasoning and calculus skills.

### **FACILITIES**

The physics laboratories are well equipped with apparatus to facilitate learning by direct experience and to provide students with an opportunity to 'discover' many principles on their own. The laboratory instructor is a member of the regular teaching staff and, in most cases, is the same instructor that the student has for the physics lecture session.

Facilities include a linear air track, lasers, air table, x-ray recorders, gamma spectrometers, oscilloscopes, precision electrical measuring devices, strobe lights, precision timers, and an 8-inch Cassegrain telescope, as well as a large collection of traditional physics apparatus, many of which are used directly by the students in their laboratory work. In addition, the Mathematics/Physics department has an extensive collection of audio-visual materials.

There is a computer facility adjacent to the physics laboratories, with 10 computer terminals available for student use. Students are encouraged to use the computer for both laboratory data analysis and wherever appropriate application can be made to their lecture course.

Math and physics tutorials are available to students on the campus computer network and several math courses are taught using innovative computer software.

### **DEPARTMENT PROGRAMS**

Liberal Arts & Sciences: Math & Science (AA)

Pre-Environmental Science & Forestry (AA)

Undeclared Major

Individual Studies (AS)

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# Mechanical and Electrical Engineering Technology Department

Dr. Edward G. Tezak, Chair

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The Mechanical and Electrical Engineering Technology department has several programs that prepare graduates to join the workforce as successful technical and management professionals in a variety of industries. The department offers a broad range of degrees in electrical engineering technology, mechanical engineering technology, engineering science, CAD/CAM, and computer engineering technology. The programs are supported by a unique combination of mechanical and electromechanical facilities, equipment, and faculty resources. This enables the department to respond directly to new technologies as they evolve in areas such as controls, robotics, automation, microelectronics, process control, computer analysis, and sustainable/renewable energy.

Each degree provides useful career-building skills for students who seek employment immediately upon graduation or continue their education toward advanced degrees. The programs are well rounded and provide graduates with the appropriate technical and nontechnical knowledge, experience, and skills that will enable them to be successful and continually adapt to change in these dynamic career fields.

Since the programs are related to nearly every company, product, or process, graduate placement is excellent. The Mechanical and Electrical Engineering Technology department maintains active contact with related industries and professional societies and works closely with them to assist graduates in exploring their profession and creating contacts for employment. Educational opportunities also occur through internships, projects, competitions, and field trips in addition to memberships in several active professional society student chapters. The Mechanical and Electrical Engineering Technology department has several programs that provide a foundation in many areas, including computer-aided engineering and graphics, energy systems, manufacturing and materials, automation, and product and machine design. Graduates find employment in these and many related areas.

## DEPARTMENT MISSION

To prepare graduates for immediate employment and continued educational opportunities through a quality technical and experience-based education.

## FACILITIES

The Mechanical and Electrical Engineering Technology department offers extensive laboratories to support each program with equipment, instrumentation, and test facilities directly related to each field of specialization. These facilities provide the practical experience needed by today's technical graduates. The application of computers for analysis, data acquisition, data reduction, report writing, and technical presentations is also emphasized throughout the programs.

**Advanced Electronics Laboratory** - Each workstation in this laboratory has a computer that controls automated test equipment stations with a waveform generator, digitizing oscilloscope, multimeter, and power supplies. Students can capture the oscilloscope display, run automatic frequency response, or measure device characteristics and insert these results into their laboratory reports. The workstations have programs for data analysis and circuit simulation such as Excel, MATLAB, PSpice, and MultiSIM. Internet connections allow quick reference to manufacturers' data sheets. In addition to the general-purpose and automated test equipment, the laboratory also contains radio frequency (RF) test equipment and data communications test equipment to investigate modulation and transmission of RF and fiber-optic communications and data communications systems. The laboratory also has digital signal processing (DSP) trainers that interface with the workstations to develop hardware/software solutions for signal processing as used in a variety of telecommunications equipment.

**Analog and Digital Electronics Laboratory** - This laboratory contains multiuse work areas. When used as an introductory electrical circuits and a digital electronics laboratory, students bring in their breadboard notebook constructed in the fabrication lab and use it to build and test simple circuits to develop an understanding of the fundamentals of circuit theory and digital electronics. Other test equipment such as oscilloscopes, meters, power supplies, and signal generators are available as needed. This laboratory is

## ACADEMIC INFORMATION

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also equipped with eight matched sets of AC and DC fractional horsepower machines and the test equipment necessary to analyze their performance. Stepper motors, servo motors, programmable logic controllers (PLC), transformers, rectifiers, synchronous machines, loading devices, variable frequency drives, and a simulated transmission line relay demonstrator are available and used for laboratory experiments.

**Automated Manufacturing Laboratory** – Provides direct experience with computer numerical control (CNC) machines, robotics, and the integration of robotic concepts to automated manufacturing. Part design and programs for operation of the CNC systems are prepared and executed. A new addition to this lab is a 3-axis coordinate measuring machine for parts inspection and reverse engineering.

**Control Systems Laboratory** – Provides experience with logic control systems as they apply to motors, pneumatics, hydraulics, and processes utilizing control relays, contactors, switches, programmable logic controllers, actuators, regulators, valves, and flow controls. Students learn the logical sequence of controls and understand different applications by designing, fabricating, and testing systems.

**Electromechanical and Industrial Automation System Laboratory** - This laboratory provides an integrated engineering systems approach toward understanding automation principles with emphasis on embedded microcontrollers. Exposure to electrical, mechanical, and process control areas is integrated into this laboratory, allowing for evaluation of embedded controller applications using motion control and peripheral devices such as pushbuttons, switches, seven segment and liquid crystal displays (LCD), matrix keypads, analog to digital converters, and radio frequency (RF) and infrared (IR) interface links.

This laboratory also introduces the student to general characteristics of electromechanical sensors and transducers, electrical measurement systems, electronic signal conditioning, and response characteristics of instruments. Industrial equipment, such as a punch press, drill press, and metal lathe, are equipped with sensors that are configured to measure physical quantities such as force, strain, displacement, velocity, and acceleration. Computers in the laboratory running LabVIEW software perform data acquisition, calculation, and report generation with a graphical user interface.

Utilizing renewable energy sources requires environmental monitoring. Laboratory activities could include using transducers to measure wind speed and direction, solar radiation, and temperature.

**Electromechanical Controls Laboratory** - This laboratory contains relay and pneumatic devices to connect industrial controls. This laboratory is also equipped with eight matched sets of AC and DC fractional horsepower machines and the test equipment necessary to analyze their performance. Stepper motors, servo motors, programmable logic controllers (PLC), transformers, rectifiers, synchronous machines, loading devices, variable frequency drives, and a simulated transmission line relay demonstrator are available and used for laboratory experiments.

**Electronic Fabrication Laboratory** - This is a freshman 'skills' laboratory covering a wide range of basic electronic fabrication techniques. It introduces the student to layout and design software tools for sheet metal chassis and printed circuit board (PCBs) designs, electronic component identification, the proper use of soldering/desoldering tools, wire-wrapping, schematic layout, and PCB design and fabrication techniques, as well as familiarization with a wide range of hand and power tools and proper safety practices. The laboratory is equipped with a kick-shear, punch press, bending brake, drill presses, Pace solder stations, CNC rapid prototype machine, ultraviolet light table, and PCB developer and etching system. These facilities are also used to support development and fabrication activities for other course areas and student projects as well.

**Energy Systems and Engine Laboratory** – Provides students hands-on experience with state-of-the-art equipment that deals with various types of engines, fuels and lubricants and alternative energy issues. Systems include conventional flat panel solar heating, solar concentrators, solar-assisted heat pumps, co-generation and geothermal heat pumps. Real-time equipment performance data is used for simulation, modeling, and economic analysis.



**HVAC&R (Heating, Ventilating, Air Conditioning and Refrigeration) Laboratories** – Provide hands-on experience in the areas of heating, ventilating, air conditioning, refrigeration, fluid mechanics, heat transfer, and thermodynamics. Classroom theory is reinforced through the application to heating systems (forced air furnaces, steam and hot water boilers), air conditioning and refrigeration systems, heat pump systems, and coils. The characteristics of the laboratory systems are investigated, tested, and evaluated for component and overall efficiencies. Students gain experience in the operation of electrical, power, temperature, pressure, air flow and water flow, combustion, and system balancing test equipment. These laboratories have been generously supported and upgraded through a large grant from a mechanical engineering technology alumnus and several American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE) senior project grants.

**Machine Tool/Manufacturing Laboratory** – Equipped with 20 manual tool-room style engine lathes, vertical and universal milling machines, drill presses, and radial drill presses. Traditional machining operations are introduced and reinforced in this laboratory with the goal of giving the students hands-on exposure to various methods and techniques applied to production so as to give a better understanding of the related design concepts.

**Engineering Materials Laboratory** – Includes a 160,000-pound universal testing machine and other test equipment to examine impact, torsion, hardness, and fatigue. Metallographic preparation and computer-aided image processing are used to examine material structure. Heat-treating furnaces are also used to investigate the effects of thermal processing.

**Mechanical Design Laboratory** – Equipped as a standard industrial research and development laboratory in the area of mechanical systems dynamics. This facility enables students to analyze rotational equipment, industrial power transmission devices, and various mechanical linkage designs. Using a 'learn-by-doing' approach, students are able to apply the theoretical concepts conveyed during lecture to complete rigorous laboratory assignments.

**Mechanisms Laboratory** – Provides a true design environment that is supported by the latest software for drafting, solid modeling, product design, mechanism & system design, calculations, presentations, and analysis. Labs consist of either stand-alone desktop computers or student laptops.

**Metrology & Measurements Laboratory** – Serves as a state-of-the-art 'quality assurance' center and is anchored by new equipment recently donated by area companies. Facilities include a manual coordinate measurement machine donated by Helmel Engineering and a digital Starrett optical comparator and direct computer controlled coordinate measurement machine, both acquired through a grant from the Gleason Foundation.

**Semiconductor Manufacturing Laboratory** - This laboratory gives the student a realistic experience in semiconductor manufacturing process. In industry, the nature of the integrated circuit (IC) fabrication process is highly complex and absolutely intolerant of mistakes.

#### **DEPARTMENT PROGRAMS**

CAD/CAM Technology (AAS)  
Computer Engineering Technology (AAS and BS degree)  
Electrical Engineering Technology (AAS and BS degree)  
Engineering Science (AS)  
Mechanical Engineering Technology (AAS and BS degree)

### Nursing Department

Dr. Kathleen Sellers, Chair  
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The Nursing department offers an accredited associate-degree nursing program accredited by the National League for Nursing Accrediting Commission (NLNAC) [61 Broadway, New York, NY 10006] that prepares individuals to become Registered Nurses (RNs). The nursing major is designed to be completed in two academic years, but may be revised to meet individual needs. Licensed practical nurses or transfer students from other nursing programs are eligible for advanced placement.

Alfred State nursing AAS graduates may enter directly into the nursing bachelor's degree program. The bachelor's degree program can be completed full time in two years or part time as the student desires. The upper-level nursing courses are offered in a online format. The upper-level course work includes nursing, science, and liberal arts, primarily. Students are invited to campus twice a semester for orientation to the course and to a scholarship day at the semester's end.

This is an exciting time to be in nursing. The impending shortage of practitioners and current critical shortage of educators is leading to multiple options for those interested in the profession. Jobs are available nationwide in a wide range of settings, usually with excellent salaries, and opportunities for growth. At Alfred State, we are preparing students who will be designers, coordinators and managers of healthcare. Our students graduate as leaders contributing to the advancement of health care and the profession itself.

Alfred State prepares nurses on a number of levels. The student completes our 2-year associate degree RN program, is eligible to take the NCLEX-RN licensing exam, and graduates with an Associate Degree in Nursing. License practical nurses (LPNs) may enter this program with advanced standing. Students receive excellent clinical preparation in a variety of settings within an hour radius of the AS campus. We also offer a dual degree program where the student is enrolled simultaneously in the ADN and BS-N program. Lastly, we offer a BS-N completion program for registered nurses prepared at the associate degree level. This program may be completed as either a full-time or part-time student, in either an online or hybrid format. This quality program offers flexibility for working professionals with hubs in the Alfred, NYC and Albany, NY areas.

#### DEPARTMENT PROGRAMS

Nursing (AAS)  
Nursing (BS)

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## Physical and Life Sciences Department

Mark J. Amman, Chair

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The Physical and Life Sciences department at Alfred State provides students a strong education in a wide range of scientific and technical disciplines through online and on-campus curricular offerings. Faculty specializations span a spectrum of health information technologies, plant physiology, genetics, nutrition science, forensic science, chemical instrumentation, microbiology, and physical chemistry. While diverse, the faculty and staff share the common goal of effectively delivering the practical and theoretical foundations of disciplines through a rich blend of interactive lectures, informal discussion, meaningful laboratory inquiries, and internships. In addition to discipline-related course work, each program is complemented by a broad array of general education courses aimed at equipping students with insights and background that will help fulfill their roles in greater society. Emphasis is also placed on lifelong learning, as reflected by the many articulation agreements assuring seamless transition to other programs within Alfred State and to other institutions of higher learning.

The department offers students direct use of modern laboratory/clinical equipment in real-world or simulated settings and provides the highest level virtual laboratory experiences. Practical, hands-on competencies, critical reasoning skills, and, where pertinent, team-based problem solving, is 'de rigueur.' If a student expresses an interest outside of a discipline's normal scope, independent study options may also be developed.

In some programs there are physical ability requirements based on individualized assessment rooted in current medical evidence or the best objective evidence. See each program for specific physical requirements. If a student's physical ability compromises or threatens his/her success in a program, or the health and safety of others, he/she may be denied enrollment or continuation in the program.

### **FACILITIES**

The Physical and Life Sciences department is located in the newly renovated Physical and Health Sciences Building. Four science-ready lecture rooms are on the first floor with eight laboratories found on the second and third floors for the biological sciences, environmental technology and the forensics science technology programs. The laboratories are outfitted with state-of-the-art equipment and instrumentation, anatomic models, and the latest application software for teaching and learning as well as for independent study and research. The health information technology and coding and reimbursement specialist curricula are located completely online.

Explore the information describing the different curricular offerings and courses of the department below.

### **DEPARTMENT PROGRAMS**

Biological Science (AAS)  
Coding & Reimbursement Specialist (Certificate)  
Environmental Technology (AAS)  
Forensic Science Technology (BS)  
Health Information Technology (AAS)

## **Social and Behavioral Sciences Department**

Michael J. Cobb, Chair

Phone: (607) 587-4282; Email: cobbmj@alfredstate.edu

The Social and Behavioral Sciences department offers courses in anthropology, criminal justice, education, history, human services, political science, psychology, and sociology. It coordinates four curricula: human services management, human services, liberal arts & sciences: social science, and liberal arts and sciences: adolescent education (teacher education transfer).

### **HUMAN SERVICES MANAGEMENT**

The human services management bachelor's degree program prepares graduates for mid-level positions in human services and social services agencies requiring skills in both direct service to clients and in management. It also prepares them for transfer into graduate-level programs in such areas as human services, public administration, and social work administration.

### **HUMAN SERVICES**

The human services associate-level program prepares students for entry-level career positions in a variety of human service occupations or to continue their education in baccalaureate programs. Students who pursue careers upon graduation often work with the elderly or in early childhood, chemical dependency, or mental retardation programs. Students who transfer often select baccalaureate majors in human services management, social work, criminal justice, education, human services, psychology, and sociology.

### **LIBERAL ARTS & SCIENCES: SOCIAL SCIENCE**

The liberal arts and sciences: social science associate degree program is a transfer program that provides flexibility to students in their choice of future major. Students take considerable course work in psychology, sociology, and history, and additional courses in mathematics, English, the humanities, and the natural sciences. When transferring, students often select baccalaureate majors in psychology, anthropology, sociology, political science, history, gerontology, communications, early childhood/childhood education, adolescent education, and criminal justice.

### **LIBERAL ARTS & SCIENCES: ADOLESCENT EDUCATION - TEACHER EDUCATION TRANSFER**

The liberal arts and sciences: adolescent education (teacher education transfer) associate-level program prepares graduates to transfer to a four-year adolescent education program at a public or private college or university. Students may select one of six concentrations: history/social studies, English, math, physics, biology, or chemistry.

### **DEPARTMENT PROGRAMS**

Human Services Management (BS)

Human Services (AS)

Liberal Arts & Sciences: Social Science (AA)

Liberal Arts & Sciences: Adolescent Education - Teacher Education Transfer (AA)

## Programs at Alfred State

### ACCOUNTING

#### AAS Degree – Code #0630

Thomas Stolberg, Program Coordinator  
Email address: stolbete@alfredstate.edu

The accounting program is one of the most established and respected programs within the business discipline. It is a computer-based program in which accounting theory and practice receive equal emphasis as applied to both financial and managerial accounting issues. It intends to support the career objectives of those looking to enter the job market upon graduation, as well as the academic needs of those looking to pursue advanced degrees. Required course work covers areas critical to success in today's business workplace:

1. Technical accounting knowledge
2. Communication and interpersonal skills
3. Career-related computer literacy

A laptop computer is recommended, but not required, for students entering the accounting program.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Define and provide an example of the major underlying elements and principles of accounting (per FASB) and discuss the legal and ethical choices that may arise through their application. Students must be able to present the relevant application of each in a group/team oral presentation.
- Prepare and interpret (using basic math to employ common ratio analysis) the four general purpose financial statements (income statement, owners equity statement, balance sheet, and cash flow statement).
- Contrast, in writing, the major differences between Financial and Managerial Accounting.
- Define basic cost concepts, including differentiation between fixed and variable costs within the relevant range.
- Demonstrate a knowledge of current U.S. income tax concepts, laws and regulations and computational procedures in individual taxation and be able to contrast our country's system with the systems utilized in at least two other countries.
- Demonstrate proficiency in the use of technology by properly employing accounting information systems for purposes of payroll, accounting reports and general ledgers.
- Info Management (computer & research skills appropriate to degree level and type)

- Written & Oral Communication (appropriate to degree level and type)
- Critical Thinking (problem solving, reasoning skills appropriate to degree level and type)
- Students must demonstrate, through their oral and written work, an overriding fundamental understanding and acumen for the for-profit business environment.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State accounting graduates may enter directly into either the business administration BBA, financial planning BBA, or technology management BBA degree program here at Alfred State.

#### TRANSFER OPPORTUNITIES

Students may transfer directly into one of our own BBA degree programs or to another college. To facilitate the transfer of graduates choosing to continue their education at the baccalaureate level, students are encouraged to make their intentions known to their academic adviser during their freshman year. Through the careful use of elective courses, students can realize excellent transfer credit.

The Business department has established many formal articulation agreements with local four-year institutions, although graduates may transfer to colleges virtually anywhere. Historically, accounting graduates have done very well after leaving Alfred State, whether they enter the work force or transfer to an advanced program.

#### OCCUPATIONAL OPPORTUNITIES

- Banking
- Manufacturing
- Retail
- Government and other not-for-profit entities
- Tax Agencies
- Financial Services

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent - 25 percent are employed; 75 transferred to continue their education.

#### RELATED PROGRAMS

Agricultural Business  
Business Administration  
Computer Information Systems  
Financial Planning  
Financial Services

## PROGRAMS AT ALFRED STATE

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Marketing  
Technology Management

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra  
Recommended: Geometry and Algebra  
2/Trigonometry

### Accounting - AAS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
ACCT	1124	Financial Accounting	4
COMP	1503	Freshman Composition	3
CISY	1103	Information Technology Mgt.	3
MKTG	2073	Principles of Marketing	3
MATH	xxx3	Math Elective	3
HPED		Physical Education Elective	1
			17

Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
BUAD	4203	Personal Financial Planning	3
	xxx3	Humanities Gen. Ed. Elective	3
MATH	xxx3	Math Elective	3
	xxx3	Gen. Education Elective	3
			19

Third			
ACCT	3423	Intermediate Accounting I	3
CISY	xxx3	Computer Elective	3
ECON	1013	Macroeconomics	3
ACCT	3433	Cost Accounting I OR	
ACCT	3453	Tax Accounting I	3
BUAD	3043	Business Law I	3
			15

Fourth			
ACCT	4523	Intermediate Accounting II	3
BUAD	3153	Fundamentals of Management	3
BUAD	4053	Business Law II	3
ECON	2023	Microeconomics	3
ACCT	4663	Accounting Systems & Computer Applications	3
			15

### GRADUATION REQUIREMENTS

66 semester hours including 20 hours in major field with a 2.0 cumulative index in such courses as well as six hours of math.

**AGRICULTURAL BUSINESS****AAS Degree - Code #0511**

Dr. Dorothea Fitzsimmons, Program Coordinator  
Email address: fitsidd@alfredstate.edu

It is an exciting time to be an agricultural business student. One out of every six jobs in the American economy is related to the agriculture and food businesses. The curriculum in agricultural business is designed to provide students with the technical and business skills necessary to be successful in our nation's largest industry. Career opportunities in agribusiness range from managing a farm (dairy, beef, equine, vegetable, fruit, crops) to working in the timber, banking, or publishing industries. Ample opportunities are available in the management of farm supply stores or cooperatives, agricultural input sales, insurance, real estate, agricultural processing, and manufacturing industries.

Agricultural business managers also must have technical knowledge of agricultural production practices, land and water resources, management and agricultural markets. A rudimentary knowledge of veterinary science, as well as animal husbandry, is important for livestock and dairy farmers. The agricultural business curriculum will provide the student with the basic business, crop, and animal skills to make informed business decisions.

**PROGRAM STUDENT LEARNING OUTCOMES**

1. Demonstrate essential technical knowledge of animal husbandry methods to make informed agribusiness decisions
2. Demonstrate essential technical knowledge of crops, soils, and growing conditions to make informed agribusiness decisions
3. Demonstrate the ability to analyze information, and compare and contrast agricultural management systems
4. Info Management (computer & research skills appropriate to degree level and type)
5. Written & Oral Communication (appropriate to degree level and type)
6. Critical Thinking (problem solving, reasoning skills appropriate to degree level and type)

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State agricultural business graduates may enter directly into the technology management BBA degree program.

**RELATED CLUBS AND ACTIVITIES**

Students have the opportunity to participate in the Collegiate Agricultural Leaders (CAL) Club, Collegiate FFA, Equestrian Club, Dairy Judging Team, Agricultural Skills Day, Livestock Club, Spring Fling Consignment Sale, Community-Supported Agriculture projects, local foods projects, showmanship contests, and Sustainability Club.

**TRANSFER OPPORTUNITIES**

Many schools, including Cornell University, grant full credit to students wishing to transfer to four-year programs, usually in agricultural economics or agricultural education. A formal articulation agreement exists between Alfred State and Cornell University for transfer options.

**SCHOLARSHIPS**

The department offers various scholarships to students.

**OCCUPATIONAL OPPORTUNITIES**

- Management or Ownership of Commercial Farms
- Agricultural Credit Officers for Banks, Government, Loan Agencies, and Farm Cooperative Loan Agencies
- Feed, Seed, and Fertilizer Sales Technicians
- Writers of Technical Publications, Radio & TV Scripts, News Items for Magazines & Newspapers, Education & Public Relations Material
- Manager/Assistant Managers of Farm Supply Stores
- Warehouse Managers for Farm Chemicals, Feed, Seed, and Fertilizers
- Chain Store and Retail Food Management
- Agricultural Consulting Services

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 60 percent are employed; 40 percent transferred to continue their education.

**RELATED PROGRAMS**

Accounting  
Agricultural Technology  
Entrepreneurship  
Marketing

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Recommended: Algebra

## PROGRAMS AT ALFRED STATE

### Agricultural Business - AAS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
ANSC	1204	Intro. to Animal Science	4
AGRI	1002	Intro. to Agriculture	2
BIOL	1304	Botany	4
COMP	1503	Freshman Composition	3
	xxxx	Gen. Education Elective	3-4
			16-17

Second			
ANSC	3202	Dairy Management Analysis	2
AGRI	2012	Organic & Sustainable Ag. Tech.	2-3
CISY	1003	Intro. to Microcomputer Appl. OR	
CISY	1103	Info. Technology Management	3
ACCT	1124	Financial Accounting	4
	xxx3	Gen. Education Elective	3
	XXXX	Ag. Elective OR	
	xxx3	Business Elective	3-4
			17-19

Third			
ACCT	2224	Managerial Accounting	4
	xxxx	Ag. Elective	3-4
AGEC	3213	Farm & Rural Business	3
	xxx3	Gen. Ed. or Technical Elective	3
	xxxx	Ag. or General Education Elective	3
			16-17

Fourth			
AGEC	4303	Rural Business Finance	3
	xxx3	Bus. or Marketing Elective	3
AGRI	4002	Seminar/Capstone Project	2
	xxxx	Gen. Education Elective	3-4
	xxxx	Ag. Elective	2-4
			13-16

#### Agriculture Electives:

ANSC	2114	Domestic Animal A&P	
ANSC	3003	Feeds and Nutrition	
ANSC	3103	Livestock Management and Production	
ANSC	3202	Dairy Management Analysis	
ANSC	3204	Dairy Cattle Production III	
ANSC	3222	Dairy Calf Management	
ANSC	2102	Dairy Cattle Reproduction and A.I. Techniques	
AGPS	2114	Field and Forage Crops	
AGPS	5003	IPM	
AGPS	5103	Sustainable Vegetable Production Technology	
AGRI	3351	Live Animal Evaluation	

#### Business Electives:

BUAD	3043	Business Law	
MKTG	3153	Web Design & Marketing	
BUAD	4203	Intro. to Personal Finance	
CISY	3023	Advanced Spreadsheets	
BUAD	3153	Fundamentals of Management	

Also required - One unit of physical education.

### GRADUATION REQUIREMENTS

Students must:

- successfully complete the prescribed sequence of courses
- achieve a minimum index of 2.0 in their core courses
- achieve a minimum index of 2.0 overall
- be recommended by the department faculty



**AGRICULTURAL TECHNOLOGY****AAS Degree - Code #0510**

Dr. Philip Schroeder, Program Coordinator  
Email address: schroepd@alfredstate.edu

The agricultural technology program provides students the flexibility to select elective courses to fit their career goals. Students can choose concentrations of courses in animal science or plant science.

- Animal science concentration - students can elect courses to enhance their knowledge in animal agriculture and/or dairy science.
- Plant science concentration - students can elect courses to enhance their knowledge in crops and plant sciences, including fruit and vegetable production.

The careers related to agriculture are diverse and constantly changing. The agricultural technology program has been designed to allow students the freedom to select courses which will allow specialization in specific areas of agriculture. Options and opportunities for both conventional and organic farming practices will be offered on the college's production agriculture farms.

**PROGRAM STUDENT LEARNING OUTCOMES**

1. Demonstrate essential technical knowledge of animal husbandry methods to make informed agribusiness decisions
2. Demonstrate essential technical knowledge of crops, soils, and growing conditions to make informed agribusiness decisions
3. Demonstrate the ability to analyze information, and compare and contrast agricultural management systems.
4. Info Management (computer & research skills appropriate to degree level and type)
5. Written & Oral Communication (appropriate to degree level and type)
6. Critical Thinking (problem solving, reasoning skills appropriate to degree level and type)

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State agricultural technology graduates may enter directly into the technology management BBA degree program.

**Animal/Dairy Science Concentration**

The animal science concentration is a progressive practical program emphasizing dairy cattle management. The program offers both managerial and hands-on experiences. This concentration's

courses provide a science and business background. A strong emphasis is placed on application of these principles, with our two dairy herds: A tie-stall housed conventional herd of registered Holsteins milked in a parlor with integrated dairy cattle management software, and a free-stall housed organic herd milked by a robot. The conventional herd produces over 28,000 pounds of milk, more than 1,100 pounds of fat with a B.A.A. of more than 108.7 percent. The Alfred State cows have the highest B.A.A. of any publicly owned herd in the nation. Alternative species, including horses, pigs, alpacas, poultry, and sheep are also housed at the college farm for instructional purposes.

**Plant/Crops/Fruit/Vegetable Concentration**

This curriculum emphasizes management of the soil to increase production of food crops for both human and livestock consumption. Students are usually interested in crop farming or market gardening careers. Students are taught conventional, natural, and organic food production systems. This concentration's courses provide a science and business background. A strong emphasis is placed on application of sustainability principles on our farm, research plots, gardens, hydroponic systems, greenhouses, and high tunnels.

**SHOWMANSHIP DAY**

All students enrolled in agriculture classes truly enjoy participating in the annual showmanship activities each spring. Students can select a species of animal (cattle, horses, swine, alpacas, or sheep) to train, groom, and show in this annual competition. Family, friends, and alumni are invited to enjoy the competition and the awards BBQ following the showmanship contest.

**RELATED CLUBS AND ACTIVITIES**

Students have the opportunity to participate in the Collegiate Agricultural Leaders (CAL) Club, Collegiate FFA, Equestrian Club, Dairy Judging Team, Agricultural Skills Day, Spring Fling Consignment Sale, Community Supported Agriculture projects, local foods projects, showmanship contests, and Sustainability Club.

**TRANSFER OPPORTUNITIES**

Many schools, including Cornell University, grant full credit to students wishing to transfer to four-year programs. A formal articulation agreement exists between Alfred State and Cornell University for transfer options.

## PROGRAMS AT ALFRED STATE

### COLLABORATIONS

- Wyoming County Dairy Institute (WDCI) Dairy Herdsmanship Training modules can be completed and applied toward college credit for the agricultural technology degree at Alfred State.
- Scholarship money is available to students in the agricultural programs at Alfred State.

### OCCUPATIONAL OPPORTUNITIES

- Owners, Operators, Managers, and Herdsmen for Dairy Cattle and Meat Animal Farms
- Fruit, Vegetable, and Field Crop Production
- Food Industry
- Salespeople and Consultants for Feed, Fertilizer, Agricultural, and Veterinary Supply Companies
- Agricultural Banking and Lending
- Inspectors of Agricultural Products
- Laboratory and Field Technicians for Artificial Insemination and Veterinary Supply Companies
- Dairy Farm Inspectors

### EMPLOYMENT STATISTICS

Employment and transfer rate of 75 percent – 25 percent are employed; 50 percent transferred to continue their education.

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra

Recommended: Geometry, Algebra 2/Trigonometry, Biology, Chemistry

### EXPENSES

Textbooks are the primary expense with cost averaging \$500 per year. Boots and coveralls are required for all farm-related activities.

### Agricultural Technology - AAS Degree

#### ANIMAL SCIENCE CONCENTRATION TYPICAL FOUR-SEMESTER PROGRAM

First			
ANSC	1204	Introduction to Animal Science	4
AGRI	3351	Live Animal Evaluation	1
AGRI	1002	Introduction to Agriculture	2
BIOL	1304	Botany	4
	xxx3	English as advised	3
	xxx3	Gen. Education Elective (Math Recommended)	3
			17

Second			
AGPS	1103	Soils	3
ANSC	3203	Dairy Cattle Production I OR	
	xxxx	Animal Elective	3-4
ANSC	2114	Domestic Animal A & P	4
	xxxx	Agricultural Elective(s)	3
	xxx3	General Education Elective	3
			16-17

Third			
AGPS	2113	Field and Forage Crops	3
ANSC	3013	Animal Disease Control	3
AGEC	3213	Farm & Rural Management	3
	xxxx	Animal or Plant Agricultural Elective	3
	xxxx	General Education Elective	3
			15

Fourth			
AGEC	4303	Rural Business Finance	3
AGRI	4002	Seminar/Capstone Project	2
	xxx3	General Education Elective	3
	xxxx	Ag. or Transfer-related Elective	3-4
	xxxx	Ag. or Transfer-related Elective	2-4
			13-16

#### Suggested Agriculture or Transfer-related Electives:

AGPS	3004	Soil Fertility	
ANSC	3202	Dairy Management Analysis	
ANSC	3003	Feeds & Nutrition	
ANSC	3223	Dairy Calf Management	
ANSC	2102	Dairy Cattle Reproduction and A.I. Techniques	
ANSC	3103	Livestock Management and Production	
ANSC	3204	Dairy Cattle Production III	
AGPS	5103	Sustainable Vegetable Production	
AGPS	5003	IPM	
AGRI	2012	Organic and Sustainable Agriculture	
AGRI	6103	Precision Agriculture	
BIOL	2803	Environmental Science	
BIOL	2801	Environmental Science Lab	
BIOL	4254	General Microbiology	
BIOL	6534	Genetics	
CHEM	1114	General Chemistry I	
MATH	xxxx		
If full-time student, may cross register at AU for equestrian classes			

Also required - One unit of physical education.

#### PLANT SCIENCE CONCENTRATION TYPICAL FOUR-SEMESTER PROGRAM

First			
ANSC	1204	Introduction to Animal Science	4
AGRI	1002	Introduction to Agriculture	2
BIOL	1304	Botany	4
	xxx3	English Elective as advised	3
	xxx3	General Education Elective (Math Recommended)	3
			16

Second			
AGRI	2012	Organic and Sustainable Agriculture	2
AGPS	1103	Soils	3
	xxx3	Agricultural Elective	3
	xxx3	General Education Elective	3
	xxx3	Business Elective	3
			14

**Third**

AGPS	2113	Field and Forage Crops	3
XXXX	xxx3	Ag. Elective	3
AGEC	3213	Farm and Rural Business Management	3
AGPS	5103	Sustainable Vegetable Production	3
	xxx3	Agricultural Elective	3
	xxx3	General Education Elective	3
			17

**Fourth**

AGEC	4303	Rural Business Finance	3
AGRI	4002	Seminar/Capstone Project	2
	xxxx	Ag or Transfer-related Elective	3-4
	xxxx	Ag or Transfer-related Elective	3-4
	xxx3	General Education Elective	3
			14-16

**Suggested Agriculture or Transfer-related Electives:**

AGPS	3004	Soil Fertility	
AGPS	5003	IPM	
AGRI	6103	Precision Agriculture	
ANSC	2102	Dairy Cattle Reproduction and A.I. Techniques	
ANSC	2114	Domestic Animal A&P	
ANSC	3003	Feeds & Nutrition	
ANSC	3202	Dairy Management Analysis	
ANSC	3204	Dairy Cattle Production III	
ANSC	3223	Dairy Calf Management	
BIOL	2803	Environmental Science	
BIOL	2801	Environmental Science Lab	
BIOL	4254	General Microbiology	
BIOL	6534	Genetics	
CHEM	1114	General Chemistry I	
MATH	xxxx		

If full-time student, may cross register at AU for equestrian classes

Also required - One unit of physical education.

**GRADUATION REQUIREMENTS**

Students must:

- successfully complete the prescribed sequence of courses
- achieve a minimum index of 2.0 in core courses
- achieve a minimum index of 2.0 overall
- be recommended by the department faculty

## PROGRAMS AT ALFRED STATE

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### AIR CONDITIONING & HEATING TECHNOLOGY

#### AOS Degree - Code #0464

George H. Richardson, Program Coordinator  
Email address: richargh@alfredstate.edu

The air conditioning and heating courses deal with all phases of residential and commercial installation, maintenance, troubleshooting, and repair. It includes forced air, hot water and steam heating, gas and oil burner systems, along with hands-on air conditioning and heat pump technology.

The plumbing aspect of the program provides instruction in the basic skills required by the plumber in the construction of residential housing and commercial buildings. The program ranges from the installation of waste and sewage lines to the installation of potable water lines and plumbing fixtures.

The program provides the necessary theory connected with plumbing and HVAC, as well as on-the-job training experience overseen by tradesmen.

Students will take the National Refrigerant Handling Certification Course and Test and the National ARI HVAC (Air Conditioning & Refrigeration Institute Heating Ventilation & Air Conditioning) Competency Test.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Accurately measure and layout PHVAC (plumbing, heating, ventilation, and air conditioning) projects.
- Apply safe practices to hand tools, power tools, and the environment.
- Select and apply the various materials used in the PHVAC trade.
- Perform appropriate trade related math including interpretation of charts and graphs.
- Perform installation service and troubleshooting of fuels, emergency sources, and systems used in residential and commercial PHVAC.
- Effectively communicate orally.
- Use the computer to access equipment information and operating specifications.
- Effectively communicate in writing.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State air conditioning and heating technology graduates may enter directly into the technology management BBA degree program.

### OCCUPATIONAL OPPORTUNITIES

- Maintenance Personnel or Supervisor
- Sheet Metal Fabricator
- Sales Representative
- Pipe Fitter
- Sprinkler Installer
- HVAC Mechanic or Troubleshooter
- Water or Sewer Plant Operator
- Private Contractor

### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 90 percent are employed; 10 percent transferred to continue their education.

### RELATED PROGRAMS

Building Trades: Building Construction  
Masonry

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra

### TECHNICAL STANDARDS

Applicants in the air conditioning and heating technology program must meet the following physical requirements:

- Must be able to lift 50 pounds to shoulder height.
- Must be able to perform safely in the laboratory.
- Must be able to communicate orally with a person 20 feet away.
- Must be able to climb a ladder and/or able to climb, un-aided, onto and off of equipment using three points of contact.
- Must be able to stand for long periods of time.
- Must be able to visually read from a blueprint or drawing.
- Must be able to hear a backup warning alarm.

**Air Conditioning & Heating Technology - AOS Degree**

**TYPICAL FOUR-SEMESTER PROGRAM**

<b>First</b>			
BLCT	3413	Blueprint Reading - Building Construction	3
BLCT	3423	Pipe Fitting - Math Estimating	3
BLCT	3433	Copper Pipe & Tubing, Water System Design & Installation	3
BLCT	3443	Copper Pipe & Tubing, Water System Design & Installation	3
BLCT	3453	Plumbing Trades Safety, History and Drain Piping	3
BLCT	3463	Water Heaters & Public & Private Portable Water Systems	3
			<b>18</b>

<b>Second</b>			
BLCT	4143	Basic House Wiring - Forced Air Heating Comfort Conditions	3
BLCT	4153	Sheet Metal Fabrication	3
BLCT	4163	Mid & High Efficiency Furnaces - Alternate Warm Air Heat Sources	3
BLCT	4173	Sheet Metal Air Distribution Systems and Venting	3
BLCT	4183	Sheet Metal Trade Safety - Drawing for Sheet Metal Layout	3
BLCT	3473	Heating Fuels - Combustion Theory & Troubleshooting	3
			<b>18</b>

<b>Third</b>			
BLCT	3483	Electrical Fundamentals	3
BLCT	3493	Forced Air Furnace Controls	3
BLCT	3503	Hydronic Components, Circulating Pumps & Heat Sources	3
BLCT	3513	Hydronic Controls & Motors	3
BLCT	3523	Hydronic Fundamentals & Hydronic Heat Sources	3
BLCT	3533	Hydronic Piping Systems, Radiant Floor Heating & Steam Heating	3
			<b>18</b>

<b>Fourth</b>			
BLCT	4203	Air Conditioning Components & Installation	3
BLCT	4213	AC Fundamentals	3
BLCT	4223	Air Conditioning Performance & Troubleshooting and Heat Pumps	3
BLCT	4233	Heat Loss and Heat Gain	3
BLCT	4243	Refrigeration Handling Certification	3
BLCT	4253	Residential Duct System Design	3
			<b>18</b>

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

### ARCHITECTURAL TECHNOLOGY

#### AAS Degree - Code #0443

David I. Carli, Program Coordinator  
Email address: carlidi@alfredstate.edu

The AAS in architectural technology program offers a concentration of courses in architectural design and graphic communication as well as material in related areas such as structures, mechanical systems, professional practice, and construction technology.

The program seeks to expose students to a broad range of skills and basic data relevant to the building process. This broad exposure gives students the ability to be conversant with and/or seek employment with all related professions within the architectural field. Students are required during the two years of study to apply the skills or background knowledge gained in these "exposure" courses to actual problem-solving situations. Thus they develop a better understanding of the complexity, interrelationships, and proper sequencing of the building process.

As a response to the impact of computers on all areas of the architectural profession, a series of computer courses has been developed which introduces the student to a variety of 2D & 3D building information modeling and animation applications.

This program places graduates as technicians in the architecture professions. However, each year some students transfer into the BS program or professional degree programs in architecture and related fields. From 2013/14 on, graduates may also apply for transfer into the department's new BArch program.

A laptop computer is required for students entering the architectural technology program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

The AAS and BS in architectural technology and the BArch have shared course work in the first two years of each program. Because of this alignment, the AAS and BS in architectural technology are required to meet the same NAAB 'Student Performance Criteria' that apply to the BArch program that was found 'eligible for candidacy' by the NAAB on April 30, 2013, and scheduled for the 'initial candidacy' visit for spring 2014. These Student Performance Criteria are laid out on pp.

21-25 of the 2009 Conditions for Accreditation by the NAAB. The full text, as well as the NAAB 2012 Procedures for Accreditation, Amended, may be found at

[http://www.naab.org/documents/home\\_origin.aspx?path=Public+Documents](http://www.naab.org/documents/home_origin.aspx?path=Public+Documents). See also 'EDUCATIONAL REALMS & STUDENT PERFORMANCE CRITERIA' in the catalog entry for the BArch program.

#### PROGRAM EDUCATIONAL OBJECTIVES

- Program educational objectives were established with the assistance of the Advisory Board and are reviewed periodically. The architectural technology program produces graduates who will be able to:
- demonstrate a mastery of the knowledge, techniques, skills, and modern tools of architectural practice;
- apply current knowledge and adapt to emerging applications of mathematics, science, engineering, and technology related to the built environment;
- define, analyze, and respond to architectural problems and evaluate results using graphic thinking to improve design processes;
- show creativity in the design and integration of building systems and components through three-dimensional exploration and visualization techniques;
- demonstrate the ability to function effectively in team situations;
- identify, analyze, and solve technical problems related to building design and site development;
- demonstrate the ability to communicate effectively in oral, written, and graphic form;
- understand professional, ethical, legal, and social responsibilities related to architectural practice;
- show respect for diversity and a knowledge of human behavior related to contemporary professional, societal, and global issues;
- recognize the need for and be able to engage in lifelong learning and self-evaluation;
- demonstrate a commitment to quality, timeliness, and continuous improvement.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State architectural technology AAS graduates may enter directly into either the architectural technology BS, the architecture BArch or technology management BBA degree program. Please note that a minimum combined GPA of 3.0 is required in Alfred State studio courses (ARCH 1184, ARCH 2394, ARCH 3104, and ARCH 4304) to guarantee admission into ARCH 5306 - Design

Studio 3. A portfolio review is required of all continuing students not meeting this requirement.

**TRANSFER OPPORTUNITIES**

Graduates may go directly into the work force or may continue in Alfred State's BS program in Architectural Technology. Graduates may also transfer to professional or pre-professional degree programs at other institutions. Transfer is contingent on program and institution. Graduates have transferred to various schools of architecture and engineering in the United States. Please note that a minimum combined GPA of 3.0 is required in Alfred State studio courses (ARCH 1184, ARCH 2394, ARCH 3104, and ARCH 4304) to guarantee admission into ARCH 5306 - Design Studio 3. A portfolio review is required of all continuing students not meeting this requirement.

**OCCUPATIONAL OPPORTUNITIES**

- Architect (after successfully meeting state requirements)
- Computer Modelers
- Computer Animators
- Detailers
- Specification Writers
- Estimators
- Building Inspectors
- Interior Designers
- Sales Representatives
- Shop Drawing Drafters

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 100 percent transferred to continue their education.

**RELATED PROGRAMS**

- Construction Technology
- Interior Design

**CERTIFICATION OR LICENSURE**

The degree may be accepted for credit toward professional licensure in New York State.

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2/ Trigonometry  
 Recommended: Physics

**Architectural Technology - AAS Degree**

A typical day might be one or two one-hour lectures and a two-hour studio in the freshman year. In the second year some courses use three-hour studios.

**TYPICAL FOUR-SEMESTER PROGRAM**

First			
ARCH	1184	Design Fundamentals 1*	4
ARCH	1013	Introduction to Design	3
FNAT	1303	Architectural History I	3
MATH	1034	College Algebra of Functions or Higher**	4
COMP	1503	Freshman Composition	3
HPED	xxx1	Physical Education Elective	1
			<b>18</b>

Second			
ARCH	2394	Design Fundamentals 2*	4
ARCH	2014	Computer Visualization	4
GEWC	xxx3	Gen Ed Elective/Hist. of West. Civ.	3
MATH	2043	College Trigonometry or Higher**	3
PHYS	1024	General Physics I	4
			<b>18</b>

Third			
ARCH	3104	Design Studio 1*	4
ARCH	3014	Construction Technology 1	4
ARCH	3003	Environmental Controls 1	3
SOCI	1163	General Sociology***	3
MATH	1063	Technical Calculus I	3
			<b>17</b>

Fourth			
ARCH	4304	Design Studio 2*	4
ARCH	4014	Construction Technology 2	4
CIVL	4104	Structural Technology	4
ARCH	4013	Municipal Codes & Regulations	3
SPCH	1083	Effective Speaking	3
			<b>18</b>

General Notes:  
 Students must complete at least one course from each of five SUNY General Education Silos.

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Math through technical calculus I must be completed. Students who start at a higher level in math must meet all SUNY general education and campus liberal arts and sciences course credit requirements for graduation.

Minimum of "C" is required for ARCH 1184, ARCH 2394, ARCH 3104, and ARCH 4304.

\* Minimum combined GPA of 3.0 is required in Alfred State studio courses (ARCH 1184, ARCH 2394, ARCH 3104, and ARCH 4304) to guarantee admission into ARCH 5306 - Studio 3. A portfolio review is required of all continuing students not meeting this requirement.

\*\* If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

\*\*\* May substitute HIST 1113, HIST 1143, HIST 2153, or PLSC 1043. Students planning to continue in the BS - architectural technology program should consult with their adviser regarding Gen. Ed./LAS requirements.

## PROGRAMS AT ALFRED STATE

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### ARCHITECTURAL TECHNOLOGY

#### BS Degree - Code #1452

David I. Carli, Program Coordinator  
Email address: carlidi@alfredstate.edu

This program is designed to provide graduates with a comprehensive architectural education combining a philosophic perspective of building design with an applied technical knowledge of construction systems and materials, acquired in a technically oriented studio structure. A variety of graphic tools and techniques are explored in the studio sequence, including freehand drawings, physical models, 2D and 3D building information modeling, and animation applications. Students are exposed to - and use throughout the program - a wide range of software programs (such as Adobe Photoshop, AutoCAD, and Revit), graphics communication techniques, and problem-solving skills.

A laptop computer is required for students entering the architectural technology program. See laptop specifications at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

The AAS and BS in architectural technology and the BArch have shared course work in the first two years, while the BS and BArch have some shared course work in the third and fourth years. Because of this alignment, the AAS and BS in architectural technology are required to meet the same NAAB 'Student Performance Criteria' that apply to the BArch program that was found 'eligible for candidacy' by the NAAB on April 30, 2013, and scheduled for the 'initial candidacy' visit for spring 2014. These Student Performance Criteria are laid out on pp. 21-25 of the 2009 Conditions for Accreditation by the NAAB. The full text, as well as the NAAB 2012 Procedures for Accreditation, Amended, may be found at [http://www.naab.org/documents/home\\_origin.aspx?path=Public+Documents](http://www.naab.org/documents/home_origin.aspx?path=Public+Documents). See also 'EDUCATIONAL REALMS & STUDENT PERFORMANCE CRITERIA' in the catalog entry for the BArch program.

#### FACILITIES

The facilities consist of four laptop-ready, 20-station freshman/sophomore studios, and three advanced 15-station "imaging" studios for the junior and senior level. Peripheral devices such as scanners, color printers/plotters, and digital camera equipment are available. A School-wide 3D Printing Fabrication Laboratory is in preparation. Baccalaureate students have 24-hour access to studios.

### ARTICULATION AGREEMENTS

Articulation agreements for some courses in this program are in place with:

- SUNY College of Technology at Delhi
- Dutchess County Community College
- Erie Community College
- Finger Lakes Community College
- Hudson Valley Community College
- Onondaga Community College
- Orange County Community College
- SUNY College of Technology at Morrisville

### TRANSFER OPPORTUNITIES

Graduates wishing to continue their education may choose to apply to master's programs in architecture or related disciplines. The lengths of such programs varies and depends on institutional requirements.

### OCCUPATIONAL OPPORTUNITIES

- Architect (after successfully meeting state requirements)
- Construction Manager
- Building Inspector
- 3D Modeler/Animator
- Computer Illustrator
- Detailer
- Specification Writer
- Estimator
- Model Builder

### EMPLOYMENT STATISTICS

Employment and transfer rate of 97 percent – 65 percent are employed; 32 percent transferred to continue their education.

### RELATED PROGRAMS

Construction Management Engineering  
Technology

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/  
Trigonometry, SAT and/or ACT  
scores with a recommended  
combined SAT score of 1,000  
(critical reading and math) or a  
composite ACT score of 21.

Recommended: Pre-calculus, Physics

### TRANSFER STUDENTS

All transfer students applying for entrance into the BS program must submit a portfolio.

Portfolio must include six (6) to eight (8) examples of the student's best work. Examples should be copies (not originals) of design work including any



work in the two- or three-dimensional visual arts done in academic settings, practice, or as personal work. All work must include the name of applicant, date of work, and an indication of whether the work was an academic, professional, or personal project. If the item is part of a group effort, the specific role of the applicant should be included.

All portfolio material must be bound. Portfolio overall size must not be more than 10" x 12" (25 cm x 30 cm) and 1" (2.5 cm) thick. The applicant's name must be clearly visible on the binding. The use of slides is discouraged.

The portfolio should be submitted by mail in a padded envelope to:

Admissions Office  
Alfred State  
10 Upper College Drive  
Alfred, NY 14802

The department will keep portfolio materials unless a prepaid, self-addressed return envelope is mailed with the applicant's portfolio. Portfolios held by the department will be discarded if not retrieved by the applicant in one semester.

**GRADUATION REQUIREMENTS**

Successfully complete all courses in the prescribed eight-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

As part of the graduation requirements for the Bachelor of Science degree in architectural technology, students must complete a portfolio according to the following guidelines:

- The portfolio must contain a minimum of six (6) examples of creative academic work. These examples should demonstrate achievements as a designer. A minimum of two (2) examples must be from studio class projects in the last two years of the program. A maximum of two (2) examples may be of non-graphic work (example: written work).
- Each example will be accompanied by a short description of the project and solution, and include the name of the class the project was produced for. If the item is part of a group effort, the specific role of the student should be included.
- Completed portfolios must be submitted digitally in Portable Document Format (PDF) on a CD or as directed by the department chair.
- Portfolios will be evaluated to determine whether they should be graded as "High Pass," "Pass," or "Fail." This assessment will appear on the student's permanent Alfred State transcript.

- The completed portfolio must be submitted to the Department of Architecture and Design Office by April 1. This is an absolute deadline; no portfolios will be accepted after the April 1 deadline. Evaluation will be done on a yearly basis by faculty reviewers. All decisions are final.

**Evaluation Criteria**

- Work in student portfolios should demonstrate:
- Understanding of the philosophy of building design and problem solving skills, through original and thorough design thinking;
- Ability to legibly communicate design ideas in graphic and written form;
- A working knowledge of a variety of construction systems and materials and how they affect building design;
- Competence in the use of graphic tools and techniques including freehand drawing, computer-aided drafting, physical models, and computer imaging.

**SEMESTER ABROAD OPTION**

Alfred State has an agreement with Sant'Anna Institute (formerly Sorrento Lingue Institute) in Sorrento, Italy, to offer an optional semester abroad to its students. Learn more at [www.alfredstate.edu/study-abroad/semester-in-italy#Architecture-Studies](http://www.alfredstate.edu/study-abroad/semester-in-italy#Architecture-Studies).

**Architectural Technology - BS Degree**

A typical day consists of two, one-hour lectures and a two-hour studio in the freshman and sophomore years. At the junior and senior levels, three-hour studios are required.

**TYPICAL EIGHT-SEMESTER PROGRAM**

First			
ARCH	1184	Design Fundamentals 1*	4
ARCH	1013	Introduction to Design	3
FNAT	1303	Architectural History I	3
MATH	1034	College Algebra of Functions or Higher**	4
COMP	1503	Freshman Composition	3
HPED	xxx1	Physical Education Elective	1
			18
Second			
ARCH	2394	Design Fundamentals 2*	4
ARCH	2014	Computer Visualization	4
GEWC	xxx3	Gen Ed Elective/Hist. of West. Civil	3
MATH	2043	College Trigonometry or Higher**	3
PHYS	1024	General Physics I	4
			18

## PROGRAMS AT ALFRED STATE

Third			
ARCH	3104	Design Studio 1*	4
ARCH	3014	Construction Technology 1	4
ARCH	3003	Environmental Controls 1	3
SOCI	1163	General Sociology	3
MATH	1063	Technical Calculus I	3
			17

Fourth			
ARCH	4304	Design Studio 2*	4
ARCH	4014	Construction Technology 2	4
CIVL	4104	Structural Technology	4
ARCH	4013	Municipal Codes & Regulations	3
SPCH	1083	Effective Speaking	3
			18

### General Notes:

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Math through technical calculus I must be completed. Students who start at a higher level of math must meet SUNY general education and campus liberal arts and sciences course credit requirements for graduation.

\*Minimum combined GPA of 3.0 is required in Alfred State studio courses (ARCH 1184, ARCH 2394, ARCH 3104, and ARCH 4304) or comparable courses at another institution to guarantee admission into ARCH 5306 - Design Studio 3. A portfolio review is required of all continuing or transfer students not meeting this requirement.

\*\* If not required, take LAS elective to complete degree requirements of 3 or 4 credits, otherwise take free elective.

Fifth			
ARCH	5306	Design Studio 3***	6
SOCI	5213	Science, Technology & Society	3
FNAT	5303	Architectural History II	3
	xxx3	Gen. Education Elective	3
			15

Sixth			
ARCH	6306	Design Studio 4***	6
	xxx4	Gen. Education/LAS Elective	4
	xxx3	Gen. Education/LAS Elective - Humanities	3
CIVL	5213	Foundation & Concrete Construction	3
			16

Seventh			
ARCH	7306	Design Studio 5***	6
ARCH	7003	Sustainable Building Design	3
COMP	5703	Technical Writing II	3
MATH	7113	Economic Analysis	3
			15

Eighth			
ARCH	8306	Design Studio 6***	6
ARCH	8003	Professional Practice 2	3
	xxx3	Gen. Ed./LAS Elective	3
	xxx3	Gen. Ed./LAS Elective (GEFL OR GEOW)	3
			15

### General Notes:

Students must complete at least one course from seven of the 10 SUNY General Education Silos.

\*\*\*Minimum of "C" is required for ARCH 5306, ARCH 6306, ARCH 7306 and ARCH 8306.

**ARCHITECTURE**

**BArch Degree– Code #0135**

Rex Simpson, Program Coordinator  
 Email address: [simpsora@alfredstate.edu](mailto:simpsora@alfredstate.edu)

The Bachelor of Architecture program at Alfred State educates well-rounded, highly creative graduates who will be able to contribute to the world through meaningful and inspiring architecture.

Building on the BS program’s established strengths in architectural technology and civic engagement, the BArch program strives to achieve a unique identity by integrating an active immersion in the liberal arts/humanities with three additional foci:

- Vigorous training in design and the poetics of construction – aimed at buildings and environments that inspire and uplift their occupants, users, and the contexts they are part of, while manifesting the latent beauty of structural systems and building materials, and integration with nature;
- Solid knowledge of sustainability, construction technology and integrated project delivery – aimed at buildings that are well constructed, technically sound, that marshal material resources economically and sustainably, and are healthy to occupy; and
- Civic engagement and active involvement in urban renewal/social innovation projects – aimed at exploration and advocacy through dedicated urban design, historic preservation/adaptive reuse, and housing studios.

Students will be encouraged to custom-tailor their studies through elective concentrations related to architectural practice, such as business, construction management, digital media and animation, or interior design. Elective courses may be taken in other departments at Alfred State and students may also cross-register for courses at Alfred University.

Upon successful completion of the BArch degree, graduates may begin an internship and the other professional steps leading to licensure as a registered, practicing architect.

A laptop computer is required of each entering student to enable the use of cutting-edge, industry-standard software. See laptop specifications at <http://www.alfredstate.edu/required-laptops>.

**NAAB STUDENT PERFORMANCE CRITERIA**

On April 30, 2013, the NAAB, the National Architectural Accrediting Board, accepted the BArch Program at Alfred State as ‘eligible for candidacy,’ and scheduled the next step, the visit for ‘initial candidacy,’ for Spring 2014.

The BArch program is required to meet the ‘Student Performance Criteria’ as laid out on pp. 21-25 of the 2009 Conditions for Accreditation by the NAAB. The 2009 Conditions for Accreditation, as effective April 1, 2010, apply to all accreditation actions or visits scheduled to take place after January 1, 2011, including visits for initial candidacy.

The following passages are excerpted from the 2009 Conditions for Accreditation by the NAAB. The full text as well as the 2012 Procedures for Accreditation, Amended, may be found at [http://www.naab.org/documents/home\\_origin.aspx?path=Public+Documents](http://www.naab.org/documents/home_origin.aspx?path=Public+Documents).

**EDUCATIONAL REALMS & STUDENT PERFORMANCE CRITERIA**

The accredited degree program must demonstrate that each graduate possesses the knowledge and skills defined by the criteria set out below. The knowledge and skills are the minimum for meeting the demands of an internship leading to registration for practice.

The school must provide evidence that its graduates have satisfied each criterion through required coursework. If credits are granted for courses taken at other institutions or online, evidence must be provided that the courses are comparable to those offered in the accredited degree program.

The criteria encompass two levels of accomplishment:

- Understanding — The capacity to classify, compare, summarize, explain and/or interpret information.
- Ability — Proficiency in using specific information to accomplish a task, correctly selecting the appropriate information, and accurately applying it to the solution of a specific problem, while also distinguishing the effects of its implementation.

For the purpose of accreditation, graduating students must demonstrate understanding or ability as defined below in the Student Performance Criteria (SPC):

## PROGRAMS AT ALFRED STATE

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The SPC are organized into realms to more easily understand the relationships between individual criteria.

### **Realm A: Critical Thinking and Representation:**

Architects must have the ability to build abstract relationships and understand the impact of ideas based on research and analysis of multiple theoretical, social, political, economic, cultural and environmental contexts. This ability includes facility with the wider range of media used to think about architecture including writing, investigative skills, speaking, drawing and model making.

### **Realm B: Integrated Building Practices,**

**Technical Skills and Knowledge:** Architects are called upon to comprehend the technical aspects of design, systems and materials, and be able to apply that comprehension to their services. Additionally they must appreciate their role in the implementation of design decisions, and the impact of such decisions on the environment.

### **Realm C: Leadership and Practice:**

Architects need to manage, advocate, and act legally, ethically and critically for the good of the client, society and the public. This includes collaboration, business, and leadership skills.

## **ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2/Trigonometry with an 86 or above average plus high school pre-calculus or a fourth-year math for New York State high school graduates. Students must submit a standardized test score (SAT and/or ACT) with a recommended combined SAT score of 1,100 (critical reading and math) or a composite ACT score of 24. Physics is recommended.

## **PORTFOLIO REQUIREMENTS**

Prior to acceptance into the Bachelor of Architecture program, each applicant must submit a portfolio for review and consideration of her/his acceptance.

Through the portfolio, the Department hopes to get a sense of who an applicant is as a creative individual: their spatial imagination, what is motivating them (expressed through art work, drawings, sketches, models, ...), how they express themselves, how they explore the world through two- and three-dimensional media.

Applicants should include 10 to 20 examples of their best creative work. They should be color copies (not originals) of art and design efforts, including two- or three-dimensional visual art,

done either as personal projects or in an academic setting. Inclusion of some freehand drawings is strongly encouraged. Pages from student's sketchbook are acceptable too. Each portfolio page needs to list (in small, legible font) your name; the medium used; the date of the work's completion; the dimensions of the original; and whether done as a personal project or in an academic setting. If part of a group effort, you need to identify the other group members and state your specific role.

Included among the portfolio's 10 to 20 samples of creative work should be two drawings specifically responding to the guidelines below, in soft pencil, emphasizing light and shadows, and contrast:

- One is an abstract composition that should include two 'walls,' a 'cube,' a 'cylinder' and a 'sphere.' Their lengths and heights, diameters and sizes, are up to you. Out of these elements, create an interesting composition that gives a hint of your spatial imagination.
- The other is a drawing from life of either a plant (tree, bush, or part thereof, as e.g. branches) or an animal of your choice (or a portion thereof, e.g. its head or torso, or legs). This drawing should reveal something about your observational and recording skills.

All portfolio material should be in a flat binder of an overall size not more than 10" x 12" (25 cm x 30 cm) and max. 1" (2.5 cm) thick. Do not submit slides or digital files. Your name must be clearly visible on the binder. On the first page inside you should state that you are the author of the work presented (except for works done as group project - which you need to clearly identify), followed by your name, home address, contact information, and the school you currently attend.

The portfolio should be submitted by mail in a padded envelope to: Alfred State, Admissions Office, 10 Upper College Drive, Alfred, NY 14802.

Unless a prepaid, self-addressed return envelope is mailed with the applicant's portfolio, the Architecture and Design Department will keep the submission. Portfolios held by the department will be discarded within one semester unless retrieved by the applicant.

## **ACCREDITATION/CERTIFICATION**

Alfred State is accredited by the Middle States Commission on Higher Education (3624 Market St., Philadelphia, PA 19104; (215) 662-5606). The

Department has initiated the process of accreditation by the NAAB (the National Architectural Accrediting Board), which on April 30, 2013, conferred on the BArch Program the 'Eligibility for Candidacy' Status. The next step is the 'Initial Candidacy Visit' in Spring 2014. We hope to achieve full accreditation for all incoming freshmen at the earliest possible time, i.e. following the 'Full Accreditation Visit' in the Fall 2018. After the NAAB assesses the first graduating cohort's and all other years' work as worthy, it confers full accreditation on the BArch Program retroactively for January 2018, to include that first cohort.

### **FEATURES & FACILITIES**

BArch students have 24 hr access to their dedicated, laptop-ready studio spaces. Peripheral devices such as scanners, color printers/plotters, and digital camera equipment are available. A School-wide 3D Printing Fabrication Laboratory is in preparation.

### **ARTICULATION AGREEMENTS**

Articulation agreements for some courses in this program are in place with:

- SUNY College of Technology at Delhi
- Dutchess County Community College
- Erie Community College
- Finger Lakes Community College
- Hudson Valley Community College
- Onondaga County Community College
- Orange County Community College
- SUNY College of Technology at Morrisville

### **GRADUATION REQUIREMENTS**

Successfully complete all courses in the prescribed ten-semester program at a minimum cumulative index of 2.5, which is equivalent to a "C+" average.

As part of the graduation requirements for the Bachelor of Architecture, students must complete a portfolio according to the following guidelines:

- The portfolio must contain a minimum of eight (8) examples of creative academic work. These examples should demonstrate achievements as a designer. A minimum of three (3) examples must be from studio class projects in the last two years of the program. A maximum of two (2) examples may be of non-graphic work (example: written work).
- Each example will be accompanied by a short description of the project and solution, and include the name of the class the project was produced for. If the item is part of a group effort, the specific role of the student should be included.

- Completed portfolios must be submitted digitally in Portable Document Format (PDF) on a CD or as directed by the department chair.
- Portfolios will be evaluated to determine whether they should be graded as "High Pass," "Pass," or "Fail." This assessment will appear on the student's permanent Alfred State transcript.
- The completed portfolio must be submitted to the Department of Architecture and Design Office by April 1. This is an absolute deadline; no portfolios will be accepted after the April 1 deadline. Evaluation will be done on a yearly basis by faculty reviewers. All decisions are final.

### **EVALUATION CRITERIA**

Work in student portfolios should demonstrate:

- A sophisticated understanding of building design; problem solving skills; and thorough design thinking;
- The ability to communicate legibly design ideas in graphic and written form;
- A working knowledge of a variety of construction systems and materials and how they affect building design;
- Competence in the use of graphic tools and techniques including freehand drawing, computer-aided drafting, physical models, and computer imaging.

### **CAREER OPPORTUNITIES**

A wide range of activities are open to graduates of this accredited degree: intern architect, practicing architect (after successfully meeting state registration requirements), or practitioner in related sub fields as varied as sustainable architecture, urban design, interior architecture, adaptive reuse and historic preservation, building construction management, hospitality design, lighting design, acoustical design, religious building design, and others.

### **POST GRADUATE STUDIES**

Graduates wishing to continue their education may choose to apply at another institution to master's or doctoral programs in architecture or numerous related disciplines.

### **SEMESTER ABROAD OPTION**

Alfred State has an agreement with Sant'Anna Institute (formerly Sorrento Lingue Institute) in Sorrento, Italy, to offer an optional semester abroad to its students. Learn more at [www.alfredstate.edu/study-abroad/semester-in-italy#Architecture-Studies](http://www.alfredstate.edu/study-abroad/semester-in-italy#Architecture-Studies).

## PROGRAMS AT ALFRED STATE

### Architecture - BArch Degree

In the freshman and sophomore years, a typical day consists of two one-hour long lectures and a two-hour studio. At the junior and senior and fifth year levels, the studio meeting times are three hours.

First			
ARCH	1184	Design Fundamentals 1*	4
ARCH	1013	Introduction to Design	3
FNAT	1303	Architectural History I	3
COMP	1503	Freshman Composition	3
MATH	1054	Pre-Calculus	4
			17

Second			
ARCH	2394	Design Fundamentals 2*	4
ARCH	2014	Computer Visualization	4
MATH	1063	Technical Calculus I	3
HIST	1113	History of Western Civilization	3
PHYS	1024	General Physics I	4
			18

Third			
ARCH	3104	Design Studio 1*	4
ARCH	3014	Construction Technology 1	4
ARCH	3003	Environmental Controls 1	3
	xxx3	Gen. Ed. Elective/Foreign Language	3
SOCI	1163	General Sociology	3
			17

Fourth			
ARCH	4304	Design Studio 2*	4
ARCH	4014	Construction Technology 2	4
ARCH	4013	Municipal Codes & Regulations	3
CIVL	4104	Structural Technology	4
SPCH	1083	Effective Speaking	3
			18

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations. Math through technical calculus I must be completed. Students who start at a higher level of math must meet all SUNY general education and campus liberal arts and sciences course credit requirements for graduation.

\*Minimum combined GPA of 3.0 is required in Alfred State studio courses (ARCH 1184, ARCH 2394, ARCH 3104, and ARCH 4304) or comparable courses at another institution to guarantee admission into ARCH 5306-Studio 3. A portfolio review is required of all continuing or transfer students not meeting this requirement.

Fifth			
ARCH	5306	Design Studio 3**	6
FNAT	5303	Architectural History II	3
	xxx3	Concentration Elective	3
SOCI	5213	Science, Technology & Society	3
			15

Sixth			
ARCH	6306	Design Studio 4**	6
CIVL	5213	Foundation & Concrete Construction	3
	xxx3	Concentration Elective	3
	xxx3	Gen. Ed. Elective/Humanities	3
			15

Seventh			
ARCH	7306	Design Studio 5**	6
ARCH	7003	Sustainable Building Design	3
	xxx3	Concentration Elective	3
COMP	5703	Technical Writing II	3
			15

Eighth			
ARCH	8306	Design Studio 6**	6
ARCH	8003	Professional Practice 2	3
	xxx3	Concentration Elective	3
	xxx3	Gen. Ed. Elective/American History	3
			15

Ninth			
ARCH	8716	Design Studio 7**	6
ARCH	8713	Modern Arch. Theory	3
ARCH	8753	Adv. Structural Concepts	3
	xxx3	Concentration Elective	3
			15

Tenth			
ARCH	8776	Design Studio 8**	6
ARCH	8793	Professional Development	3
	xxx3	Concentration Elective	3
			12

#### GENERAL NOTES:

Students must complete at least one course from seven of the 10 SUNY General Education silos.

\*\*Minimum of "C+" is required for ARCH 1184, ARCH 2394, ARCH 3104, ARCH 4304, ARCH 5306, ARCH 6306, ARCH 7306, ARCH 8306, ARCH 8716 and ARCH 8776.

Also required - One unit of physical education.

**AUTOBODY REPAIR**

**AOS Degree – Code #0453**

This specialization includes 1,800 hours of practical experience and classroom training applicable to the autobody repair field. Laboratory experience ranges from spot repair, total wreck repair, specialized paint jobs, estimating, and rust repair to frame straightening.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate a focused, coherent, organized written report.
- Perform mathematic calculations required for entry-level automotive employment.
- Demonstrate an ability to apply written instructions and specifications relevant to their work environment.
- Demonstrate critical thinking and program solving skills to work with sheet metal repair.
- Demonstrate ability to identify different types of frame damage.
- Demonstrate painting skills for B/C and single stage painting.
- Demonstrate the ability to repair frame and structure collision damage.
- Demonstrate the ability to identify, evaluate, remove and replace various mechanical components.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State autobody repair graduates may enter directly into the technology management BBA degree program.

**OCCUPATIONAL OPPORTUNITIES**

- Auto Body Repair Specialist
- Automotive Refinisher
- Body Shop Owner
- Frame Straightening Specialist
- Shop Foreman
- Service Manager
- Wheel Alignment Specialist

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 82 percent are employed; 18 percent transferred to continue their education.

**RELATED PROGRAMS**

- Automotive Service Technician
- Heavy Equipment: Truck & Diesel Technician
- Mechanical Engineering Technology
- Motorsports Technology
- Welding Technology

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Recommended: Algebra

**TECHNICAL STANDARDS**

Applicants in the autobody repair program must meet the following physical requirements:

- Must be able to perform safely in the shop.
- Must be able to lift 50 pounds to eye level.
- Must be able to communicate orally with a person six-10 feet away.
- Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
- Must have a valid motor vehicle license and be able to drive a standard transmission vehicle.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to understand information found in service repair manuals and use diagnostic flow charts.
- Must meet qualifications for a NYS driver’s license.

**CERTIFICATION OR LICENSURE**

Graduates may take Automotive Service Excellence (ASE) certification exams. Graduates are also eligible for New York State inspection certification. Students may take the ASE exam for certification in refrigerant recycling & recovery during their senior year.

**Autobody Repair - AOS Degree**

**TYPICAL FOUR-SEMESTER PROGRAM**

First			
AUTO	1326	Body Welding	6
AUTO	1313	Wrecker Operation & Estimating	3
AUTO	1306	Rust Repair	6
AUTO	1343	Refinishing Basics	3
			<b>18</b>
Second			
AUTO	2309	Brakes, Suspension & Structural Analysis	9
AUTO	1344	Reconditioning & Mechanical Components	4
AUTO	2365	Chassis Electrical	5
			<b>18</b>
Third			
AUTO	3819	Auto Body Skills/Computerized Estimating	9
AUTO	3809	Inspection, Gen. Alignment, Air Conditioning, Cooling and Heating	9
			<b>18</b>
Fourth			
AUTO	4639	Major Collision Repair	9
AUTO	4629	Major Refinishing	9
			<b>18</b>

## **PROGRAMS AT ALFRED STATE**

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Students successfully completing autobody repair may wish to remain at Alfred in the automotive service technician, heavy equipment: truck & diesel technician, or motorsports programs another one-and-one-half years to receive a second degree upon successful completion of course. This requires department chair's approval.

### **GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.



**AUTOMOTIVE SERVICE TECHNICIAN**

**AOS Degree – Code #0451**

This specialization includes 1,800 hours of practical and classroom training in general automotive repair geared to automotive dealership and independent garage practice. Students receive experience on all types of automobiles, including domestic, imported, gasoline, diesel, and alternative fuels. All systems of the automobile are covered in the instruction including the latest gasoline fuel injection, electronic controls, emission controls, and automatic transmission overhaul.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate a focused, coherent, organized written report.
- Perform mathematic calculations required for entry-level automotive employment.
- Demonstrate an ability to apply written instructions and specifications relevant to their work environment.
- Demonstrate the ability to understand operation and diagnostic procedures of modern vehicle electrical and electronic systems.
- Demonstrate the ability to describe operation, diagnose and repair automotive drive train systems.
- Demonstrate the ability to describe operation, diagnose and repair modern engines.
- Demonstrate the ability to describe operation, diagnose and repair modern automotive steering, brakes and suspension systems.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State automotive service technician graduates may enter directly into the technology management BBA degree program.

**OCCUPATIONAL OPPORTUNITIES**

- Automatic Transmission Technician
- Automotive Technician Specialist
- Automotive Diagnostic Specialist
- Brake Specialist
- Drivability Specialist
- Fuel System Specialist
- Independent Repair Shop Owner
- Manufacturer’s Service Representative
- Marine Engine Service Specialist
- Service Manager
- Service Salesperson
- Shop Foreman
- Wheel Alignment Specialist

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 53 percent are employed; 47 percent transferred to continue their education.

**RELATED PROGRAMS**

- Autobody Repair
- Heavy Equipment: Truck & Diesel Technician
- Mechanical Engineering Technology
- Motorsports Technology
- Welding

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Recommended: Algebra

**TECHNICAL STANDARDS**

Applicants in the automotive service technician program must meet the following physical requirements:

- Must be able to perform safely in the shop.
- Must be able to lift 50 pounds to eye level.
- Must be able to communicate orally with a person six-10 feet away.
- Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
- Must have a valid motor vehicle license and be able to drive a standard transmission vehicle.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to understand information found in service repair manuals and use diagnostic flow charts.
- Must meet qualifications for a NYS driver’s license.

**CERTIFICATION OR LICENSURE**

Graduates may take Automotive Service Excellence (ASE) certification exams. Students are eligible for New York State inspection certification upon successful completion of their freshman year.

**Automotive Service Technician - AOS Degree**

**TYPICAL FOUR-SEMESTER PROGRAM**

First			
AUTO	1109	Brakes, Steering, and Suspension Systems	9
AUTO	1124	Automotive Welding	4
AUTO	1135	Automotive Basic Electronics & Component Overhaul	5
			18
Second			
AUTO	1169	Tune up, Electronic Engine Controls & Electrical Diagnosis	9
AUTO	1149	Inspection, Maintenance, Air Conditioning & Cooling and Heating	9
			18

## PROGRAMS AT ALFRED STATE

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Third			
AUTO	3409	Engine Service	9
AUTO	4449	Drive Train Service	9
			18

Fourth			
AUTO	3429	Advanced Electronics & Engine Performance	9
AUTO	4439	Shop Management and Enhanced Systems	9
			18

Continuing students: Students successfully completing the general automotive service technician program receive first priority for space if they wish a third year (senior year) in heavy equipment: truck & diesel technician or motorsports technology. They may be admitted to autobody repair with the department chair's approval.

### GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

**BIOLOGICAL SCIENCE**

**AAS Degree - Code #1554**

Mark Amman, Program Coordinator  
 Email address: AmmanMJ@alfredstate.edu

The biological science program prepares graduates to function in various scientific laboratories or to continue their education in a number of science or pre-professional fields. The program provides a foundation in biology, chemistry, and mathematics as well as a common core of general studies in English and social sciences. Biological science is a flexible program that can be tailored to fit the educational requirements of a variety of laboratory-related occupations.

**PROGRAM STUDENT LEARNING OUTCOMES**

1. Explain and apply the scientific method in order to document, interpret and present results of an experiment.
2. Evaluate scientific literature to summarize current thinking on a significant topic.
3. Display effective interpersonal communication and work skills in the lecture and laboratory setting.
4. Choose and employ proper safety practices in the laboratory
5. Demonstrate the calibration and operation of scientific instrumentation.
6. Utilize gravimetric and volumetric methods to determine the physical and chemical properties of matter.
7. Make both organic and inorganic compounds according to prescribed multi-step syntheses.
8. Use microbiological techniques to isolate organisms in pure culture.
9. Describe the association of structure and function of plants and animals.
10. Classify groups of organisms according to taxonomic criteria and evolutionary relationships.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State biological science graduates may enter directly into either the forensic science technology BS or technology management BBA degree program.

**TRANSFER OPPORTUNITIES**

The program also enables graduates to transfer to four-year programs in biology and chemistry as well as programs such as sports medicine, forensic science, nuclear medicine, medical technology, ultrasound technology, and pre-professional

programs (medicine, veterinary, dentistry, and pharmacy).

**OCCUPATIONAL OPPORTUNITIES**

- Law Enforcement Laboratories
- Environmental Monitoring
- Pharmaceutical Testing
- Wastewater Treatment

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent - 100 percent transferred to continue their education.

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2/  
 Trigonometry, Biology, Chemistry

**TECHNICAL STANDARDS:**

Students must possess fine motor skills which allow them to focus a microscope with fine adjustment and use forceps.

**FACILITIES**

The program is located in the newly renovated Physical and Health Sciences Building. Four science-ready lecture rooms are on the first floor with the eight laboratories found on the second and third floors. The laboratories are outfitted with state-of-the-art equipment and instrumentation. Explore the alphabet soup list below.

- UV-VIS Ultraviolet - Visible Spectrophotometry
- FTIR Fourier Transform Infrared Spectrophotometry with ATR attachment
- AAS Atomic Absorption Spectrophotometry
- FS Fluorescence Spectrophotometry
- GC-FID Gas Chromatography/Flame Ionization Detector
- GC-MS Gas Chromatography/Mass Spectroscopy
- HPLC High Performance Liquid Chromatography
- CE Capillary Electrophoresis
- PCR Polymerase Chain Reaction
- Preparative vacuum system
- Polarizing microscope

Anatomic models and up-to-date application software for teaching and learning, as well as for independent study and research, are available.

## PROGRAMS AT ALFRED STATE

### Biological Science - AAS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
BIOL	1104	General Biology I	4
CHEM	1114	General Chemistry OR	
CHEM	1984	Chemistry Principles I *	4
COMP	1503	Freshman Composition	3
BIOL	1101	Topics in General Biology	1
MATH	xxxx	Math Elective (MATH 1033 or greater)	3-4
			15-16

Second			
BIOL	2204	General Biology II	4
LITR	2603	Introduction to Literature	3
CHEM	2124	General Chemistry II OR	
CHEM	2984	Chemistry Principles II *	4
	xxxx	Technical Elective	2-4
	xxx3	Social Science Elective	3
			16-18

Third			
BIOL	5254	Principles of Microbiology	4
CHEM	3514	Organic Chemistry I	4
	xxxx	Technical Elective	2-4
MATH	xxxx	Math Elective	3-4
HIST	xxx3	History Elective	3
			16-19

Fourth			
BIOL	6534	Genetics	4
CHEM	4524	Organic Chemistry II	4
BIOL	2111	Biology Seminar	1
		Technical Elective(s)	2-4
		Open Elective	3-4
			14-17

#### Technical Electives:

AGPS	1103	Soils	
AGRI	2012	Organic & Sustainable Agriculture Tech.	
HORT	2544	Woody Plants	
BIOL	1223	Intro. to Forestry	
BIOL	1304	Botany	
BIOL	1404	Anatomy & Physiology I	
BIOL	2504	Anatomy & Physiology II	
BIOL	2633	Histotechniques	
BIOL	2803	Environmental Science	
BIOL	2801	Environmental Science Lab	
BIOL	4403	Pathophysiology (online)	
BIOL	5223	Ecology	
CHEM	5414	Analytical Principles	
CHEM	6614	Instrumental Analysis	
CISY	1003	Intro. to Microcomputer Appl.	
		or	
CISY	3023	Adv. Computer Spreadsheets	
COMP	5703	Technical Writing II	
AGPS	2203	Plant Physiology	
AGPS	5003	Integrated Pest Management	
PHYS	1044	College Physics I	
PHYS	2044	College Physics II	
SPCH	1083	Effective Speaking	
MATH	1084	Calculus I (if not used as a technical elective)	
MEDR	1132	Essentials of Pharmacology (online)	
Other under advisement			

MATH courses must be at the level of MATH 1033 college algebra or above.

Also required: One unit of physical education.

\*preferred for transfer

#### GRADUATION REQUIREMENTS

A minimum of 63 credit hours is required for graduation, with an overall cumulative index of 2.0. A grade of "C" or better is required in the core science courses (those which have BIOL or CHEM prefixes).

**BUILDING TRADES: BUILDING CONSTRUCTION****AOS Degree – Code #0420**

George H. Richardson, Program Coordinator  
Email address: richargh@alfredstate.edu

The building construction program provides instruction in the basic skills required of the carpenter and the mason in the construction of residential or other light-frame and masonry buildings. Extensive experience is gained in building layout, foundations, framing, sheathing, exterior and interior trim, block work, brick, and concrete construction.

Coupled with this experience, the program provides the necessary theory connected with carpentry and masonry operations as well as blueprint reading, cost and materials estimating, surveying for building layout and control, and safety on the job.

A large part of the program is actual on-the-job training under the supervision of qualified instructors. Frequently, concrete and lumber companies instruct students in the uses of their products.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Measure, layout, and cut materials accurately and build various construction systems.
- Safely set-up and operate construction tools and equipment.
- Accurately estimate materials for a project and explain how to manage materials and supervise people.
- Read and interpret construction prints.
- Demonstrate essential problem solving skills generally employed in the construction industry.
- Demonstrate effective written construction communication.
- Demonstrate effective oral communication.
- Perform common mathematical construction calculations.
- Demonstrate the proper selection and installation of materials, used to build various construction projects.
- Perform computer based research and communication.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State building trades: building construction graduates may enter directly into the technology management BBA degree program.

**OCCUPATIONAL OPPORTUNITIES**

- Manufacturers
- Cabinetmaker
- Sales
- Shop Foreman
- Installer (Cabinets, etc.)
- Dealers
- Maintenance Supervisor
- Carpenter
- Contractor
- Self-Employment
- Expediter
- Construction Superintendent
- Construction Foreman
- Mason
- Estimator

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 89 percent are employed; 11 percent transferred to continue their education.

**RELATED PROGRAMS**

Air Conditioning and Heating Technology  
Architectural Engineering Technology  
Construction Engineering Technology  
Electrical Construction and Maintenance  
Electrician  
Masonry  
Surveying Engineering Technology

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Recommended: Algebra

**TECHNICAL STANDARDS**

Applicants in the building trades: building construction program must be able to meet the following physical requirements:

- Must be able to lift 50 pounds to shoulder height.
- Must be able to perform safely in the laboratory.
- Must be able to communicate orally with a person 20 feet away.
- Must be able to climb a ladder and/or able to climb, un-aided, onto and off of equipment using three points of contact.
- Must be able to stand for long periods of time.
- Must be able to visually read from a blueprint or drawing.
- Must be able to hear a backup warning alarm.

## PROGRAMS AT ALFRED STATE

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### Building Trades: Building Construction - AOS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
BLCT	1021	College & Life Skills	1
BLCT	1023	Construction Essentials I	3
BLCT	1034	Work Place Environment & Safety	4
BLCT	1022	Wood Fabrication Tech. I	2
BLCT	1132	Estimating I	2
BLCT	1142	Masonry I	2
BLCT	1024	Construction Essentials II	4
			18

Second			
BLCT	2044	Construction Essentials III	4
BLCT	2054	Construction Essentials IV	4
BLCT	2064	Structural Components	4
BLCT	2032	Wood Fabrication Tech. II	2
BLCT	2132	Estimating II	2
BLCT	2142	Masonry II	2
			18

Third			
BLCT	3223	Home Remodeling	3
BLCT	3313	Basic CAD for Residential Drawings	3
BLCT	3123	Construction Drawings & Specs	3
BLCT	3213	Exterior Construction Details	3
BLCT	3323	Interior Trim	3
BLCT	3233	Advanced Framing	3
			18

Fourth			
BLCT	3203	Estimating III	3
BLCT	4212	Construction Safety	2
BLCT	4303	Interior Surfaces	3
BLCT	4312	Introduction to Residential Jobsite Management	2
BLCT	4042	Construction Business Operation	2
BLCT	4023	Form Building	3
BLCT	3033	Cabinet & Counter Top Construction	3
			18

#### Building Trades – Historic Preservation Electives

BLCT	2094	Window and Door Restoration	4
BLCT	2084	Mechanics of Decay and Deterioration in Wood	4
BLCT	2074	Historic Roofing Materials	4
BLCT	4104	Comparison of Framing Techniques	4
BLCT	4900	Directed Study - Historic Preservation	2

### GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a “C” average.

**BUSINESS ADMINISTRATION****BBA Degree – Code #0280**

Francine Staba, Program Coordinator  
 Email address: stabafm@alfredstate.edu

The BBA degree in business administration is designed to allow a student to enter as a freshman or transfer into the program after two years of study in an associate degree business program. Students receiving their AAS or AS business degree will be able to transfer into this program and receive the BBA degree in a minimum of four more semesters.

The BBA in business administration is designed to provide graduates with the management, administrative, and technical business skills needed to succeed in positions of leadership and responsibility in business and industry as well as governmental and not-for-profit organizations, and graduate study.

As a college of technology, Alfred State's mission is to prepare people to succeed in technical careers. An emphasis is placed on lifelong learning as an essential skill for any graduate due to the rapid pace of technological advancement and an increasingly global society. The business administration program reflects both concepts very well by developing graduates with managerial and technical skills and the ability to stay abreast in the dynamic field of business in today's economy.

A laptop computer is required for students entering this degree program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate technical competence in domestic and global business through the study of major disciplines within the field of business.
- Analyze and devise solutions for business problems and issues by using critical thinking and decision making for evaluating data, information, and materials.
- Develop the critical skills of creating and managing innovation and new business development for high growth potential entities by working effectively in teams.
- Apply software, technology, and information systems in modern business operations.
- Analyze complex business issues and communicate findings through a coherent written statement and oral presentation.

- Analyze the strategic management process in relation to the current environment and identify specific trends and strategies.
- Distinguish the use of ethics, government regulations and the legal system and how they apply to the business environment.
- Critical Thinking (problem solving, reasoning skills)

**OCCUPATIONAL OPPORTUNITIES**

- Administrative Services Manager
- Business Managers of Artists/Athletes
- Business Operations Specialist
- Financial Analysts/Managers/Specialists
- General and Operations Managers
- Human Resource Specialist
- Loan Counselors/Officers
- Management Analysts
- Marketing Managers
- Sales Managers

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent - 62 percent are employed; 38 percent transferred to continue their education.

**RELATED PROGRAMS**

Financial Services  
 Accounting  
 Marketing  
 Business Management (Career)  
 Business Administration (Transfer)  
 Entrepreneurship  
 Financial Planning  
 Sport Management  
 Technology Management

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, SAT and/or ACT scores with a recommended combined SAT score of 1,000 (critical reading and math) or a composite ACT score of 21

Recommended: Algebra 2/ Trigonometry

## PROGRAMS AT ALFRED STATE

### Business Administration - BBA Degree

#### TYPICAL EIGHT-SEMESTER PROGRAM

First			
ACCT	1124	Financial Accounting	4
CISY	xxx3	Intro to Computers/Info. Mgt. Elective	3
MKTG	2073	Principles of Marketing	3
MATH	xxx3	Stats Prereq or Stats I OR Stats Methods	3
COMP	1503	Freshman Composition	3
HPED	xxx1	Physical Education Elective	1
			17

Second			
ACCT	2224	Managerial Accounting	4
ECON	1013	Macroeconomics	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	Math Elective	3
	xxx3	Free Elective	3
			16

Third			
BUAD	3153	Fundamentals of Management	3
ECON	2023	Microeconomics	3
SPCH	1083	Effective Speaking	3
	xxx3	General Education Elective	3
	xxx3	Free Elective	3
			15

Fourth			
BUAD	2033	Business Communications	3
	xxx3	General Education Elective	3
	xxx3	General Education Elective	3
	xxx3	Business Elective	3
			12

Fifth			
BUAD	3043	Business Law I	3
BUAD	5003	Management Communications	3
BUAD	6003	Managerial Finance	3
TMGT	5001	Professional Business Seminar	1
	xxx3	Gen. Ed. or Business Elective	3
	xxx3	Business Elective	3
			16

Sixth			
BUAD	7273	Organizational Behavior	3
BUAD	5013	Principles of Leadership	3
BUAD	6113	Strategic & Creative Problem Solving	3
BUAD	5023	Human Resource Management	3
	xxx3	Business Elective	3
			15

Seventh			
BUAD	7023	Legal Environment of Business OR Upper Business Elective	3
BUAD	7033	Operations Management	3
	xxx3	Business Elective - Upper	3
	xxx3	Business Elective - Upper	3
	xxx3	Gen. Ed. or Business Elective	3
			15

Eighth			
BUAD	8003	Management Information Systems	3
BUAD	8013	International Business	3
BUAD	5043	Business Ethics	3
BUAD	8023	Strategic Management	3
BUAD	xxx3	Business Elective - Upper	3
			15

### GRADUATION REQUIREMENTS

- 121 credit hours, including one credit hour of physical education
- 30 credit hours of the 45 upper-level credit hours for this degree must be taken at Alfred State.
- Cumulative overall index of at least 2.0



**BUSINESS ADMINISTRATION**

**AS Degree – Code #0671**

Joseph Damrath, Program Coordinator  
 Email address: damratj@alfredstate.edu

The business administration (transfer) program primarily prepares students to continue their formal education in the business field in a four-year program. The program combines the foundations necessary for business administration with equal emphasis on university parallel courses in liberal arts and sciences.

A laptop computer is recommended, but not required, for students entering the business administration (transfer) program. The college will provide a list of appropriate laptops to all students who have been accepted to attend Alfred State.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Apply effective communication skills in writing, reading, presenting and listening in writing business and other documents.
- Use decision-making skills, prioritize, analyze and make recommendations using critical thinking.
- Draw specific conclusions about a business from its financial records, including conducting risk assessment.
- Use technological resources and skills effectively and appropriately to communicate, collaborate, and retrieve information.
- Participate in team situations by successfully and effectively communicating, participating, focusing, and completing the assigned task.
- Distinguish between the different aspects of the marketing mix and discuss how to manage each one.
- Relate to different business situations through general business knowledge gained, such as organization types, laws and applications, supply demand, global issues, ethics and leadership.
- Defend final projects through research analysis, conclusions, and recommendations, along with an oral presentation of this information.
- Apply appropriate job search skills such as resume writing, job interviewing, and writing cover letters and thank you letters.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State business administration graduates may enter directly into either the business administration BBA or technology management BBA degree program at Alfred State.

**TRANSFER OPPORTUNITIES**

Students may transfer directly into one of our own BBA degree programs or to another college. Although not limited to these schools, common transfer institutions include: Alfred University, St. Bonaventure University, Rochester Institute of Technology, St. John Fisher College, SUNY at Albany, University at Buffalo, SUNY College at Brockport, SUNY College at Fredonia, SUNY College at Geneseo, SUNY College at Oneonta, SUNY College at Oswego, SUNY at Binghamton, Cornell University, Canisius College, Niagara University, and Hilbert College.

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 100 percent transferred to continue their education.

**RELATED PROGRAMS**

- Accounting
- Business Administration
- Financial Services
- Marketing
- Financial Planning
- Sport Management
- Technology Management

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry  
 Recommended: Algebra 2/Trigonometry

**Business Administration - AS Degree**

**TYPICAL FOUR-SEMESTER PROGRAM**

First			
ACCT	1124	Financial Accounting	4
COMP	1503	Freshman Composition	3
CISY	1103	Information Technology Mgt.	3
MATH	xxx3	Stats I Prerequisite OR Statistics I	3
MKTG	2073	Principles of Marketing	3
HPED		Physical Education Elective	1
			17
Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
	xxx3	Humanities Gen. Ed. Elective	3
CISY	xxx3	Computer Elective	3
MATH	xxx3	Statistics I OR Statistics II	3
	xxx3	Gen. Education Elective	3
			19
Third			
BUAD	3153	Fundamentals of Mgt.	3
BUAD	3043	Business Law I	3
BUAD	4203	Personal Fin. Plan'g.	3
ECON	1013	Macroeconomics	3
	xxx3	Natural Science Elective	3
			15

## PROGRAMS AT ALFRED STATE

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Fourth			
ECON	2023	Microeconomics	3
PLSC	1053	International Relations	3
BUAD	4053	Business Law II	3
	xxx3	Business Elective	3
	xxx3	Liberal Arts Elective/Gen. Ed.	3
			15

### GRADUATION REQUIREMENTS

66 semester hours with a 2.0 cumulative index.

**BUSINESS MANAGEMENT****AAS Degree – Code #1306**

Dianne Tuzzolino, Program Coordinator  
Email address: tuzzoldc@alfredstate.edu

This program attracts students who are ultimately interested in a business management position. In addition, entry-level students unsure of which business career program to select may enroll in this program. Due to the program's broad business foundation, students can transfer to other business programs after the first semester and still graduate in four semesters.

A laptop computer is recommended, but not required, for students entering the business management (career) program. The college will provide a list of appropriate laptops to all students who have been accepted to attend Alfred State.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Apply effective communication skills in writing, reading, presenting and listening in writing business and other documents.
- Use decision-making skills, prioritize, analyze and make recommendations using critical thinking.
- Draw specific conclusions about a business from its financial records, including conducting risk assessment.
- Use technological resources and skills effectively and appropriately to communicate, collaborate, and retrieve information.
- Participate in team situations by successfully and effectively communicating, participating, focusing, and completing the assigned task.
- Distinguish between the different aspects of the marketing mix and discuss how to manage each one.
- Relate to different business situations through general business knowledge gained, such as organization types, laws and applications, supply/demand, global issues, ethics, and leadership.
- Defend final projects through research analysis, conclusions, and recommendations, along with an oral presentation of this information.
- Apply appropriate job search skills such as resume writing, job interviewing, and writing cover letters and thank you letters.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State business management graduates may enter directly into either the business administration BBA or technology management BBA degree program at Alfred State.

**TRANSFER OPPORTUNITIES**

Students may transfer directly into one of our own BBA degree programs or to another college. Although not limited to these schools, common transfer institutions include: Alfred University, St. Bonaventure University, Rochester Institute of Technology, St. John Fisher College, SUNY at Albany, University at Buffalo, SUNY College at Brockport, SUNY College at Fredonia, SUNY College at Geneseo, SUNY College at Oneonta, SUNY College at Oswego, SUNY at Binghamton, Canisius College, Niagara University, and Hilbert College.

**OCCUPATIONAL OPPORTUNITIES**

- Office Supervisor
- Administrative Assistant
- Office Manager
- Leasing Agent
- Property Manager

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 33 percent are employed; 67 percent transferred to continue their education.

**RELATED PROGRAMS**

Agricultural Business  
Accounting  
Business Administration  
Financial Services  
Marketing  
Computer Information Systems  
Financial Planning  
Sport Management  
Technology Management

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra  
Recommended: Geometry, Algebra 2/Trigonometry

## PROGRAMS AT ALFRED STATE

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### Business Management - AAS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
ACCT	1124	Financial Accounting	4
COMP	1503	Freshman Composition	3
CISY	xxx3	Intro to Computers/Info Mgt. Elective	3
MKTG	2073	Principles of Marketing	3
MATH	xxx3	Math Elective	3
HPED	xxx1	Physical Education Elective	1
			17

Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	Math Elective	3
	xxx3	Gen. Education Elective	3
			16

Third			
BUAD	3153	Fundamentals of Mgt.	3
BUAD	3043	Business Law I	3
BUAD	4203	Personal Financial Planning	3
ECON	1013	Macroeconomics	3
	xxx3	Business Elective	3
			15

Fourth			
BUAD	4053	Business Law II	3
ECON	2023	Microeconomics	3
MKTG	3153	Web Design and Marketing	3
BUAD	xxx3	Business Elective	3
	xxx3	Business or Computer Elective	3
			15

### GRADUATION REQUIREMENTS

63 semester hours with a 2.0 cumulative index as well as six hours of math.

**CAD/CAM TECHNOLOGY****AAS Degree – Code #1337**

Dr. Matthew Lawrence, Program Coordinator  
 Email address: lawrenmj@alfredstate.edu

The CAD/CAM technology program (computer-aided design/drafting – computer-aided manufacturing) prepares the graduate for a number of opportunities in the engineering and manufacturing-related fields. This program develops skills in the areas of design/drafting (2D CAD and 3D solid modeling) and automation/robotics. Graduates will become proficient with industry-standard software including AutoCAD, Solid Works, and Mastercam. Each student will also be exposed to hardware such as coordinate measuring machines (CMM), computer numerically controlled (CNC) machines, and industry grade robotics. The CAD/CAM graduate can seamlessly enter the mechanical engineering technology baccalaureate program also offered at Alfred State.

A laptop computer is required for students entering the CAD/CAM technology program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**PROGRAM STUDENT LEARNING OUTCOMES**

- Solve design and manufacturing problems using sound engineering principles and practices
- Produce CAD drawings which communicate the appropriate manufacturing details, standards, and specifications
- Effectively communicate with others using verbal, written, and graphical methods and procedures
- Function effectively on teams or on group projects, and assume leadership roles when appropriate
- Perform in a professional and ethical manner and maintain currency in technological advancements.
- Info Management (computer & research skills appropriate to degree level and type)
- Written & Oral Communication (appropriate to degree level and type)
- Critical Thinking (problem solving, reasoning skills appropriate to degree level and type)

**PROGRAM EDUCATIONAL OBJECTIVES**

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The CAD/CAM technology program produces graduates who:

1. will be able to solve design and manufacturing problems using sound engineering principles and practices;
2. will be able to produce CAD drawings which communicate the appropriate manufacturing details, standards, and specifications;
3. will have the ability to effectively communicate with others using oral, written, and graphical methods and procedures;
4. will be able to function effectively on teams or on group projects and assume leadership roles when appropriate;
5. will perform in a professional and ethical manner and maintain currency in technological advancements.

**INTERNSHIP OPPORTUNITIES**

Internships are possible with many industries through Career Development located in the Student Leadership Center and may be eligible for technical credit.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State CAD/CAM technology graduates may enter directly into either the mechanical engineering technology BS or technology management BBA degree program. Students can complete the BS in mechanical engineering technology program in two years if they have taken math through Technical Calculus I and physics through General Physics II during the first two years.

**TRANSFER OPPORTUNITIES**

Graduates are eligible to continue their education by enrolling in a baccalaureate degree program in such areas as mechanical or industrial technology, but should work closely with their adviser on selection of technical and science electives. This program offers 100 percent transferability to Alfred State's Bachelor of Science in mechanical engineering technology program as the first part of the 2+2 format.

**OCCUPATIONAL OPPORTUNITIES**

- Structural or Piping System Design
- CAD/CAM Programmer
- Sales Representative in Quality Control, Production Planning, and Tool Design
- Quality Control or Materials Testing
- Appliance Product Design Technician in Manufacturing
- Machine or Heavy Equipment Design
- Cost Analyst or Estimator
- Computer Numerical Control Specialist
- Development
- Technical Sales

## PROGRAMS AT ALFRED STATE

- Draftsman
- CAD or Model Specialist
- Field Installation
- Product Reliability Analyst
- Test and Quality Specialist
- Material and Finish Specialist
- Tool & Die Design
- Installation Supervisor

### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent transferred to continue their education.

### RELATED PROGRAMS

Drafting/CAD

Drafting/CAD: Model Building & Process Piping Drawing

Drafting/CAD: Technical Illustration

Mechanical Engineering Technology

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry

Recommended: Algebra 2/Trigonometry, Physics

### CAD/CAM TECHNOLOGY - AAS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
MECH	1003	Intro. to MET/Lab	3
MECH	1603	Graphics/CAD	3
MECH	1203	Materials Science	3
MECH	4423	Robotics	3
MATH	1033	College Algebra or Higher*	3
HPED	xxx1	Phys. Ed. Elective	1
			16

Second			
MECH	1643	Manufacturing Processes	3
MECH	1641	Manufacturing Processes Lab	1
MECH	2543	Advanced Drafting Applications	3
MECH	4523	Control System Fundamentals	3
MATH	2043	College Trigonometry or Higher*	3
COMP	1503	Freshman Composition	3
			16

Third			
MECH	3113	Statics	3
MECH	3203	CAM	3
MATH	2124	Statistical Methods and Analysis	4
LITR	2603	Introduction to Literature	3
PHYS	1024	General Physics	4
			17

Fourth			
MECH	3643	Manufacturing Management	3
MECH	4333	Advanced CAM	3
MECH	4003	Solid Modeling	3
xxx3	xxx3	Technical Elective	3
SOCI	1193	Marriage and Family** OR	
PLSC	1043	American Government	3
			15

\* If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

#### Typical Technical Electives:

MECH	3223	Mechanical Design Principles
MATH	1063	Technical Calculus I
PHYS	2023	General Physics II

### GRADUATION REQUIREMENTS

- 64 minimum credits
- 20 credits of liberal arts and sciences
- **2.0 grade point average in major courses** (in bold text above)
- 2.0 cumulative grade point average
- Approval of department faculty
- 5 of 10 General Education areas

\*\*Any student who does not enroll in SOCI 1193 or PLSC 1043 must enroll in two courses that satisfy General Education requirements.

**CODING & REIMBURSEMENT SPECIALIST****Certificate – Code #1671**

Tracy Locke MS, RHIA, Program Director  
 Email address: LockeTF@alfredstate.edu

Securing accurate and appropriate payment for health care services challenges health care providers, insurance companies, and patients. Today's complex health care insurance and governmental payment systems depend on medical coding to determine proper payment. The coding and reimbursement specialist program incorporates the knowledge and skills needed to assign the correct code for prompt and accurate reimbursement. C&RS professionals analyze patient records, assign ICD (ICD-9-CM, ICD-10-CM/ICD-10-PCS), CPT, and HCPCS codes to diagnoses, procedures, and services provided to patients for timely and accurate healthcare billing, reimbursement, and medical necessity.

Web-based instruction is organized under the health information technology program (HIT program). This means that if you initially select the C&RS program, you can transfer courses into the HIT program and earn your associate in applied science (AAS) degree.

Alfred State's comprehensive coding certificate program offers individuals the opportunity to pursue a business-related career that is an essential part of the health care industry.

**PROGRAM STUDENT LEARNING OUTCOMES**

- PSLO 1 - Apply biomedical knowledge (including medical terminology, anatomy & physiology, pathophysiology, and pharmacology) to apply diagnosis/procedure codes (ICD-9-CM, ICD-10-CM, ICD-10-PCS, CPT, and HCPCS level II according to current nomenclature).
- PSLO 2 - Use established federal guidelines, accreditation standards, and APC and DRG calculator/grouper software to comply with healthcare documentation (review), reimbursement, and reporting requirements.
- PSLO 3 - Apply HIM knowledge as defined by organizational policy and external regulations (e.g., Medicare, Medicaid, and managed care) and standards to maintain the accuracy and completeness of the patient record.
- PSLO 4 - Apply HIM knowledge of policies and procedures for confidentiality and security measures regarding the access and disclosure of protected health information (PHI) to authorized users.
- PSLO 5 - Apply HIM knowledge in the collection, maintenance and reporting of data for clinical

indices/databases/registries to meet specific organizational and regulatory needs for the purposes of medical research and education.

- PSLO 6 - Apply HIM knowledge of legal, ethical, accreditation and certification standards as appropriate for the management of health information.
- PSLO 7 - Apply basic methods when calculating descriptive, institutional, and healthcare vital statistics.
- PSLO 8 - Apply and use common software applications (e.g. spreadsheets, databases, word processing, graphics, presentation, email and so on) and HIM-related software applications (e.g., release of information, electronic health record, patient record abstracting, and so on).
- PSLO 9 - Apply HIM knowledge to promote ethical standards of practice to health information management and coding.
- PSLO 10 - Demonstrate critical thinking to problem solving and reasoning skills to health information management and coding practices.

**PROFESSIONAL PRACTICE EXPERIENCE**

Students complete non-paid professional practice experiences (PPEs) in the health information (coding) program of an acute care hospital (160 hours). PPE arrangements are made in consultation with each student so that a convenient location is selected. Students are not a substitute for paid staff during PPEs, which means they are expected to receive appropriate supervision and mentoring during completion of all tasks.

Joint Commission *Hospital Accreditation Standards Manual* requires hospitals to implement “a process to ensure that a person’s qualifications are consistent with his/her job responsibilities.” This standard “applies to staff, students, and volunteers,” and it further states that the hospital is responsible for verifying “the following according to law, regulation, or hospital policy: information on criminal background.” As such, Alfred State students who complete PPEs in the C&RS program may be required to undergo a criminal background check prior to placement at the facility. In addition, the facility may require students to undergo a physical examination (on-site at the facility or by the student’s primary care provider) prior to beginning the PPE. The physical examination includes drug screening, a TB test, and/or DTB, hepatitis B, and/or MMRV immunization or status. Students may be required to incur costs associated with the criminal background check and/or physical examination.

## PROGRAMS AT ALFRED STATE

Once a PPE placement has been arranged, students are expected to contact the professional practice supervisor to arrange a schedule for attendance. Students may be required to attend an on-site orientation at the professional practice facility, which could be several days in length.

### CRS ENTRANCE REQUIREMENTS & RECOMMENDATIONS

Required:

High School Biology or equivalent

Must be able to visually read computer monitor; must be able to use keyboard and mouse.

Must be able to attend Professional Practice Experience (PPE) course including 160 hours at a health care facility within reasonable driving/travel distance to their home.

Recommended:

Keyboarding, MS Office Professional

### TRANSFER OPPORTUNITIES

Graduates are eligible to continue their education by completing the health information technology (HIT) program. The HIT program is also Internet-based.

### OCCUPATIONAL OPPORTUNITIES

- Hospitals
- Clinics and Physicians' Offices
- Insurance Companies
- State and Federal Agencies
- Legal Firms
- Software Companies
- Consulting Firms

### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent - 100 are employed.

### CERTIFICATION

Graduates are eligible to take national certification examinations offered by the American Health Information Management Association (AHIMA) and the American Academy of Professional Coders (AAPC). AHIMA offers Certified Coding Specialist (CCS) exams, and the AAPC offers Certified Professional Coder (CPC) exams. It is strongly recommended students work for a minimum of one year full-time as a coder before taking the CCS and CPC exams.

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: High School Biology or equivalent

Must be able to visually read computer monitor; must be able to use keyboard and mouse.

Recommended: Keyboarding, MS Office Professional

### RELATED PROGRAMS

Health Information Technology

### Coding & Reimbursement Specialist - Certificate

TYPICAL FOUR-SEMESTER PROGRAM - Full-time

First			
BIOL	1114	Human A&P I	4
MEDR	1132	Essentials of Pharmacology	2
MEDR	1133	Medical Terminology	3
CISY	1003	Intro. to Microcomputers	3
			12
Second			
MEDR	1114	Intro. to Health Info. Mgt.	4
BIOL	2214	Human A&P II	4
BIOL	4403	Pathophysiology	3
MEDR	1223	Health Data Management	3
			14
Third			
MEDR	1244	CPT and HCPCS Level II Coding	4
MEDR	1234	ICD-9-CM, ICD-10-CM & ICD-10-PCS Coding	4
MEDR	3114	Electronic Health Records	4
			12
Fourth			
MEDR	4214	Insurance & Reimbursement Proc.	4
MEDR	2614	Advanced Coding & Reimbursement	4
MEDR	4312	Intro. to HIM PPE	2
MEDR	4322	Coding PPE	2
			12

### GRADUATION REQUIREMENTS

C&RS students are required to earn a grade of at least a "C" or better in each BIOL and MEDR prefix course prior to placement in the PPEs. Students must also earn a grade of at "C" in the MEDR courses to graduate from the C&RS program.

Should a student fail MEDR or BIOL courses a second time: They may re-take MEDR and/or BIOL courses as a continuing education student. Then, upon successful completion with a "C" or better, apply for readmission to the C&RS program. Or, students may retake the BIOL/MEDR equivalent courses on-campus at Alfred State or at another college, and transfer the credit back to Alfred State after having obtained pre-approval of the course for transfer credit and earning a grade of "C" or better.

SOC Occupation Listings:

29-2052.00 Pharmacy Technicians  
43-3051.00 Payroll and Timekeeping

Clerks

43-3061.00 Procurement Clerks  
43-4021.00 Correspondence Clerks  
43-9041.01 Insurance Claims Clerks



43-9041.02 Insurance Policy Processing  
 Clerks  
 43-9061.00 Office Clerks, General

Costs for entire program completed in normal time  
 (full-time, in-state):

Tuition and required fees: \$14,368.00

Estimated costs of books and supplies:

\$3,472.00

Room and Board charges for living on  
 campus: \$22,320

Additional cost information can be found at  
[www.alfredstate.edu/paying-for-college/tuition-and-costs](http://www.alfredstate.edu/paying-for-college/tuition-and-costs).

Median Cumulative Loan Debt for students in the  
 program between July 1, 2012 and June 30, 2013:

Median Federal Student Loan debt:

\$4,543.00

Median Private Loan debt: \$0.00

Median Institutional financing plan debt:

\$0.00

The on-time completion rate for student's  
 completing the program between July 1, 2011 and  
 June 30, 2012 within the normal time using the  
 typical semester recommendations as listed is 50  
 percent.

The job placement rate for students who  
 completed their program between July 1, 2009  
 through June 30, 2011 can be found in the  
 following chart.

Employment and Transfer Report

Employment and Transfer Rate: 100%

Survey Details	2009	2010	2011
Receiving Degrees	3	5	2
Responding to Survey	2 (67%)	5 (100%)	1 (50%)
Employed	2 (100%)	4 (80%)	-
Employed in Field	2 (100%)	4 (100%)	-
Transferred	-	1 (20%)	1 (100%)
Unemployed Seeking Employment	-	-	-
Unemployed/Not Seeking Employment	-	-	-

Salary Range      Not Available

### COMPUTER ENGINEERING TECHNOLOGY

#### AAS Degree – Code #1602

#### BS Degree - Code #1357

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The computer engineering technology program provides the knowledge and skills necessary for graduates to secure employment as technicians or technologists who are capable of installing, designing, supporting, and maintaining computer systems and networks. This is a hands-on, technically oriented program with a focus on computer system hardware and network infrastructure, but does include software development and operating systems course work. The program is designed to prepare students for professional certification examinations leading to certifications such as the CompTIA A+ and Network+, Microsoft Certified System Administrator (MCSA), Microsoft Certified System Engineer (MCSE), and Cisco Certified Network Associate (CCNA).

The first year of the computer engineering technology program provides students with a foundation of knowledge in digital and electronic circuits and math, as well as an introduction to computer systems and networking. In the following years the program continues developing skills in computer hardware, operating systems, and networking. Second and third years of study build upon the electric and computer background. In the fourth year of the program, students can either complete a senior project or do an internship with an employer. The internship program provides real-world experience for students by having them work for an entire semester at a company.

Students may enter the Bachelor of Science program in computer engineering technology as freshmen for an eight-semester sequence, or in the fifth semester as transfer students with the appropriate technical background. Typically, graduates of AAS computer engineering technology programs can be articulated to complete the bachelor program in two years. Additionally, students entering the bachelor of science program in computer engineering technology as freshmen can apply for an AAS degree in computer engineering technology upon completion of the AAS requirements (typically at the end of the fourth semester). This, along with potential industry certifications earned, can enable the student to obtain meaningful summer or part-time employment opportunities while completing studies.

Both computer engineering technology programs are accredited by the Engineering Technology Accreditation Commission of the Accreditation Board for Engineering and Technology [ETAC/ABET, 111 Market Place Suite 1050, Baltimore, MD 21202; (410) 347-7700, Fax: (410)625-2238; email: [accreditation@ABET.org](mailto:accreditation@ABET.org); website: <http://www.abet.org>].

A laptop computer is required for students entering the computer engineering technology program. The college will provide a list of appropriate laptops and wireless modem cards to all students who have been accepted to attend Alfred State. Some courses may require specialized tools and/or electronic components.

#### PROGRAM STUDENT LEARNING OUTCOMES - AAS Degree

- An ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities.
- An ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge.
- An ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments.
- An ability to function effectively as a member of a technical team.
- An ability to identify, analyze, and solve narrowly defined engineering technology problems.
- An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature.
- An understanding of the need for and an ability to engage in self-directed continuing professional development.
- An understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity;.
- A commitment to quality, timeliness, and continuous improvement.
- The application of electric circuits, computer programming, associated software applications, analog and digital electronics, microcomputers, operating systems, and local area networks to the building, testing, operation, and maintenance of computer systems and associated software systems.
- The applications of physics or chemistry to computer systems in a rigorous mathematical

environment at or above the level of algebra and trigonometry.

**PROGRAM STUDENT LEARNING OUTCOMES - BS Degree**

- An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities.
- An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies.
- An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.
- An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives.
- An ability to function effectively as a member or leader on a technical team.
- An ability to identify, analyze, and solve broadly-defined engineering technology problems.
- An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature.
- An understanding of the need for and an ability to engage in self-directed continuing professional development.
- An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity.
- A knowledge of the impact of engineering technology solutions in a societal and global context.
- A commitment to quality, timeliness, and continuous improvement.
- The application of electric circuits, computer programming, associated software applications, analog and digital electronics, microcomputers, operating systems, and local area networks to the building, testing, operation, and maintenance of computer systems and associated software systems.
- The applications of physics or chemistry to computer systems in a rigorous mathematical environment at or above the level of algebra and trigonometry.
- The ability to analyze, design, and implement hardware and software computer systems.
- The ability to apply project management techniques to computer systems.

- The ability to utilize statistics/probability, transform methods, discrete mathematics, or applied differential equations in support of computer systems and networks.

**PROGRAM EDUCATIONAL OBJECTIVES (PEOs)**

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The AAS in the computer engineering technology program produces graduates who:

- Apply knowledge of mathematics and science using critical thinking and creative skills to solve computer engineering problems.
- Function professionally with effective communication and with ethical responsibility as an individual and on a multidisciplinary team.
- Continuously improve and engage in life-long learning and adapt to a technologically advancing society.
- Apply knowledge of contemporary issues and anticipate the impact of computer engineering solutions on industry and the general public.
- Use current techniques, skills, and tools necessary to support computer engineering practice.
- The BS in computer engineering technology program produces graduates who:
- Apply knowledge of mathematics and science using critical thinking and creative skills to solve computer engineering problems.
- Function professionally with effective communication and with ethical responsibility as an individual and on a multidisciplinary team.
- Continuously improve and engage in life-long learning and adapt to a technologically advancing society.
- Apply knowledge of contemporary issues and anticipate the impact of computer engineering solutions on industry and the general public.
- Use current techniques, skills, and tools necessary to support computer engineering practice.
- Design computer engineering systems, components or processes to meet industry needs.
- Design computer engineering experiments, as well as analyze and interpret data to support the problem solving process and project design.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State computer engineering technology AAS graduates may enter directly into either the computer engineering technology BS or technology management BBA degree program.

## PROGRAMS AT ALFRED STATE

### TRANSFER OPPORTUNITIES

Graduates from the associate-level computer engineering technology program are eligible to continue their education by enrolling in a baccalaureate degree program in computer engineering technology at Alfred State or elsewhere. Our computer engineering technology AAS two-year degree program is the same as the first two years of the computer engineering technology BS four-year degree program.

### OCCUPATIONAL OPPORTUNITIES

- Computer Network Technician
- Computer Network Computer Systems Integrator
- Computer Network Support Specialist
- Computer Network Administrator
- Computer Network Engineering Technician
- Computer Systems Engineering Technician

### EMPLOYMENT STATISTICS

Computer Engineering Technology (AAS degree) - 100 percent transferred to continue their education.

Computer Engineering Technology (BS degree) - 100 percent - 100 percent are employed.

### RELATED PROGRAMS

Computer & Electronic Systems Technician  
 Computer Information Systems  
 Computer Science  
 Electrical Engineering Technology  
 Information Technology: Network Administration  
 Information Security and Assurance

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS (AAS)

Required: Algebra, Geometry, Algebra 2/Trigonometry

Recommended: Physics

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS (BS)

Required: Algebra, Geometry, Algebra 2/Trigonometry, SAT and/or ACT scores with recommended SAT score of 1,000 (critical reading and math) or a composite ACT score of 21.

Recommended: Physics

### COMPUTER ENGINEERING TECHNOLOGY – AAS/BS Degree

#### COMPUTER ENGINEERING TECHNOLOGY - AAS Degree

##### TYPICAL FOUR-SEMESTER PROGRAM

First			
ELET	1001	Seminar	1
ELET	1202	Intro. to Electrical Technology	2
ELET	1133	Digital Logic	3
ELET	1111	Digital Logic Lab	1
COMP	1503	Freshman Composition	3
MATH	1033	College Algebra or Higher*	3
HPED	xxx1	Physical Education Elective	1
			14

Second			
ELET	1003	Intro. to Computer Hardware	3
ELET	1143	Electronic Fabrication	3
ELET	1104	Circuit Theory I	4
ELET	1151	Circuit Theory Lab	1
MATH	2043	College Trigonometry or Higher*	3
LITR	2603	Gen. Ed. - Literature Elective	3
			17

Third			
CISY	5123	Scientific Programming C++	3
ELET	2103	Electronics Theory I	3
ELET	2151	Electronics I Lab	1
ELET	2143	Embedded Controller Fund	3
MATH	1063	Technical Calculus I	3
PHYS	1024	General Physics I	4
			17

Fourth			
CISY	4003	Intro. to Data Structures	3
ELET	3143	Intro. Desktop Optg. System	3
ELET	4233	Intro. to Server Optg. System	3
ELET	5113	Electronic Communications	3
PHYS	2023	General Physics II	3
SOCI	1193	Marriage & Family Acrs. Wrld. Cultures	3
			18

\* If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

#### GRADUATION REQUIREMENTS - Associate of Applied Science (AAS) Degree

- 66 semester credit hours in program as listed above
- 25 semester credit hours of liberal arts and sciences from at least five of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- 2.0 or above cumulative grade point average, and 2.0 or above grade point average in major courses (ELET, CISY)
- Approval of department faculty

**COMPUTER ENGINEERING TECHNOLOGY - BS Degree**

TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

Fifth			
CISY	3283	Internetworking I	3
COMP	5703	Technical Writing II	3
MATH	2074	Technical Calculus II	4
MATH	7113	Economic Analysis for Engineering Technology	3
SPCH	1083	Effective Speaking	3
			16

Sixth			
CISY	4283	Internetworking II	3
ELET	7404	Embedded & RT Systems	4
	xxx3	Professional Elective	3
	xxx3	Upper Level Professional Elective	3
MATH	6114	Differential Equations	4
			17

Seventh			
BSET	7001	Senior Seminar & Project Design	1
ELET	5401	Certification Seminar	1
ELET	6103	Comp Architecture	3
ELET	7223	Adv. Telecomm Systems	3
MATH	7123	Statistics for Engineering Tech.	3
PHYS	8013	Modern Physics	3
CHEM	5013	Applied Chemical Principles	3
			17

Eighth			
BSET	8006*	Senior Internship <b>OR</b>	6
BSET	8003	Senior Technical Project <b>AND</b>	3
	xxx3	Upper Level Professional Elective	3
<b>And all students</b>			
	xxx3	General Education - Free Elective	3
	xxx3	Liberal A & S - Free Elective	3
	xxx3	Liberal A & S - Free Elective	3
			15

\* See Elective Sheet for four-year majors for Gen. Ed. & other types of electives

\*\* One-half of Gen. Ed. Silo for "Communication"

Internship Prerequisites: Minimum program GPA of 2.5 and minimum overall GPA of 2.0.

**GRADUATION REQUIREMENTS - Bachelor of Science (BS) Degree**

- 131 semester credit hours in eight-semester program
- 60 semester credit hours of liberal arts and sciences from at least seven of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- Minimum of 45 hours upper division
- Minimum of 24 hours upper division in major

- Minimum of 30 hours upper division in residence
- 2.0 or above cumulative grade point average, and 2.0 or above grade point average in major courses (BSET, CISY, ELET)
- Approval of department faculty

**CERTIFICATION OR LICENSURE**

The Bachelor of Science in computer engineering technology is recognized as a "professional degree" that qualifies for experience/education credit toward Professional Engineering (PE) licensure. Graduates from Alfred State's program are allowed six years of the required 12 years of education/experience credit and are eligible to take the Fundamentals of Engineering (FE), formerly called Engineer-in-Training (EIT), examination upon graduation.

### COMPUTER INFORMATION SYSTEMS

#### AAS Degree – Code #0581

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The integration of computers into the workplace is progressing at a rapid pace. As more organizations install and employ these networks, a need has developed for the “resident expert” to administer the system, install software, establish security, and train others. Graduates of the computer information systems (CIS) program are well positioned to serve that need. A foundation of programming, database, and networking is provided.

The CIS program is oriented toward today’s changing computer environment. It is very contemporary, stressing computer programming, software applications, Web development, and network installation and management. Students can complete the Cisco Certified Network Association curriculum and have a strong foundation to pursue professional certifications for CompTIA A+, Network+, and CCNA. The college has a Pearson Vue testing center.

A laptop computer is required for students entering the computer information systems program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

#### PROGRAM STUDENT LEARNING OUTCOMES

- Communicate effectively and efficiently, both orally and in writing.
- Employ critical thinking and problem solving skills in developing solutions to problems.
- Create and modify functional, clear, concise software design and implementation with current programming languages.
- Create functional web pages using web scripting languages.
- Install, configure, troubleshoot and administer a simple network
- Demonstrate proficiency either in two or more operating systems or two or more database systems. Install, configure, troubleshoot and administer a simple network
- Demonstrate proficiency in basic office automation software
- Solve problems in a team setting as a team member
- Identify issues of professional ethics including copyright laws, plagiarism, and professional etiquette
- Solve applied mathematical problems

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State computer information systems graduates may enter directly into either the information security and assurance BTech, information technology: applications software development BTech, information technology: network administration BTech, information technology: Web development BTech, or technology management BBA degree program.

#### TRANSFER OPPORTUNITIES

To facilitate the transfer of graduates choosing to continue their education at the baccalaureate level, students are encouraged to make their intentions known to their academic adviser during their freshman year. Through the careful use of elective courses, students can realize excellent transfer credit.

Transfer into the information technology programs: network administration, Web development, and applications software development will place them at junior status.

#### OCCUPATIONAL OPPORTUNITIES

- Network Management
- Systems Administration
- Computer Technology
- Computer Support
- Computer Programming
- Web Development
- Network Administrators

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 18 percent are employed; 82 percent transferred to continue their education.

#### RELATED PROGRAMS

Computer & Electronic Systems Technician  
Computer Science  
Computer Engineering Technology  
Information Security and Assurance  
Information Technology: Applications Software Development  
Information Technology: Network Administration  
Information Technology: Web Development

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry\*  
Recommended: Algebra 2/Trigonometry

\* Students who place into intermediate algebra will be required to take one additional mathematics course.

**Computer Information Systems - AAS Degree**

TYPICAL FOUR-SEMESTER PROGRAM

First			
CISY	1023	Intro. to Information Technology	3
CISY	1123	Intro. to Computer Prog. for IT OR	
CISY	1113	Intro. to Comp. Programming	3
COMP	1503	Freshman Composition	3
	xxx3	Gen. Ed. Elective - Social Science	3
	xxx3	Gen. Ed. Elective - Other	3
			15

Second			
CISY	4103	Visual Programming & Dev.	3
CISY	2143	Microcomputer Systems	3
LITR	2603	Intro. to Literature	3
MATH	xxx3	College Algebra or Higher*	3
CISY	2153	Database Appl. & Prog. I	3
HPED	xxx1	Physical Education	1
			16

Third			
CISY	4033	Networking I	3
CISY	3223	Intro. to Web Page Development	3
MATH	1123	Statistics I OR	
MATH	2124	Statistics Methods & Analysis	3-4
ACCT	1124	Financial Accounting	4
	xxx3	Professional Elective	3
			16-17

Fourth			
CISY	4053	Linux OS & Scripting OR	
CISY	5403	Database Concepts (advanced)	3
SPCH	1083	Effective Speaking	3
	xxx3	Gen. Ed. Elective - Other	3
	xxx3	Professional Elective	3
	xxx3	Professional Elective	3
			15

\* If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

Adviser-approved mathematics course not to include MATH 1003, MATH 1013, MATH 2003, or MATH 1143.

Professional electives may include CISY, business, and selected courses from math or engineering as approved by the adviser.

**GRADUATION REQUIREMENTS**

Must complete a minimum of 24 credit hours of required CISY courses and nine credit hours of professional electives approved by adviser with a minimum 2.0 cumulative index. Twenty credit hours of liberal arts courses, a minimum overall cumulative index of 2.0, along with other requirements as stated in the College Academic Regulations, must be met by candidates of the AAS degree. Must successfully complete a minimum of 62 credit hours of course work and one semester of physical education.

## PROGRAMS AT ALFRED STATE

### COMPUTER SCIENCE

#### AS Degree – Code #0532

The computer science program at Alfred State was one of the originally established programs in the SUNY (State University of New York) system. It is a comprehensive program, which includes both the study of the underlying theories of computing as well as the specific applications of information manipulation and problem solving.

Most students who enroll in computer science do so with the intent of continuing their education after graduating from Alfred State. The degree granted is an Associate in Science (AS), and supports exceptionally well the needs of the transfer student. Though primarily a “transfer” program, many students do, however, elect to enter the job market upon graduation or continue at Alfred State pursuing a bachelor degree.

A laptop computer is required for students entering the computer science program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

#### PROGRAM STUDENT LEARNING OUTCOMES

- Communicate effectively and efficiently, both orally and in writing.
- Employ critical thinking and problem solving skills in developing solutions to problems.
- Create and modify functional, clear, concise software design and implementation with current programming languages.
- Create functional web pages using web scripting languages.
- Demonstrate the scientific method in one area of natural science.
- Assess and implement appropriate data structures within a programming project
- Demonstrate proficiency in basic office automation software
- Solve problems in a team setting as a team member
- Identify issues of professional ethics including copyright laws, plagiarism, and professional etiquette
- Demonstrate proficiency with mathematical principles through the level of calculus or discrete.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State computer science graduates may enter directly into the technology management BBA degree program.

### TRANSFER OPPORTUNITIES

The primary focus of the computer science program is transfer. The AS degree granted is specifically designed to maximize transfer credit to four-year programs. Transfer into the information technology programs: network administration, Web development, and applications software development is possible with junior status with careful selection of courses for electives.

#### OCCUPATIONAL OPPORTUNITIES

- Network Management
- Systems Administration
- Computer Engineering Technology
- Computer Support
- Computer Programming
- Database Administration
- Web Development

#### EMPLOYMENT STATISTICS

Employment and transfer rate: 100 percent. 50 percent employed; 50% transferred to continue their education.

#### RELATED PROGRAMS

Computer & Electronic Systems Technician  
Computer Information Systems  
Computer Engineering Technology  
Information Security & Assurance  
Information Technology: Applications Software Development

Information Technology: Network Administration  
Information Technology: Web Development

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/  
Trigonometry

Recommended: Pre-calculus, Physics

#### Computer Science - AS Degree

##### TYPICAL FOUR-SEMESTER PROGRAM

First			
CISY	1023	Intro. to Information Tech.	3
CISY	1113	Intro. to Computer Prog.	3
COMP	1503	Freshman Composition	3
MATH	xxx3	Pre-Calculus 1054 or above	3
SOCI	xxx3	Social Science Elective*	3
15			

Second			
CISY	4103	Visual Program'g & Devel.	3
LITR	2603	Introduction to Literature	3
MATH	1084	Calculus I	
OR			
MATH	2163	Discrete Mathematics	3-4
CISY	2153	Database Appl. & Prog. I	3
	xxx3	Gen. Ed. - Other	3
15-16			



Third			
CISY	4033	Networking I	3
CISY	3223	Intro. to Web Page Development	3
	xxx3	Open Elective	3
	xxx4	Gen. Ed. - Natural Science w/Lab	4
	xxx3	Professional Elective	3
			16

Fourth			
CISY	4053	Linux OS & Scripting	
<b>OR</b>			
CISY	5403	Database Concepts (advanced)	3
CISY	4003	Intro. to Data Structures	3
SPCH	1083	Effective Speaking	3
	xxx3	Gen. Ed. "Other"	3
	xxx3	Liberal Arts Elective	3
HPED	xxx1	Physical Education	1
			16

\*Social science elective may include economics, history, political science, psychology, or sociology.

Professional elective may include CISY, business, and selected courses from math or engineering as approved by the adviser.

**GRADUATION REQUIREMENTS**

Must complete a minimum of 24 credit hours of required CISY courses and one professional elective approved by adviser with a 2.0 cumulative index. A minimum cumulative index of 2.0, along with other requirements as stated in the College Academic Regulations, must be met by candidates for the AS degree. A minimum of 62 credit hours of course work including one credit of physical education. Thirty credit hours in liberal arts are required.

## PROGRAMS AT ALFRED STATE

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### CONSTRUCTION ENGINEERING TECHNOLOGY

#### AAS Degree – Code #0577

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The technical education in this program is a well-designed balance of theoretical and laboratory studies, providing the graduate with a broad knowledge of civil engineering technology and the construction fields. This training provides the background which enables a person to progress to advanced technical and supervisory positions in the industry and reflects the changes occurring in the construction industry due to expanding computer technology and use of electronically controlled equipment.

The college sponsors an intern program with the NYS Asphalt Pavement Association and The National Asphalt Pavement Association which enables qualified students to work within this segment of the industry during the summer after the first year.

This program is accredited by the Engineering Technology Accreditation Commission, Accreditation Board for Engineering Technology, Inc. (ETAC/ABET), 111 Market Place - Suite 1050, Baltimore, MD 21202; (410) 347-7700. <http://www.abet.org>.

A laptop computer is required for students entering the construction engineering technology program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

A student who completes the AAS degree can complete the bachelor's degree in two additional years.

#### PROGRAM STUDENT LEARNING OUTCOMES

- An ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities;
- An ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge;
- An ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments;
- An ability to function effectively as a member of a technical team;
- An ability to identify, analyze, and solve narrowly defined engineering technology problems;

- An ability to apply written, oral, and graphical communication in both technical and nontechnical environments; and an ability to identify and use appropriate technical literature;
- an understanding of the need for and an ability to engage in self-directed continuing professional development;
- an understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity;
- a commitment to quality, timeliness, and continuous improvement.

#### PROGRAM EDUCATIONAL OBJECTIVES

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The construction engineering technology program produces graduates who:

1. Write, read, and orally present technical reports, letters, and projects that meet the standards of the profession;
2. Understand and are able to complete various activities related to construction such as interpret construction documents, draw plans using computer-aided drafting, complete an estimate, manage project activities, and be able to technically review construction materials used on the project;
3. Recognize the need for and have an ability to engage in continued formal education as well as lifelong learning.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State construction engineering technology graduates may enter directly into either the construction management engineering technology BS or technology management BBA degree program.

#### OCCUPATIONAL OPPORTUNITIES

- Construction Inspector
- Materials Tester
- Building Inspector
- Engineering Technician
- Estimator
- Sales Representative
- Installation Supervisor
- Quality Control Technician
- Code Enforcement Officer
- Structural Detailer
- Superintendent of Public Works
- Project Coordinator
- Construction Superintendent

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 27% employed in field; 73 percent transferred to continue their education.

**RELATED PROGRAMS**

Surveying Engineering Technology  
 Construction Management Engineering Technology

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2/Trigonometry  
 Recommended: Physics

**Construction Engineering Technology - AAS Degree**

TYPICAL FOUR-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
CIVL	1011	Civil AutoCAD	1
CIVL	1204	Surveying I	4
CIVL	1013	Portland Cement Conc	3
CIVL	1182	Civil Tech Graphics	2
MATH	1033	College Algebra or Higher*	3
			16

Second			
CIVL	2154	Qual. Control of Const.	4
CIVL	2204	Surveying II	4
PHYS	1024	General Physics	4
MATH	2043	College Trigonometry or Higher*	3
LITR	2603	Introduction to Literature	3
			18

Third			
CIVL	3554	Comm. Bldg.	4
CIVL	4104	Structural Design	4
PHYS	2023	General Physics II	3
MATH	1063	Technical Calculus I	3
	xxx3	Gen. Education Elective	3
			17

Fourth			
CIVL	4143	Contracts/Spec./Estimat'g.	3
CIVL	4144	Construction Mgt.	4
CIVL	7104	Land Development	4
CIVL	6113	Environmental Engr Tech.	3
	xxx3	Gen. Education Elective	3
			17

\* If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Math through technical calculus I must be completed. Freshman composition and introduction to literature must be taken.

Also required: One unit of physical education.

### CONSTRUCTION MANAGEMENT ENGINEERING TECHNOLOGY

#### BS Degree – Code #1603

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This program has a series of courses designed to familiarize the graduate with all aspects of construction management. Technical course work is combined with specific construction management courses as well as several business courses, giving the graduate a broad-based education that will provide the skills needed for a leadership role in today's construction business.

Students from the CMET programs won the 2000 Associated Schools of Construction Northeast Regional Heavy/Highway Construction Management Competition. Alfred State students compete annually against other colleges in the northeast that have construction management programs.

This program is accredited by the Engineering Technology Accreditation Commission, Accreditation Board for Engineering Technology, Inc. (ETAC/ABET), 111 Market Place - Suite 1050, Baltimore, MD 21202; (410) 347-7700, <http://www.abet.org>, as well as the American Council for Construction Education (ACCE), 1717 North Loop Road 1604 East, Suite 320, San Antonio, TX 78232.

A laptop computer is required for students entering the construction management engineering technology program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

Students can compete for scholarships given by the Associated General Contractors of New York.

Seniors in the BS program are required to take the Certified Professional Construction Level I exam prior to graduation.

#### PROGRAM STUDENT LEARNING OUTCOMES

- An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
- An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles and applied procedures or methodologies;
- An ability to conduct standard tests and measurements; to conduct, analyze, and

interpret experiments; and to apply experimental results to improve processes;

- An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
- An ability to function effectively as a member or leader on a technical team;
- An ability to identify, analyze, and solve broadly-defined engineering technology problems;
- An ability to apply written, oral, and graphical communication in both technical and nontechnical environments; and an ability to identify and use appropriate technical literature;
- An understanding of the need for and an ability to engage in self-directed continuing professional development;
- An understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity;
- A knowledge of the impact of engineering technology solutions in a societal and global context;
- A commitment to quality, timeliness, and continuous improvement.

#### PROGRAM EDUCATIONAL OBJECTIVES

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The construction management engineering technology program produces graduates who:

1. Write, read, and orally present technical reports, letters, and projects that meet the standards of the profession;
2. Understand and are able to complete various activities related to construction such as interpret construction documents, draw plans using computer-aided drafting, complete an estimate, manage project activities, and be able to technically review construction materials used on the project;
3. Recognize the need for and have an ability to engage in continued formal education as well as lifelong learning;
4. Analyze and synthesize using industry standard software estimates, schedules, and project administration data;
5. Successfully interact with clients, owners, co-workers, government agencies, and other construction-related entities;
6. Manage multidisciplinary teams in order to successfully complete a project.

## WORK EXPERIENCE

Students typically gain work experience through summer employment with construction companies.

## OCCUPATIONAL OPPORTUNITIES

- Project Manager
- Estimator
- Project Scheduler
- Planner
- Construction Supervisor
- Plant Manager
- Construction Equipment Sales
- Materials Sales
- Facilities Management

## EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 84 percent are employed in the field; 16 percent transferred to continue their education.

## RELATED PROGRAMS

Architectural Engineering Technology  
 Building Trades: Building Construction  
 Construction Engineering Technology

## ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/  
 Trigonometry, SAT and/or ACT  
 scores with a recommended  
 combined SAT score of 1,000  
 (critical reading and math) or a  
 composite ACT score of 21.

Recommended: Physics

## Construction Management Engineering Technology - BS Degree

### TYPICAL EIGHT-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
CIVL	1011	Civil AutoCAD	1
CIVL	1204	Surveying I	4
CIVL	1013	Portland Cement Conc.	3
CIVL	1182	Civil Tech Graphics	2
MATH	1033	College Algebra or Higher*	3
			16

Second			
CIVL	2154	Qual. Control of Mat.	4
CIVL	2204	Surveying II	4
PHYS	1024	General Physics I	4
MATH	2043	College Trigonometry or Higher*	3
LITR	2603	Introduction to Literature	3
			18

Third			
CIVL	3554	Comm. Bldg.	4
CIVL	4104	Structural Design	4
PHYS	2023	General Physics II	3
MATH	1063	Technical Calculus I	3
	xxx3	Gen. Education Elective	3
			17

Fourth			
CIVL	4143	Contracts/Spec./Estimat'g.	3
CIVL	4144	Construction Mgt.	4
CIVL	7104	Land Development	4
CIVL	6113	Environmental Engr. Tech.	3
	xxx3	Gen. Education Elective	3
			17

Fifth			
SPCH	1083	Effective Speaking	3
ECON	1013	Macroeconomics	3
COMP	5703	Technical Writing II	3
CIVL	7213	Construction Systems	3
	xxx3	Gen. Education Elective	3
			15

Sixth			
CHEM	5013	Applied Chemical Principles	3
CIVL	6214	Advanced Estimating	4
CIVL	6212	Construction Safety	2
ACCT	5043	Accounting Perspectives	3
	xxx3	Gen. Education Elective	3
CIVL	6123	Mechanical Systems	3
			18

Seventh			
MATH	1123	Statistics I	3
CIVL	7223	Construction Project Planning	3
MATH	7113	Economic Analysis for Engineering Technology	3
TMGT	7153	Prin. of Management	3
	xxx3	Gen. Education Elective	3
			15

Eighth			
BUAD	7273	Organizational Behavior	3
CIVL	5213	Foundations & Concrete Construction	3
CIVL	8123	Construction Project Administration	3
BUAD	3043	Business Law I	3
	xxx3	Gen. Education Elective	3
ECON	2023	Microeconomics	3
			18

\*If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

Also required: One unit of physical education.

Must meet 7 of the 10 General Education areas.

### COURT AND REALTIME REPORTING

#### AAS Degree – Code #0647

#### Certificate – Code #2152

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Melissa Blake, Program Coordinator  
Email address: blakemj@alfredstate.edu

These programs, certified by the National Court Reporters Association, prepare students for careers as official, freelance, realtime reporters and captioners. Jobs are available for competent court reporters to work in all fields of reporting, including realtime and closed captioning for the hearing impaired.

One feature of the Court and Realtime Reporting program is the development of high speed recording skills to 225-plus words per minute through the use of realtime translation machine shorthand and computer aided transcription (CAT). In the first year, students learn realtime shorthand theory and develop computer skills that will enhance their overall employability. The prerequisite for entering the specialized court reporting course in the summer session is the attainment of a minimum recording speed of 90 words per minute. Development of skills in recording and transcribing specialized court reporting matter starts in the summer term and continues through the second year. Students in their senior year elect to go in to judicial or broadcast captioning.

All entering freshmen are required to purchase their own computerized shorthand machine and student software in order to practice realtime writing outside the class. The approximate cost of this equipment is \$2,000 and should be included in college expenses.

The college offers court reporting-related courses (courses with a CTRP prefix) online, making it possible for students who transfer in credit or attend other colleges to earn their degree from Alfred State in court and realtime reporting or court reporting and captioning. The online approach still requires two years of course work and does not change any of the standards reflected in graduation requirements for all students. This approach is designed for those who are currently working and seeking a change in career, single parents, or individuals who cannot attend a college campus.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Develop a shorthand recording speed on five minutes of unfamiliar dictation with at least 95

percent accuracy in each of the following areas: Literary at 180 wpm, Jury Charge at 200 wpm, and two-voice at 225 wpm.

- Write a dictated list with 95 percent accuracy using advanced shorthand theory, special abbreviations and phrasing principles applicable to legal and reporting work.
- Perform readback and analysis of shorthand notes.
- Perform proper transcription and various other functions using the computer.
- Translate two-voice and multi-voice testimony, including medical and technical material, literary, jury charge dictation, and dictation containing current events at various speeds.
- Utilize shorthand theory to write three unfamiliar literary material at a minimum of 180 wpm and to have the computer properly transcribe the dictation at 96 percent accuracy without editing and submit unedited captioned translations of three (3) 15-minute programs on varied topics for course evaluation taken from the internship experience.
- Analyze and describe various aspects of the technology of court reporting and captioning.
- Apply the rules of grammar, spelling, and punctuation, and capitalization of transcripts.
- Apply proper legal, medical, and anatomical terminology in transcription.
- Written & oral communication (appropriate to degree level and type)
- Critical thinking (problem solving, reasoning skills appropriate to degree level and type)

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State Court and Realtime Reporting AAS graduates may enter directly into the technology management BBA degree program at Alfred State.

#### OCCUPATIONAL OPPORTUNITIES

- Official court and hearing reporters
- General freelance reporters
- Realtime and closed-captioning reporters
- Legal office administration and scoping

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent - 89 percent are employed; 11 percent transferred to continue their education.

#### RELATED PROGRAMS

- Technology Management (BBA)

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra  
 Recommended: Geometry and Algebra 2/  
 Trigonometry

**Court and Realtime Reporting - AAS Degree**

TYPICAL FOUR-SEMESTER PROGRAM (on campus and online)

First			
CTRP	1174	Realtime Writing Theory I	4
BUAD	1103	Keyboarding	3
BUAD	1543	Grammar	3
COMP	1503	Freshman Composition	3
	xxx3	Gen. Ed. Elective	3
			16

Second			
CTRP	2274	Realtime Writing Theory II	4
CTRP	3373	Computer Aided Transcription	3
	xxx3	Humanities Gen. Ed. Elective	3
	xxx3	Gen. Ed. Elective	3
			13

Summer Session (required)			
CTRP	3163	Speed Bldg. I for Reporting/Caption	3
CTRP	3363	Tech. for Reporting/Captioning	3
			6

Third			
CTRP	4265	Speed Bldg. II for Reporting/Captioning	5
CTRP	2603	Personal Dictionary Prod./Maintenance	3
	xxx3	Business Law I OR Medical Term.	3
SPCH	1083	Effective Speaking	3
	xxx3	Gen. Ed. Elective	3
			17

Fourth			
CTRP	4365	Speed Bldg. III for Reporting/Captioning	5
CTRP	4602	Internship & Practicum for R/C	2
CTRP	4634	Procedures for Reporting/Captioning	4
	xxx3	Business Law I or Medical Term.	3
	xxx3	Gen. Ed. Elective	3
			17

Total Credit Hours: 70

\* Students may select one of these general education requirements (math, science, psychology, sociology) for each semester.

\*\* Students may select BUAD 3043 - business law I or MEDA 1133 - medical terminology in either semester.

Also required: one unit of physical education.

**GRADUATION REQUIREMENTS**

In addition to the Associate of Applied Science degree requirements, the Business department requires a 2.0 grade point average in required court reporting subjects. All courses listed must be satisfactorily completed and a minimum of 62 credit hours earned. Court reporting students must also meet all the NCRA requirements as stated in the course objectives, including the passing of

three, five-minute tests on unfamiliar matter with 95 percent accuracy on two-voice material at 225 wpm, jury charge material at 200 wpm, and literary material at 180 wpm; two five-minute timed writings in keyboarding from unfamiliar material at a minimum of 60 gross wpm with a maximum of five errors; the completion of 40 verified hours of internship experience, including the production of a 40-page transcript; the transcription of a simulated RPR skills test at RPR speed levels in three hours; and the production of accurate transcripts using computer-aided technology as stated in the course outlines. Captioning students must write three (3) five-minute, 180-wpm literary tapes with 1.4 syllabic density at 96 percent accuracy; prepare a captioned translation evaluation taken from the internship experience; and complete at least 25 verified hours of actual writing time and 15 hours of research and dictionary preparation during the internship.

**Court Reporting and Captioning - Certificate**

TYPICAL FOUR-SEMESTER PROGRAM (on campus and Internet)

First			
CTRP	1174	Realtime Writing Theory I	4
BUAD	1543	Grammar*	3
			7

Second			
CTRP	2274	Realtime Writing Theory II	4
CTRP	3373	Computer Aided Transcription**	3
MEDR	1133	Medical Terminology	3
			10

Summer Session (required)			
CTRP	3163	Speed Bldg. I for Reporting/Caption***	3
CTRP	3363	Tech. for Reporting/Captioning****	3
			6

Third			
CTRP	4265	Speed Bldg. II for Reporting/Captioning	5
CTRP	2603	Personal Dictionary* Prod./Maintenance	3
			8

Fourth			
CTRP	4365	Speed Bldg. III for Reporting/Captioning	5
CTRP	4602	Internship & Practicum for R/C (Summer and Spring)	2
CTRP	4634	Procedures for Reporting/Captioning**	4
			11

Total Credit Hours: 42

\* Fall only

\*\* Spring only

\*\*\* Online only

\*\*\*\* Summer and Fall

**PROGRAMS AT ALFRED STATE**

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**GRADUATION REQUIREMENTS**

1. A cumulative overall index of at least 2.0 is required in order to graduate.
2. All CTRP skill writing classes must be taken and passed at Alfred with a passing grade of "C" or better.
3. The internship course is completed off campus.
4. All students are required to take CTRP 3163 in the summer.
5. Be sure to check for prerequisite requirements.

SOC Occupation Listings:  
23-2091.00 Court Reporters

Costs for entire program completed in normal time (in-state):  
Tuition and required fees: \$11,640.80  
Estimated costs of books and supplies: \$4,990.00  
Room and Board charges for living on campus: N/A  
Additional cost information can be found at [www.alfredstate.edu/paying-for-college/tuition-and-costs](http://www.alfredstate.edu/paying-for-college/tuition-and-costs).

Median Cumulative Loan Debt for students in the program between July 1, 2012 and June 30, 2013:  
Median Federal Student Loan debt: \$3,250.00  
Median Private Loan debt: \$0.00  
Median Institutional financing plan debt: \$0.00

The on-time completion rate for student's completing the program between July 1, 2011 and June 30, 2012 within the normal time using the typical semester recommendations as listed is 25 percent.

The job placement rate for students who completed their program between July 1, 2009 through June 30, 2011 can be found in the following chart.

Employment and Transfer Report  
Employment and Transfer Rate: N/A

Survey Details	2009	2010
Receiving Degrees	-	1
Responding to Survey	-	1 (100%)
Employed	-	1 (100%)
Employed in Field	-	1 (100%)
Transferred	-	-
Unemployed Seeking Employment	-	-
Unemployed/Not Seeking Employment	-	-
Salary Range	Not Available	



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**CULINARY ARTS****AOS Degree – Code #0578**

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The courses train students in the principles applied to culinary arts. The goal is to prepare men and women for supervisory trainee positions, food production positions, or culinary arts positions which require special skills and knowledge of food, business, and human relations. By learning the fundamental culinary principles basic to the food service industry and employing the techniques of food planning, preparation, and supervision in the lab classes, the students develop skills, confidence, and judgment.

During the second year, students put into practice techniques of personnel management and supervision. These courses help the students to understand themselves and their fellow students and to develop attitudes necessary for success in the field.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Interpret and comply with prevailing food safety regulations as demonstrated by successful certification.
- Create products from complex recipes.
- Successfully vie for employment in the food service industry.
- Productively utilize typical culinary equipment.
- Establish product and plate cost for menu items.
- Demonstrate the relationship between menu, equipment, layout and design.

**WORK EXPERIENCE REQUIREMENTS**

The department requires that all students obtain an approved job in the food industry for a minimum of 320 hours of employment during the summer between the first and second years of the program. This is to enhance skill development and improve career advancement after graduation.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State culinary arts graduates may enter directly into the technology management BBA degree program.

**OCCUPATIONAL OPPORTUNITIES**

- Caterer
- Entrepreneur
- Line Cook
- Garde Mange
- Restaurant Cook
- Broiler Cook

- Hospital Dietary
- Food Service Steward
- Short Order Cook
- Chef
- Food Sales Rep
- Assistant Food Management Trainee
- Health Care Food Supervisor
- Assistant Food Manager
- Cafeteria Supervisor
- Dining Room Manager
- Institutional Food Cook
- Food Marketing Rep

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 90 percent are employed; 10 percent transferred to continue their education.

**EXPENSES**

In addition to regular college expenses, the student must purchase a probe thermometer, calculator, uniform package, and uniform laundry service from the Alfred State Campus Bookstore. Uniforms may cost approximately \$360-460, depending on the size ordered. The uniform laundry service is approximately \$80 per semester. All culinary arts students are required to purchase a meal plan. First semester textbooks cost approximately \$500 and approximately \$100 each succeeding semester.

**RELATED PROGRAMS**

Culinary Arts: Baking, Production and Management

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Recommended: In-depth knowledge of basic math, reading, and writing skills.

**TECHNICAL STANDARDS**

Applicants in the culinary arts program must meet the following physical requirements:

- Perform lab functions while standing on their feet for extended periods of time (up to five hours) daily.
- Be proficient in reading (for guest checks, recipes, and instructional manuals) and mathematics (for recipe conversion, cost control, and calculations associated with food production and service).
- Write with sufficient clarity for communication with faculty, kitchen personnel, and guests.
- Lift 40 pounds from floor to eye level.
- Orally communicate with people six to 10 feet away.
- Visually identify degree of product doneness.
- Walk on a slippery floor while carrying 40 pounds with caution and safety.

## PROGRAMS AT ALFRED STATE

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- Handle kitchen equipment, including knives, with dexterity and safety.

### CERTIFICATION OR LICENSURE

Students may earn sanitation certification from the Educational Foundation of the National Restaurant Association as part of the program.

### Culinary Arts - AOS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
FDSR	1084	Sanitation & Food Safety	4
FDSR	1143	Menu Planning	3
FDSR	1373	Foods, Ingredients, and Products	3
FDSR	1478	Quantity Food Lab Unit I	8
			18

Second			
FDSR	2043	Fund. of Nutrition	3
FDSR	2183	Purchasing Techniques	3
FDSR	2253	Hospitality Cost Control	3
FDSR	2479	Quantity Food Lab Unit II	9
			18

Third			
FDSR	3163	Furnishing & Equipment	3
FDSR	3253	Beverages	3
FDSR	3353	Hospitality Personnel Relations I	3
FDSR	3479	Quantity Food Lab Unit III	9
			18

Fourth			
FDSR	4032	Facilities Planning & Energy Conservation	2
FDSR	4163	Advanced Cuisine	3
FDSR	4255	Hospitality Personnel Relations II	5
FDSR	4478	Catering	8
			18

### GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a C average. Note: students must pass 1478 before taking 2479, pass 2479 before taking 3479, and pass 3479 before taking 4478.

### CULINARY ARTS: BAKING, PRODUCTION & MANAGEMENT

#### AOS Degree – Code #0423

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To meet the demand for skilled bakers, the program incorporates 1,350 hours of hands-on production experience, of which approximately 80 percent is concentrated in bakery training. The classroom includes detailed instruction in methods, ingredients, measurements, controls, equipment, and merchandising. The production for breakfast, lunch, and dinner requirements is built into one daily schedule.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Interpret and comply with prevailing food safety regulations as demonstrated by successful certification.
- Create products from complex formulas.
- Successfully vie for employment in the food service industry.
- Competently utilize typical bakery equipment.
- Establish product and plate cost for bakery menu items.
- Employ fundamentals in the layout and design of a bakery operation.

#### WORK EXPERIENCE REQUIREMENTS

The department requires that all students obtain an approved job in the baking industry for a minimum of 320 hours of employment during the summer between the first and second years of the program. This is to enhance skill development and improve career advancement after graduation.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State culinary arts: baking, production and management graduates may enter directly into the technology management BBA degree program.

#### OCCUPATIONAL OPPORTUNITIES

- Baker
- Caterer
- Pastry Chef
- Grocery Store Baker
- Commercial Baker & Management

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 63 percent are employed; 37 percent transferred to continue their education.

#### EXPENSES

In addition to the regular college expenses, the student must purchase decorating tips, a probe thermometer, calculator, uniform package, and

uniform laundry service from the Alfred State Campus Bookstore. Uniforms may cost approximately \$360-460, depending on the size ordered. The uniform laundry service is approximately \$80 per semester. All culinary arts: baking production & management students are required to purchase a meal plan. First semester textbooks cost approximately \$500 and approximately \$100 each succeeding semester.

#### RELATED PROGRAMS

Culinary Arts

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: In-depth knowledge of basic math, reading, and writing skills.

#### TECHNICAL STANDARDS

Applicants in the culinary arts: baking, production and management program must meet the following physical requirements:

- Perform lab functions while standing on their feet for extended periods of time (up to five hours) daily.
- Be proficient in reading (for guest checks, recipes, and instructional manuals) and mathematics (for recipe conversion, cost control, and calculations associated with food production and service).
- Write with sufficient clarity for communication with faculty, kitchen personnel, and guests.
- Lift 40 pounds from floor to eye level.
- Orally communicate with people six to 10 feet away.
- Visually identify degree of product doneness.
- Walk on a slippery floor while carrying 40 pounds with caution and safety.
- Handle kitchen equipment, including knives, with dexterity and safety.

#### CERTIFICATION OR LICENSURE

Students may earn sanitation certification from the Educational Foundation of the National Restaurant Association as part of the program.

## PROGRAMS AT ALFRED STATE

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### Culinary Arts: Baking, Production & Management - AOS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
FDSR	1084	Sanitation & Food Safety	4
FDSR	1153	Intro. to Baking	3
FDSR	1373	Foods, Ingredients & Products	3
FDSR	1578	Quantity Food & Baking Lab Unit I	8
			18

Second			
FDSR	2043	Fund. of Nutrition	3
FDSR	2183	Purchasing Techniques	3
FDSR	2253	Hospitality Cost Control	3
FDSR	2489	Quantity Food & Baking Lab Unit II	9
			18

Third			
FDSR	3163	Furnishing & Equip.	3
FDSR	3293	Intermediate Baking	3
FDSR	3353	Hospitality Personnel Relations I	3
FDSR	3489	Baking Lab Unit III	9
			18

Fourth			
FDSR	4043	Advanced Baking	3
FDSR	4255	Hospitality Personnel Relations II	5
FDSR	4488	Baking Lab Unit IV	8
FDSR	4032	Facilities Planning & Energy Conservation	2
			18

### GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average. Note: students must pass 1578 before taking 2489, pass 2478 before taking 3489, and pass 3489 before taking 4488.

**DIGITAL MEDIA AND ANIMATION****AAS Degree – Code #5606****BS Degree – Code #2018**

The emerging field of computer imaging and animation is impacting virtually every industry and profession. The digital media and animation program provides students with a broad range of technical, creative, and problem-solving skills to facilitate their employment in new media and animation. At the core of the program is an eight-semester sequence of studio courses that enhances individual artistic creativity and provides instruction in the traditional arts and industry standard computer graphics software.

A laptop computer is required for students entering the digital media and animation program. Laptop specifications are available at [www.alfredstate.edu/academics/macbook-pro](http://www.alfredstate.edu/academics/macbook-pro).

**PROGRAM STUDENT LEARNING OUTCOMES (AAS DEGREE PROGRAM)**

- Demonstrate adaptability/flexibility with technology and communicate verbally using specific terminology associated with the software, hardware, and industry,
- Illustrate critical thinking by completing problem solving activities,
- Demonstrate a strong work ethic through time management and quality works,
- Communicate in writing an analysis of their work as well as the work of others,
- Visually analyze their own work, as well as the work of others, in critiques, presentations, writing, and other activities,
- Demonstrate knowledge of the history and theory relevant to digital media and animation through writing, oral presentations, and incorporation of such knowledge into course assignments.

**PROGRAM STUDENT LEARNING OUTCOMES (BS DEGREE PROGRAM)**

- Construct a body of work that will secure employment or transfer to a four year program.
- Demonstrate adaptability/flexibility with technology by using multiple computer software packages and platforms.
- Communicate verbally using specific terminology associated with the software, hardware, and industry.
- Illustrate critical thinking by completing problem solving activities.
- Demonstrate a strong work ethic through time management and quality works.

- Visually analyze their own work , as well as the work of others, in critiques, presentations, writing, and other activities.
- Demonstrate knowledge of the history and theory relevant to digital media and animation through writing, oral presentations, and incorporation of such knowledge into studio assignments.
- Demonstrate adaptability/flexibility with technology by using multiple computer software packages and platforms.
- Determine and implement factors that generate successful teamwork within a professional environment.
- Obtain communication skills (versed in communication theory) by learning specific terminology associated with the software, hardware, and industry.
- Demonstrate critical thinking by completing rigorous problem solving activities.
- Create a professional presentation, evaluate, and revise.
- Produce work within constraints that reflect industry standards.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State digital media and animation AAS graduates may enter directly into either the digital media and animation BS or technology management BBA degree program.

**OCCUPATIONAL OPPORTUNITIES**

- Animation
- Interactive Media
- Digital Imaging
- Media Design
- Fine Art

**EMPLOYMENT STATISTICS**

AAS: Employment and transfer rate of 100 percent – 20 percent are employed; 80 percent transferred to continue their education.

BS: Employment and transfer rate of 100 percent - 67% are employed; 33 percent transferred to continue their education.

**RELATED PROGRAMS**

Computer Technology  
Information Technology: Web Development

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS (AAS Degree)**

Required: Algebra, Geometry  
Recommended: Algebra  
2/Trigonometry

## PROGRAMS AT ALFRED STATE

### ENTRANCE REQUIREMENT/RECOMMENDATIONS (BS Degree)

Required: Algebra, Geometry, SAT and/or ACT scores with a recommended combined SAT score of 1,000 (critical reading and math) or a composite ACT score of 21.

Recommended: Algebra 2/Trigonometry

### Digital Media and Animation – AAS and BS

#### DIGITAL MEDIA AND ANIMATION (AAS DEGREE)

##### TYPICAL FOUR-SEMESTER PROGRAM

First			
DGMA	1403	Computer Animation I	3
DGMA	1423	Intro. to Visual Communication	3
DGMA	1413	Foundations: Form/Space	3
DGMA	1333	Survey of Animation & Visual Effects	3
COMP	1503	Freshman Composition	3
			15

##### Second

DGMA	2403	Computer Animation II	3
FNAT	2423	3D Design/Color	3
FNAT	2433	Figure and Motion	3
FNAT	1313	Art History	3
LITR	2603	Introduction to Literature	3
	xxx3	Gen. Ed./Math Elective	3
			18

##### Third

DGMA	3403	Computer Animation III	3
DGMA	3203	Interactive Authoring	3
SOCI	1163	General Sociology	3
	xxx3	Gen. Ed./LAS Elective	3
	xxx3	Gen. Ed./Natural Sciences Elective	3
HPED	xxx1	Physical Education	1
			16

##### Fourth

DGMA	4443	Computer Animation IV	3
DGMA	4103	Interactive Design	3
SPCH	1083	Effective Speaking	3
FNAT	3513	Art History II	3
LITR	2813	Intro. to Film	3
COMP	3703	Technical Writing I	3
			18

Minimum of "C" is required for all core courses.

Students are required to complete a digital portfolio assignment and annual review to meet graduation requirements. A 2.75 GPA in core courses is required to go from AAS to BS degree. Digital media & animation faculty will examine the digital portfolio of students who do not meet this requirement and determine if the student's work meets the standards for entry into the BS program.

Also required - One unit of physical education.

### DIGITAL MEDIA AND ANIMATION (BS DEGREE)

#### TYPICAL FOUR-SEMESTER PROGRAM

##### First

DGMA	1403	Computer Animation I	3
DGMA	1423	Intro. to Visual Communication	3
DGMA	1413	Foundations: Form/Space	3
DGMA	1333	Survey of Animation & Visual Effects	3
COMP	1503	Freshman Composition	3
			15

##### Second

DGMA	2403	Computer Animation II	3
FNAT	2423	3D Design/Color	3
FNAT	2433	Figure and Motion	3
FNAT	1313	Art History	3
LITR	2603	Introduction to Literature	3
	xxx3	Gen. Ed./Math Elective	3
			18

##### Third

DGMA	3403	Computer Animation III	3
DGMA	3203	Interactive Authoring	3
SOCI	1163	General Sociology	3
	xxx3	Gen. Ed./LAS Elective	3
	xxx3	Gen. Ed./Natural Sciences Elective	3
HPED	xxx1	Physical Education	1
			16

##### Fourth

DGMA	4443	Computer Animation IV	3
DGMA	4103	Interactive Design	3
SPCH	1083	Effective Speaking	3
FNAT	3513	Art History II	3
LITR	2813	Intro. to Film	3
	XXX3	General Education/LAS Elective	3
			18

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Minimum of "C" is required for all core courses. A 2.75 GPA in core courses or comparable courses at another institution is required to guarantee admission into DGMA 5103, 5403 and 5603.

#### TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

##### Fifth

DGMA	5103	Production I	3
DGMA	5603	Interactive Media	3
DGMA	5403	Advanced Modeling, Texturing & Lighting	3
COMP	5703	Technical Writing II	3
SOCI	5213	Science, Technology and Society	3
			15

##### Sixth

DGMA	6103	Production II	3
DGMA	6203	Motion Graphics	3
DGMA	6413	Advanced Animation	3
	xxx3	Gen. Ed./LAS Elective (Upper Level)	3
	xxx3	Gen. Ed./Western Civilization <b>OR</b> Foreign Language	3
			15

**Seventh**

DGMA	7203	Senior Seminar	3
DGMA	7403	Senior Studio Project I	3
DGMA	7103	Community Service Project	3
	xxx3	Gen. Ed./LAS Elective	3
	xxx3	Gen. Ed./LAS Elective	3
			15

**Eighth**

DGMA	8105	Senior Student Project II	6
DGMA	8103	Portfolio II	3
	xxx3	Gen. Ed./LAS Elective	3
	xxx3	Gen. Ed./American History <b>OR</b>	
LITR		Other World Civilization	3
			15

Students must complete at least one course from 7 of the 10 SUNY General Education silos.

Minimum of "C" is required for all core courses.

Students are required to complete a digital portfolio assignment and an annual review to meet graduation requirements.

## PROGRAMS AT ALFRED STATE

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### DRAFTING/CAD

#### Code # 0450

Karen M. Young, Program Coordinator  
Email address: [youngkk@alfredstate.edu](mailto:youngkk@alfredstate.edu)

The drafting/CAD (computer-aided drafting) program provides students with the CAD skills and knowledge to qualify for entry-level positions in a wide variety of industries.

During the first year, students focus on gaining a thorough understanding of the fundamentals of CAD drafting, tolerancing, manufacturing processes, and mathematics.

The senior year is devoted to a specific drafting/CAD discipline which the student selects: model building & process piping drawing or technical illustration.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Demonstrate proper visualization in various views of three-dimensional object by producing a multi-view drawing.
- Identify, select and apply the sectional view that is appropriate to show interior features for dimensioning.
- Demonstrate an understanding of manufacturing processes, shop terminology and machine operations.
- Calculate and apply tolerancing and the relationship between mating parts on assembly drawings.
- Through calculation, select various appropriate purchased parts for diverse applications.
- Apply the current welding processes and generate weldment drawings using industrial standards.
- Illustrate various exploded isometric drawing methods using standard technical practical applications.
- Demonstrate a working knowledge of the fundamentals of architectural drafting to complete a set of drawings.
- Solve practical drafting-related problems using accepted mathematical applications.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State drafting/CAD graduates may enter directly into the technology management BBA degree program.

#### OCCUPATIONAL OPPORTUNITIES

- Drafting Manager
- Field or Service Engineer

- CAD Operator
- Designer
- Mechanical Designer
- Parts Analyst
- Sales Representative
- Mechanical Drafter
- Controls Drafter

#### RELATED PROGRAMS

Drafting/CAD: Model Building & Process Piping Drawing

Drafting/CAD: Technical Illustration  
Mechanical Engineering Technology  
CAD/CAM Technology

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra

The first year will focus on gaining a thorough understanding of the fundamentals of traditional as well as CAD drafting. This will include production of industrially correct detail drawings, assembly drawings, and weldment drawings.

A laptop computer is required for students entering the drafting/CAD program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

#### TECHNICAL STANDARDS

Applicants in any of the drafting/CAD programs must meet the following physical requirements:

- Must be able to visually read computer monitor or laptop.
- Must be capable of using digitizing equipment.
- Must have good hand/eye coordination to operate the above.

#### Drafting/CAD - AOS Degree

##### TYPICAL FOUR-SEMESTER PROGRAM

First			
DCAD	1205	Intro. to Industrial Dftg.	5
DCAD	1305	Industrial Drafting I	5
DCAD	1405	Industrial Drafting II	5
DCAD	1053	Technical Calculations I	3
			18

Second			
DCAD	2205	Industrial Drafting III	5
DCAD	2305	Welding Drawing	5
DCAD	XXX5	Technical Elective	5
DCAD	2063	Technical Calculations II	3
			18



Third			
DCAD	3024	Layout & Detail	4
DCAD	3044	Fluid Power	4
DCAD	3104	Advanced Mech. Layout	4
DCAD	3023	GD&T	3
DCAD	2053	Intro. to Unigraphics	3
			<b>18</b>

Fourth			
DCAD	4125	Process Piping I	5
DCAD	xxx5	Technical Elective	5
DCAD	4335	CNC Machine Program'g.	5
DCAD	4003	Senior Project	3
			<b>18</b>

Second Semester Electives:

DCAD	2805	Draft'g. for Res. Construction	5
DCAD	4155	Technical Illustration I	5

Fourth Semester Electives:

DCAD	4225	Process Piping II*	5
DCAD	4155	Technical Illustration	5
DCAD	2805	Draft'g. for Res. Construction	5
DCAD	4900	Industrial Application	5

\*Prerequisite: DCAD 4125 process piping I

**GRADUATION REQUIREMENTS**

Students are required to earn a grade of “C” or higher in technical calculations I and II (DCAD 1053 & DCAD 2063) to be eligible for graduation. (Articulation is available in this area.) Articulation agreements are also available for 2805 drafting for residential construction.

## PROGRAMS AT ALFRED STATE

### DRAFTING/CAD: MODEL BUILDING & PROCESS PIPING DRAWING

#### AOS Degree – Code #0419

Karen M. Young, Program Coordinator  
Email address: youngkk@alfredstate.edu

Process piping is a specialized area of drafting which uses a language of its own to transmit necessary information for the construction of a project. To achieve this, each student gains the necessary understanding of piping processes for industries such as petroleum distillation, air separation, paper pulping, and chemical processes.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Demonstrate proper visualization in various views of three-dimensional object by producing a multi-view drawing.
- Identify, select and apply the sectional view that is appropriate to show interior features for dimensioning.
- Demonstrate an understanding of manufacturing processes, shop terminology and machine operations.
- Calculate and apply tolerancing and the relationship between mating parts on assembly drawings.
- Through calculation, select various appropriate purchased parts for diverse applications.
- Apply the current welding processes and generate weldment drawings using industrial standards.
- Illustrate various exploded isometric drawing methods using standard technical practical applications.
- Demonstrate a working knowledge of the fundamentals of architectural drafting to complete a set of drawings.
- Solve practical drafting-related problems using accepted mathematical applications.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State drafting/CAD: model building and process piping drawing graduates may enter directly into the technology management BBA degree program.

#### OCCUPATIONAL OPPORTUNITIES

- Pressure Vessel Designer
- Sales Representative
- Checker
- Field or Service Engineer
- Structural Detailer
- Process Technician

- Drafting Manager
- Process Piping Drafter
- Designer
- CAD Drafter
- Piping Designer
- Controls Drafter
- Parts Analysts

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 88 percent are employed; 12 percent transferred to continue their education.

#### RELATED PROGRAMS

Architectural Engineering Technology  
Mechanical Design Engineering Technology  
CAD/CAM Technology

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra

A laptop computer is required for students entering this program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

#### TECHNICAL STANDARDS

Applicants in any of the drafting/CAD programs must meet the following physical requirements:

- Must be able to visually read computer monitor or laptop.
- Must be capable of using digitizing equipment.
- Must have good hand/eye coordination to operate the above.

#### Drafting/CAD–Model Building & Process Piping Drawing - AOS Degree

##### TYPICAL FOUR-SEMESTER PROGRAM

First			
DCAD	1205	Intro. to Industrial Dftg.	5
DCAD	1305	Industrial Drafting I	5
DCAD	1405	Industrial Drafting II	5
DCAD	1053	Technical Calculations I	3
			18

Second			
DCAD	2205	Industrial Drafting III	5
DCAD	2305	Welding Drawing	5
DCAD	XXX5	Technical Elective	5
DCAD	2063	Technical Calculations II	3
			18

Third			
DCAD	3024	Layout & Detail	4
DCAD	3044	Fluid Power	4
DCAD	3104	Advanced Mech. Layout	4
DCAD	3023	GD&T	3
DCAD	2053	Intro. to Unigraphics	3
			18

## DRAFTING/CAD: MODEL BUILDING & PROCESS PIPING DRAWING

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### Fourth

DCAD	4125	Process Piping I	5
DCAD	xxx5	Technical Elective	5
DCAD	4335	CNC Machine Program'g.	5
DCAD	4003	Senior Project	3
			18

### Second Semester Electives:

DCAD	2805	Draft'g. for Res. Construction	5
DCAD	4155	Technical Illustration I	5

### Fourth Semester Electives:

DCAD	4225	Process Piping II*	5
DCAD	4155	Technical Illustration	5
DCAD	2805	Draft'g. for Res. Construction	5
DCAD	4900	Industrial Application	5

\*Prerequisite: DCAD 4125 process piping I

### GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average. Students are also required to have earned grades of "C" or better in technical calculations I & II. (Articulation is available in this area.)

A "C" or better for DCAD 4003 senior project is required.

## PROGRAMS AT ALFRED STATE

### DRAFTING/CAD: TECHNICAL ILLUSTRATION

#### AOS Degree – Code #0418

Karen Young, Program Coordinator  
Email address: youngkk@alfredstate.edu

Students enrolled in the technical illustration curriculum will enhance their drafting/CAD skills for various graphic publications.

Assignments apply 2D or 3D computer methods to create print-ready publications utilizing isometric exploded illustrations for instructions, Web sites, and pictorial graphic presentations.

Graduates can explore career paths and build their skills in drafting/CAD and technical illustration areas.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Demonstrate proper visualization in various views of three-dimensional object by producing a multi-view drawing.
- Identify, select and apply the sectional view that is appropriate to show interior features for dimensioning.
- Demonstrate an understanding of manufacturing processes, shop terminology and machine operations.
- Calculate and apply tolerancing and the relationship between mating parts on assembly drawings.
- Through calculation, select various appropriate purchased parts for diverse applications.
- Apply the current welding processes and generate weldment drawings using industrial standards.
- Illustrate various exploded isometric drawing methods using standard technical practical applications.
- Demonstrate a working knowledge of the fundamentals of architectural drafting to complete a set of drawings.
- Solve practical drafting-related problems using accepted mathematical applications.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State drafting/CAD: technical illustration graduates may enter directly into the technology management BBA degree program.

#### OCCUPATIONAL OPPORTUNITIES

The occupational opportunities are unique in the drafting/CAD: technical illustration program, as the graduate has an opportunity for employment as an

entry-level technical illustrator as well as opportunities in CAD occupations such as:

- Designer
- Purchaser/Sales Representative
- Checker
- Drafting Manager
- Field Service Engineer
- CAD Drafter
- Graphic Artist
- Multimedia Designer
- Commercial Artist
- Drafter

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent are employed.

#### RELATED PROGRAMS

Drafting/CAD: Model Building & Process Piping Drawing  
Mechanical Design Engineering Technology  
CAD/CAM Technology

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra

A laptop computer is required for students entering this program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

#### TECHNICAL STANDARDS

- Applicants in any of the drafting/CAD programs must meet the following physical requirements:
- Must be able to visually read computer monitor or laptop.
  - Must be capable of using digitizing equipment.
  - Must have good hand/eye coordination to operate the above.

#### Drafting/CAD: Technical Illustration - AOS Degree

##### TYPICAL FOUR-SEMESTER PROGRAM

First			
DCAD	1205	Intro. to Industrial Dftg.	5
DCAD	1305	Industrial Drafting I	5
DCAD	1405	Industrial Drafting II	5
DCAD	1053	Technical Calculations I	3
			18

Second			
DCAD	2205	Industrial Drafting III	5
DCAD	2305	Welding Drawings	5
DCAD	XXX5	Technical Elective	5
DCAD	2063	Technical Calculations II	3
			18

**Third**

DCAD	3024	Layout & Detail	4
DCAD	3044	Fluid Power	4
DCAD	3104	Advanced Mech. Layout	4
DCAD	3023	GD&T	3
DCAD	2053	Intro. to Unigraphics	3
			<b>18</b>

**Fourth**

DCAD	4125	Process Piping I	5
DCAD	xxx5	Technical Elective	5
DCAD	4335	CNC Machine Program'g.	5
DCAD	4003	Senior Project	3
			<b>18</b>

## Second Semester Electives:

DCAD	2805	Draft'g. for Res. Construction	5
DCAD	4155	Technical Illustration I	5

## Fourth Semester Electives:

DCAD	4225	Process Piping II*	5
DCAD	4155	Technical Illustration	5
DCAD	2805	Draft'g. for Res. Construction	5
DCAD	4900	Industrial Application	5

\*Prerequisite: DCAD 4125 process piping I

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average. Students are also required to have earned grades of "C" or better in technical calculations I & II.

(Articulation is available in this area.)

**ELECTRICAL CONSTRUCTION AND MAINTENANCE ELECTRICIAN**

**AOS Degree – Code #0498**

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This program provides in-depth instruction in the theories and principles of electricity. Principles of operation for electrical devices and equipment, and correct and safe operation of tools are covered. The student will study and learn to interpret and apply the requirements of the National Electric Code for designing electrical layouts, installation methods, and the maintenance, trouble shooting, and repair of electrical circuits and equipment.

During their two years of study, students will receive instruction and hands-on training in the laboratory for the following areas of specialization.

Residential Wiring	Magnetic Motor & Circuit Control
Raceway Systems	Programmable Logic Controllers (PLC)
Lighting Systems	Industrial/Commercial Wiring
Alarm Systems	Single & 3-Phase Electrical Power Systems
1 $\phi$ & 3 $\phi$ Motors	Hydraulics
Photovoltaic Systems	Wind Turbine Systems
Hazardous Location Wiring	Pneumatics
Process Measurements	Sustainable Energy

Practical (hands-on) application of the classroom theory is the main emphasis of the laboratory work. Electrical construction and maintenance electrician students assist in the design and installation of the electrical installations of many projects both on and off campus. Approximately one-third of lab time is spent on actual work sites, gaining real-life work experience.

Senior electrical students create completely automated projects in the lab using PLCs, pneumatics, electronics, and process controls.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Read, interpret, and apply technical information from the National Electrical Code.
- Perform basic and complex mathematical equations as they apply to the electrical trade
- Perform layout, design and installation for commercial and industrial wiring systems.
- Perform entry level layout, design, and installation of residential wiring systems.
- Apply combined knowledge to perform maintenance and troubleshooting procedures within the electrical trade.
- Students will develop an understanding to efficiency, design , and NEC requirements as pertaining to renewable energy systems
- Design, size, lay-out, and select equipment for the electrical systems within a residential dwelling.

**INTERNSHIP OPPORTUNITIES**

Summer internships are available to selected students through the International Brotherhood of Electrical Workers, Village of Wellsville Electric Department, and RADEC Corporation in Rochester, allowing students to gain additional, valuable trade experience.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State electrical construction and maintenance electrician graduates may enter directly into the technology management BBA degree program.

**TRANSFER OPPORTUNITIES**

The following local chapters of the International Brotherhood of Electrical Workers (IBEW) have signed articulation agreements with the electrical construction and maintenance electrician program at Alfred State.

IBEW Local 86, Rochester

IBEW Local 237, Niagara Falls

IBEW Local 241, Ithaca

The above IBEW Locals have agreed to award qualified graduates from Alfred State's electrical construction and maintenance electrician program, advanced placement in their apprenticeship programs. The degree of advanced placement to be awarded will be determined after review by the joint apprenticeship committee and after all conditions of the joint apprenticeship standards have been met.

## ELECTRICAL CONSTRUCTION AND MAINTENANCE ELECTRICIAN

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

### OCCUPATIONAL OPPORTUNITIES

- Designer
- Installer
- Construction Site Electrician
- Electrical Estimator
- Electrical Inspector
- PLC Programmer
- Salesperson
- Electrical Trade Union or Non-Union Apprentice
- Electric Motor Control Technician
- Private Contractor (Residential, Commercial)
- Industrial Maintenance Electrician
- Technical Field Representative
- Wholesale Representative
- Electrical Technician
- Wind Turbine Technician/Installer
- Photovoltaic Technician/Installer

### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 82 percent are employed; 18 percent transferred to continue their education.

### RELATED PROGRAMS

Building Trades: Building Construction  
Electrical Engineering Technology  
Electromechanical Engineering Technology

### SCHOLARSHIPS

Margaret Pfuntner Scholarship (awarded to a third-semester student)  
Joseph & Carmella Saccone Memorial Scholarship  
Electrical/Electronic Scholarship  
Matthew Burzycki Memorial Scholarship  
ALSTOM Power Inc./Air Preheater Scholarship

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra; good writing and reading comprehension skills

### TECHNICAL STANDARDS

Applicants in the electrical construction and maintenance electrician program must meet the following physical requirements:

- Must be able to visually translate information on analog or digital meters and other test equipment.
- Must be able to lift 50 pounds to eye level.
- Must be able to communicate orally with a person six-10 feet away.
- Must be able to read and decipher information found in technical manuals.

- Must be able to adhere to and perform all safety requirements.

### Electrical Construction & Maintenance Electrician - AOS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
ELTR	1156	Residential Wiring I	6
ELTR	1166	Res. Wiring Lab I A	6
ELTR	1176	Res. Wiring Lab I B	6
			18

Second			
ELTR	2156	Residential Wiring II	6
ELTR	2166	Res. Wiring Lab II A	6
ELTR	2176	Res. Wiring Lab II B	6
			18

Third			
ELTR	3156	Electrical Power Systems	6
ELTR	3326	Magnetic Motor Controls	6
ELTR	3306	Alarms & Special Systems	6
			18

Fourth			
ELTR	3336	Photovoltaic & Wind Turbine Systems	6
ELTR	3356	Programmable Controls for Industrial Automation	6
ELTR	3366	Industrial Automation & Process Control	6
			18

Note: Seniors will rotate through the six courses listed in the third and fourth semesters. These six are taught both semesters.

### GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

### ELECTRICAL ENGINEERING TECHNOLOGY

**AAS Degree – Code #0699**

**BS Degree – Code #0216**

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The electrical engineering technology programs provide the skills and occupational competence necessary for entry into the field as an electronic or electrical technician or technologist. The technician works with and is responsible for all the electronic equipment in the field. Thus, in addition to a firm foundation in electrical circuit concepts, a technician must have laboratory experience.

The electrical engineering technology programs emphasize basic knowledge and skills during the first year of the program. Studies include fundamental DC and AC circuit analysis and digital circuit logic to develop skills in use of electronic test equipment and in use of tools and printed circuit fabrication equipment. Laboratory experiments supplement classroom instruction and problem solving. Computer problem solving and simulation aid in course instruction.

The second year of the associate degree program continues the study of fundamental electronic circuits. The areas of study include microcontroller circuitry and programming, electronic communication circuits and systems, and IC circuit fabrication on silicon wafers.

Through a recent NYS Science, Technology, and Academic Research (NYSTAR®) grant opportunity, Alfred State College has implemented a new semiconductor manufacturing laboratory cleanroom facility. The new microelectronics laboratory has been equipped with Modu-Lab® semiconductor device manufacturing equipment, which gives students realistic exposure to the semiconductor planer processes, the technology in which integrated circuits or “chips” are manufactured. Integrated circuits are extremely small circuits fabricated on a monolithic semiconductor substrate. The rapid advances in the number of transistors per chip have led to integrated circuits with increases in capability and performance and have changed virtually every aspect of our lives over the past three decades. Oxidation, diffusion, photolithography, etch, and vapor deposition stations allow the students the opportunity to design, fabricate, and test their own simple integrated circuit devices while gaining experience in microelectronic fabrication techniques. The understanding of general processes gained through laboratory experiences

will prepare students to either continue their education in the microelectronics field or work in modern high-tech industrial laboratories found at companies like Advanced Micro Devices (AMD), Kionix, Micron Technology, Motorola, National Semiconductor, and Texas Instruments to name a few. Students interested in a career in semiconductor manufacturing technology should consult with their adviser regarding selection of appropriate elective course work during their first semester.

Both electrical engineering technology programs are accredited by the Engineering Technology Accreditation Commission, Accreditation Board for Engineering Technology, Inc. (ETAC/ABET), 111 Market Place - Suite 1050, Baltimore, MD 21202; (410) 625-2238, email: [accreditation@ABET.org](mailto:accreditation@ABET.org); website: <http://www.abet.org>.

A laptop computer is required for students entering the electrical engineering technology programs. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops). Some courses may require specialized tools and/or electronic components.

#### **PROGRAM STUDENT LEARNING OUTCOMES (PSLOs) - AAS Degree**

- An ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities.
- An ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge.
- An ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments.
- An ability to function effectively as a member of a technical team.
- An ability to identify, analyze, and solve narrowly defined engineering technology problems.
- An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature.
- An understanding of the need for and an ability to engage in self-directed continuing professional development.
- An understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity;.



- A commitment to quality, timeliness, and continuous improvement.
- The application of circuit analysis and design, computer programming, associated software, analog and digital electronics, and microcomputers, and engineering standards to the building, testing, operation, and maintenance of electrical/electronic(s) systems.
- The applications of physics or chemistry to electrical/electronic(s) circuits in a rigorous mathematical environment at or above the level of algebra and trigonometry.
- The applications of physics or chemistry to electrical/electronic(s) circuits in a rigorous mathematical environment at or above the level of algebra and trigonometry.
- The ability to analyze, design, and implement control systems, instrumentation systems, communications systems, computer systems, or power systems.
- The ability to apply project management techniques to electrical/electronic(s) systems.
- The ability to utilize statistics/probability, transform methods, discrete mathematics, or applied differential equations in support of electrical/electronic(s) systems.

### **PROGRAM STUDENT LEARNING OUTCOMES (PSLOs) - BS Degree**

- An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities.
- An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies.
- An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes.
- An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives.
- An ability to function effectively as a member or leader on a technical team.
- An ability to identify, analyze, and solve broadly-defined engineering technology problems.
- An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature.
- An understanding of the need for and an ability to engage in self-directed continuing professional development.
- An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity.
- A knowledge of the impact of engineering technology solutions in a societal and global context.
- A commitment to quality, timeliness, and continuous improvement.
- The application of circuit analysis and design, computer programming, associated software, analog and digital electronics, and microcomputers, and engineering standards to the building, testing, operation, and maintenance of electrical/electronic(s) systems.

### **PROGRAM EDUCATIONAL OBJECTIVES (PEOs)**

The AAS in electrical engineering technology program produces graduates who:

- Apply knowledge of mathematics and science using critical thinking and creative skills to solve electrical engineering problems.
- Function professionally with effective communication and with ethical responsibility as individuals and as members of a multidisciplinary team.
- Continuously improve and engage in life-long learning and adapt to a technologically advancing society.
- Apply knowledge of contemporary issues and anticipate the impact of electrical engineering solutions on industry and the general public.
- Use current techniques, skills, and tools necessary to support electrical engineering practice

The BS in electrical engineering technology program produces graduates who:

- Apply knowledge of mathematics and science using critical thinking and creative skills to solve electrical engineering problems.
- Function professionally with effective communication and with ethical responsibility as individuals and as members of a multidisciplinary team.
- Continuously improve and engage in life-long learning and adapt to a technologically advancing society.
- Apply knowledge of contemporary issues and anticipate the impact of electrical engineering solutions on industry and the general public.
- Use current techniques, skills, and tools necessary to support electrical engineering practice.
- Design electrical engineering systems, components, or processes to meet industry needs.

## PROGRAMS AT ALFRED STATE

- Design electrical engineering experiments, as well as analyze and interpret data to support the problem solving process and project design.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State electrical engineering technology AAS graduates may enter directly into either the electrical engineering technology BS or technology management BBA degree program.

### OCCUPATIONAL OPPORTUNITIES

- Electrical or Electronics Technician (two-year)
- Electrical or Electronics Technologist (four year)
- Communications Technician/Technologist
- Computer Technician/Technologist
- Semiconductor Manufacturing Technician/Technologist
- Electrical Power Technician/Technologist

### EMPLOYMENT STATISTICS

Employment and transfer rate:

- Electrical Engineering Technology (AAS degree): 100 percent transferred to continue their education.
- Electrical Engineering Technology (BS degree): 100 percent are employed.

### RELATED PROGRAMS

Computer Engineering Technology  
 Computer & Network Technician  
 Electrical Construction and Maintenance Electrician  
 Engineering Science

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/Trigonometry  
 Recommended: Physics

### Electrical Engineering Technology - AAS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
ELET	1001	Seminar	1
ELET	1202	Intro. to Electrical Technology	2
ELET	1111	Digital Logic Lab	1
ELET	1133	Digital Logic	3
MECH	1603	Graphics/CAD	3
COMP	1503	Freshman Composition	3
MATH	1033	College Algebra or Higher*	3
HPED	xxx1	Phys. Ed. Elective	1
17			

#### Second

ELET	1104	Circuit Theory I	4
ELET	1151	Circuits Theory Lab	1
ELET	1143	Electronic Fabrication	3
MATH	2043	College Trigonometry or Higher*	3
PHYS	1024	General Physics I	4
LITR	xxx3	Gen. Ed. - Literature Elective	3
18			

#### Third

ELET	2103	Electronics Theory I	3
ELET	2151	Electronics I Lab	1
ELET	2124	Electrical Power Circuits	4
ELET	2143	Embedded Controller Fund.	3
MATH	1063	Technical Calculus	3
PHYS	2023	General Physics II	3
17			

#### Fourth

ELET	3103	Electronics Theory II	3
ELET	3151	Electronics II Lab	1
ELET	4224	Alternative Energy Generation	4
ELET	4154	Microelectronics	4
SPCH	1083	Effective Speaking	3
	xxx3	Gen. Ed. Elective	3
18			

\*If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

### ASSOCIATE DEGREE GRADUATION REQUIREMENTS

- 70 semester credit hours
- 28 semester credit hours of liberal arts and sciences from at least five of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- 2.0 cumulative grade point average, and 2.0 grade point average in major courses (ELET, EMET)
- Approval of department faculty

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/Trigonometry, SAT and/or ACT scores with a recommended combined SAT score of 1,000 (critical reading and math) or a composite ACT score of 21.  
 Recommended: Physics

**Electrical Engineering Technology – BS Degree**

TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

Fifth			
<b>CISY</b>	<b>5123</b>	<b>Scientific Program in C &amp; C++</b>	<b>3</b>
<b>EMET</b>	<b>5004</b>	<b>Instrumentation</b>	<b>4</b>
CHEM	5013	Applied Chem. Principles	3
COMP	5703	Technical Writing II	3
MATH	2074	Technical Calculus II	4
			17

Sixth			
<b>ELET</b>	<b>5113</b>	<b>Electronic Communications</b>	<b>3</b>
<b>ELET</b>	<b>4143</b>	<b>Electrical Machines &amp; Controls</b>	<b>3</b>
<b>ELET</b>	<b>6004</b>	<b>Advanced Power System</b>	<b>4</b>
<b>ELET</b>	<b>7404</b>	<b>Embedded Systems Applications</b>	<b>4</b>
MATH	6114	Differential Equatio	4
			18

Seventh			
<b>BSET</b>	<b>7001</b>	<b>Senior Seminar &amp; Project Design</b>	<b>1</b>
<b>ELET</b>	<b>7104</b>	<b>Integrated Circuit Technology</b>	<b>4</b>
MATH	7113	Economic Analysis for Engr. Tech.	3
MATH	7123	Statistics for Engineering Tech.	3
PHYS	8013	Modern Physics	3
	xxx3	Gen. Ed. Elective	3
			17

Eighth			
BSET	8006	Senior Internship <b>OR</b>	6
BSET	8003	Senior Technical Project <b>AND</b>	3
EMET	xxx3	Upper Level Professional Elective	3
<b>And All Students</b>			
EMET	6004	<b>Feedback Control Systems</b>	4
	xxx3	Gen. Education Elective	3
	xxx3	Gen. Education Elective	3
			16

**CERTIFICATION OR LICENSURE**

The Bachelor of Science degree in electrical engineering technology is recognized as a “professional degree” that qualifies for experience/education credit toward New York Professional Engineering Licensure. Graduates from Alfred State’s program are allowed six years of the required 12 years of education/experience credit and are eligible to take the Fundamentals of Engineering (FE), formerly called Engineer-in-Training (EIT), examination upon graduation.

**BACHELOR OF SCIENCE DEGREE GRADUATION REQUIREMENTS**

- 138 semester credit hours
- 60 semester credit hours of liberal arts and sciences from at least seven of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503)
- Minimum of 45 hours upper division
- Minimum of 24 hours upper division in major
- Minimum of 30 hours upper division in residence
- 2.0 cumulative grade point average, and 2.0 grade point average in major courses (BSET, ELET, EMET, CISY)
- Approval of department faculty

Courses which repeat or significantly overlap courses taken in the student’s associate degree program cannot be taken for upper level credit. If the associate degree covered the subject matter in one of the required baccalaureate courses, a different course must be substituted and approved by the faculty adviser.

## PROGRAMS AT ALFRED STATE

### ENGINEERING SCIENCE

#### AS Degree – Code #0530

Embracing a strong core of courses in chemistry, mathematics, and physics, and including basic English and humanities sequences, this program is augmented by basic engineering courses essential to all engineering disciplines.

The primary objective of this program is to provide a basic two years of study for students who wish to continue their education at the baccalaureate level in any of the engineering disciplines. With a baccalaureate degree, opportunities for employment exist in the civil, computer, electrical, environmental, mechanical, nuclear, chemical, and aerospace industries. Opportunity for advancement is excellent, and the financial return is high for those with ability and ambition.

Alfred State is a member of the SUNY Two Year Engineering Science Association (TYESA). The purpose of this organization is to facilitate the transfer of engineering science graduates to New York State universities with accredited engineering programs. Recent Alfred State engineering science graduates have successfully transferred to Alfred University, Binghamton University, Clarkson University, Rensselaer Polytechnic Institute, Rochester Institute of Technology, NYS College of Ceramics at Alfred University, University at Buffalo, and Syracuse University.

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Apply knowledge of mathematics, physics and chemistry to solve engineering problems.
- Integrate the concepts of mathematics, sciences and humanities in engineering courses.
- Develop student computational proficiency to analyze and interpret data in solving engineering problems.
- Develop laboratory techniques and skills using modern engineering tools, including documentation and engineering reports, which reinforce and advance theoretical concepts.
- Communicate effectively with clear, critical thinking skills and broaden understanding of self and society through the General Education requirements.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State engineering science graduates may enter directly into the technology management BBA degree program.

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 12 percent are employed; 88 percent transferred to continue their education.

#### RELATED PROGRAMS

Architectural Engineering Technology  
CAD/CAM Technology  
Computer Technology  
Construction Engineering Technology  
Electrical Engineering Technology  
Mechanical Engineering Technology  
Surveying Engineering Technology

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/  
Trigonometry, Pre-calculus;  
Physics or Chemistry  
Recommended: Both Physics and Chemistry

### Engineering Science - AS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
CHEM	1984	Chemical Principles I	4
ENGR	1201	Engineering Science Orientation	1
MATH	1084	Calculus I	4
	xxx3	Gen. Education Elective	3
	xxx3	Gen. Education Elective	3
			18

Second			
PHYS	1064	Physics for Engineering Science I	4
	xxx3	Technical Elective	3
	xxx3	Technical or Gen. Ed. Elective	3
LITR	xxx3	Gen. Ed. Literature Elective Preferred	3
MATH	2094	Calculus II	4
			17

Third			
ENGR	3213	Analytical Mechanics I	3
ENGR	4104	Circuit Analysis	4
	xxx3	Technical Elective	3
	xxx3	Gen. Education Elective	3
ENGR	2201	Engineering Science Seminar	1
MATH	6114	Differential Equations	4
PHYS	2064	Physics for Engineering Science II	4
			19

Fourth			
ENGR	3254	Systems Dynamics	4
ENGR	4213	Analytical Mechanics II	3
ENGR	4264	Engineering Mechanics of Materials	4
MATH	6104	Multivariate & Vector Calculus	4
	xxx3	Gen. Education Elective	3
			18

Typical Technical Electives:

BIOL	1104	General Biology I
BIOL	2204	General Biology II
CHEM	2984	Chemical Principles II
CHEM	3514	Organic Chemistry I
CHEM	4524	Organic Chemistry II
CISY	4003	Introduction to Data Structures
CISY	5123	Scientific Prog. in C & C++
CIVL	1204	Surveying I
CIVL	2204	Surveying II
ELET	1133	Digital Logic
ELET	1111	Digital Logic Laboratory
ELET	1143	Electronic Fabrication
ELET	2143	Embedded Controller Fund
ELET	2153	Introduction to Microelectronics
ELET	3144	Embedded Controller Appl.
ELET	4224	Alternative Energy Generation
MATH	7113	Econ Anal for Engr. Tech.
MATH	7123	Statistics for Engr. Tech.
MECH	1203	Materials Science
MECH	1423	Intro. to Solid Modeling
MECH	1603	Graphics/CAD
MECH	1643	Manufacturing Processes
MECH	1641	Manufacturing Processes Lab
PHYS	8013	Modern Physics
		Elective (adviser approved)

Also required: One unit of physical education.

**GRADUATION REQUIREMENTS**

- 72 semester credit hours in program as listed above
- 40 semester credit hours of liberal arts and sciences from at least five of the General Education content groups: mathematics, natural sciences, social sciences, humanities, western civilization, American history, other world civilization, arts, foreign language, and basic communications (must include COMP 1503). A total of three courses in the humanities and social sciences is recommended to enhance transfer.
- 2.0 cumulative grade point average, and department requirement of 2.0 grade point average in major courses (ENGR, ELET, CIVL, MECH, CISY)
- Approval of department faculty

## PROGRAMS AT ALFRED STATE

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### ENTREPRENEURSHIP

#### AAS degree – Code #1362

James Grillo, Program Coordinator  
Email address: grillojj@alfredstate.edu

This program of study is designed to prepare the recent high school graduate, vocational student, displaced worker, or individual who is re-entering the work force for a career as a small business owner. Over the next decade, much of the growth in the American economy will come from the start-up and growth of small business. Many ask whether entrepreneurship can truly be taught or whether it is an innate characteristic. Research has shown that entrepreneurship is a process and many aspects of entrepreneurship are learned behaviors. Alfred State will teach the student those skills and behavior patterns necessary to contribute to personal and business success. Courses in accounting, sales, advertising, management, small business operations, leadership, and problem solving, as well as two courses in entrepreneurship will be taught in addition to the more traditional liberal arts and business courses. One of the key success factors of entrepreneurship is planning, definitely a learned skill. Our program offers two specific courses in entrepreneurship: the first to develop a feasibility plan to evaluate and explore ideas, as well as a general overview of general business foundations; the second to develop a viable individualized business plan which will be used both as a map for success, as well as a document students could use as a financing proposal (a real-life simulation project with cooperating businesses in town). Extensive use of guest speakers, experts in various aspects of small business, will be used in both these classes.

A laptop computer is recommended, but not required, for students entering the Entrepreneurship program. The college will provide a list of appropriate laptops to all students who have been accepted to attend Alfred State.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Identify sources of new ideas for business ventures.
- Identify the different sections of a business plan.
- Conduct industry specific research and analyze the results that relate to their business venture.
- Write a business plan that includes a marketing, operations, and financial strategy.
- Present and defend their business plan.

- Critical Thinking (problem solving, reasoning skills appropriate to degree level and type)

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State entrepreneurship graduates may enter directly into either the business administration BBA or technology management BBA degree program.

#### TRANSFER OPPORTUNITIES

Students may transfer directly into one of our own BBA programs or to another college to pursue a bachelor's degree.

#### OCCUPATIONAL OPPORTUNITIES

- Manager of Small Business
- Owner-Operator of Small Business

#### EMPLOYMENT STATISTICS

Employment and transfer rate: 100 percent transferred to continue their education.

#### RELATED PROGRAMS

Accounting  
Business Management (Career)  
Business Administration  
Business Administration (Transfer)  
Marketing

#### ENTRANCE REQUIREMENTS

Required: Algebra  
Recommended: Geometry, Algebra 2/Trigonometry

#### Entrepreneurship - AAS Degree

##### TYPICAL FOUR-SEMESTER PROGRAM

First			
ACCTO	1124	Financial Accounting	4
MKTG	2073	Principles of Marketing	3
CISY	1103	Information Technology Mgt.	3
COMP	1503	Freshman Composition	3
MATH	xxx3	Math Elective	3
HPED	xxx1	Physical Education Elective	1
17			
Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
BUAD	3153	Fundamentals of Management	3
BUAD	3043	Business Law I	3
	xxx3	Humanities Gen. Ed. Elective	3
MATH		Math Elective	3
19			

**Third**

**MKTG	1033	Advertising Principles	3
BUAD	4203	Intro. to Personal Financial Planning	3
ECON	1013	Macroeconomics	3
	xxx3	Gen. Education Elective	3
	xxx3	Business Elective	3
			15

**Fourth**

*BUAD	4004	Essentials of Entrepreneurship & Small Business Mgt.	4
*MKTG	1063	Principles of Sales	3
ECON	2023	Microeconomics	3
*BUAD	4193	Insurance and Risk Management	3
*BUAD	4053	Business Law II	3
			16

\*Offered in the spring semester only.

\*\*Offered in the fall semester only.

Total Credit Hours - 67

**GRADUATION REQUIREMENTS**

67 semester hours with a 2.0 cumulative index.

**Entrepreneurship - Certificate**

**First**

ACCT	1124	Financial Accounting	4
BUAD	3153	Fundamentals of Management	3
BUAD	3043	Business Law I	3
CISY	1103	Information Technology Mgt.	3
MKTG	2073	Principles of Marketing	3
			16

**Second**

ACCT	2224	Managerial Accounting	4
BUAD	4193	Insurance and Risk Management	3
MKTG	xxx3	Marketing Elective	3
BUAD	4004	Essentials of Entrepreneurship & Small Business Mgt.	4
BUAD	xxx3	Business Elective	3
			17

Total Credit Hours - 33

**GRADUATION REQUIREMENTS**

33 semester hours with a 2.0 cumulative index.

SOC Occupation Listings:

- 11-1011.00 Chief Executives
- 11-1011.03 Chief Sustainability Officers
- 11-1021.00 General and Operations Managers
- 11-2022.00 Sales Managers
- 11-3011.00 Administrative Services Managers
- 11-3051.00 Industrial Production Managers
- 11-3051.01 Quality Control Systems Managers
- 11-3051.02 Geothermal Production Managers
- 11-3051.03 Biofuels Production Managers
- 11-3051.04 Biomass Production Managers
- 11-3051.05 Methane/Landfill Gas Collection System Operators
- 11-3051.06 Hydroelectric Production Managers
- 11-3071.00 Transportation, Storage, and Distribution Managers
- 11-3071.01 Transportation Managers
- 11-3071.02 Storage and Distribution Managers

- 11-9021.00 Construction Managers
- 11-9151.00 Social and Community Service Managers
- 11-9199.00 Managers, All other
- 13-1051.00 Cost Estimators
- 13-1111.00 Management Analysts
- 25-1011.00 Business Teachers, Postsecondary

Costs for entire program completed in normal time (full-time, in-state):

Tuition and required fees: \$6,874.00

Estimated costs of books and supplies:

\$1,200.00

Room and Board charges for living on campus:

\$11,160.00

Additional cost information can be found at

[www.alfredstate.edu/paying-for-college/tuition-and-costs](http://www.alfredstate.edu/paying-for-college/tuition-and-costs).

Median Cumulative Loan Debt for students in the program between July 1, 2011 and June 30, 2012:

Median Federal Student Loan debt: \$8513.00

Median Private Loan debt: \$0.00

Median Institutional financing plan debt: \$0.00

The on-time completion rate for student's completing the program between July 1, 2011 and June 30, 2012 within the normal time using the typical semester recommendations as listed is 100%.

The job placement rate for students who completed their program between July 1, 2009 through June 30, 2010 can be found in the following chart.

**Employment and Transfer Report**

Employment and Transfer Rate: 0%

Survey Details	2008	2009	2010
Receiving Degrees	N/A	2	1
Responding to Survey	-	2 (100%)	1(100%)
Employed	-	1(50%)	-
Employed in Field	-	1(100%)	-
Transferred	-	1(50%)	-
Unemployed Seeking Employment	-	-	-
Unemployed/Not Seeking Employment	-	-	1(100%)

Salary Range - Not Available

## PROGRAMS AT ALFRED STATE

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### ENVIRONMENTAL TECHNOLOGY

#### AAS Degree - Code #570

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Mark Amman, Program Coordinator

Email address: AmmanMJ@alfredstate.edu

The environmental technology program prepares graduates to serve as field and laboratory technicians for a wide variety of industrial and governmental employers involved in environmental testing, remediation and monitoring. The program is an interdisciplinary one, including extensive faculty and laboratory capacity in chemistry, biology, instrumentation, soil and plant sciences, environmental engineering and spatial analysis as well as a common core of general studies.

The major emphasis in the required courses is gaining proficiency in technical skills. Flexibility through the selection of technical electives allows the student to pursue an interest in a particular environmental subdiscipline and become better prepared for a specific type of job.

#### PROGRAM STUDENT LEARNING OUTCOMES

1. Explain and apply the scientific method in order to document, interpret and present results of an experiment.
2. Evaluate scientific literature to summarize current thinking on a significant topic.
3. Display effective interpersonal communication and work skills in the lecture and laboratory setting.
4. Choose and employ proper safety practices in the laboratory.
5. Demonstrate the calibration and operation of scientific instrumentation.
6. Utilize gravimetric and volumetric methods to determine the physical and chemical properties of matter.
7. Make both organic and inorganic compounds according to prescribed multi-step syntheses.
8. Use microbiological techniques to isolate organisms in pure culture.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State environmental technology graduates, with the appropriate technical electives, may enter directly into either the forensic science technology BS or technology management BBA degree program.

#### TRANSFER OPPORTUNITIES

For students wishing to transfer to bachelor-level programs in environmental science, electives can

be selected that meet specific requirements of transfer institutions. Current articulation agreements with Cornell University's College of Agriculture and Life Sciences and the SUNY School of Environmental Science and Forestry provide excellent options for continued study.

#### OCCUPATIONAL OPPORTUNITIES

- Waste Water Treatment
- Soil Conservation
- Solid Waste Disposal
- Environmental Monitoring
- Laboratory Pollutant Analysis
- Incinerator Operation
- Brownfield Remediation

#### RELATED PROGRAMS

Biological Sciences

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/  
Trigonometry, Biology, Chemistry

#### FACILITIES

The environmental technology program is located in the newly renovated Physical and Health Sciences Building. Four science-ready lecture rooms are on the first floor with the eight laboratories found on the second and third floors. The laboratories are outfitted with state-of-the-art equipment and instrumentation and application software for teaching and learning, as well as for independent study and research. Students in the program also have access to an outdoor laboratory - an engineered wetland treatment system in nearby Wellsville, NY. It is treating groundwater contaminated by residues left from an old oil refinery, and is the largest remediation project of its type in New York State.

Explore the alphabet soup list below.

UV-VIS	Ultraviolet - Visible Spectrophotometry
FTIR	Fourier Transform Infrared Spectrophotometry with ATR attachment
AAS	Atomic Absorption Spectrophotometry
FS	Fluorescence Spectrophotometry
GC-FID	Gas Chromatography/Flame Ionization Detector
GC-MS	Gas Chromatography/Mass Spectroscopy
HPLC	High Performance Liquid Chromatography
CE	Capillary Electrophoresis



**Environmental Technology - AAS Degree**

**TYPICAL FOUR-SEMESTER PROGRAM**

First			
COMP	1503	Freshman Composition	3
MATH	1033	College Algebra or higher	3
BIOL	2803	Environmental Science	3
BIOL	2801	Environmental Science Lab	1
CHEM	1114	General Chemistry I	4
		OR	
CHEM	1984	Chemical Principles I	4
XXXX	xxxx	Technical Elective	3-4
			17-19

Second			
LITR	7003	Literature and Nature	3
MATH	1123	Statistics	3
		OR	
MATH	2124	Statistical Methods & Analysis	4
XXXX	xxxx	Technical Elective	3-4
CHEM	2124	General Chemistry II	4
		OR	
CHEM	2984	Chemistry Principles II	4
XXXX	xxx3	Social Science Elective	3
			16-17

Third			
XXXX	xxx3	Social Science Elective	3
ENVR	4413	Environmental Law	3
SPCH	1083	Effective Speaking	3
AGPS	1103	Soils	3
XXXX	xxxx	Technical Elective	3-4
			15-16

Fourth			
CIVL	6113	Environmental Tech. Concepts	3
ENVR	4424	Envir. Chem. & Microbiology	4
COMP	5703	Technical Writing II	3
XXXX	xxxx	Technical Elective	3-4
ENVR	4411	Environmental Capstone Seminar	1
HPED	xxx1	Physical Education Elective	1
			15-16

**Technical Electives:**

BIOL	1104	General Biology I
BIOL	2204	General Biology II
CHEM	3514	Organic Chemistry I
CHEM	4524	Organic Chemistry II
MATH	1064	Technical Calculus I or greater
MATH	2124	Statistical Methods & Analysis
PHYS	1044	College Physics I
PHYS	2044	College Physics II
AGPS	5003	Integrated Pest Management
CHEM	5414	Analytical Principles
AGPS	2113	Field & Forage Crops
BIOL	1304	Botany
AGRI	2012	Organic and Sustainable Agriculture
BIOL	4254	General Microbiology
CHEM	6614	Instrumental Analysis
BIOL	1223	Intro. to Forestry
BIOL	5223	Ecology
MATH	2043	College Trigonometry

**GRADUATION REQUIREMENTS**

A minimum of 63 credit hours is required for graduation, with an overall cumulative index of 2.0 in the above listed courses. A grade of "C" or better is required in chemistry, biology and environmental courses.

### FINANCIAL PLANNING

#### **BBA Degree – Code #1938**

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Dr. Ron Rhoades, Program Coordinator

Email address: rhoadera@alfredstate.edu

The Business department offers a BBA degree in financial planning. Students receiving their AAS or AS degree in virtually any business concentration will be able to seamlessly transfer into this program and receive the BBA degree in four more semesters, which includes a full semester internship in the field.

Personal financial services is one of the most lucrative and rapidly expanding professions in existence. By combining expertise in estate planning, investment planning, risk management, insurance evaluation, tax planning, retirement planning, and employee benefits planning, the CERTIFIED FINANCIAL PLANNER™ professional offers one-stop comprehensive expert advice and planning which would have formerly required a prospective client to seek advice from a variety of different professionals. Students completing this four-year degree will be eligible to sit for the the CERTIFIED FINANCIAL PLANNER™ examination, a rigorous multi-part exam that is one important step in becoming a CFP® practitioner. While there are numerous job opportunities for employment in various types of financial institutions such as banks, investment firms, and the insurance industry, perhaps the greatest earnings potential lies in becoming a self-employed CFP® practitioner.

This is an extremely rewarding profession. Not only is there tremendous earning potential, but it is also a very satisfying way to make a living by helping people bring order to their lives by teaching them how to acquire, and retain, wealth. Aside from the monetary rewards (including starting and ending salaries well above the average for college graduates), financial planners enjoy a host of personal rewards from assisting their fellow Americans to save, invest, and plan for their financial futures. No wonder that the career of personal financial planning has consistently ranked as one of the "happiest" of careers!

A laptop computer is required for students entering this degree program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

This program is registered with the Certified Financial Planner Board of Standards, Inc.

Certified Financial Planner Board of Standards, Inc. owns the trademarks CFP®, CERTIFIED FINANCIAL PLANNER™ and CFP® (with flame design) certification marks in the U.S., which it awards to individual who successfully complete CFP Board's initial and ongoing certification requirements.

Alfred State does not certify individuals to use the CFP®, CERTIFIED FINANCIAL PLANNER™ and CFP® (with flame design) certification marks. CFP® certification is granted solely by Certified Financial Planner Board of Standards, Inc. to individuals who, in addition to completing an educational requirement such as this CFP Board-Registered Program, have met ethics, experience, and examination requirements.

#### **PROGRAM STUDENT LEARNING OUTCOMES**

- Integrate and synthesize the knowledge identified by the CFP® Board's required topic list and gained from core courses, into decision making, critical thinking, and problem solving skills.
- Design and communicate a comprehensive financial plan as defined by the CFP® Board of Standards.
- Develop practice management techniques, interpersonal consulting, and client communication skills.
- Employ ethical standards when dealing with clients as per the CFP® Board of Standards.
- Develop a sense of mission regarding service to clients and community.
- Communicate effectively, both orally and in writing.
- Use technological resources effectively and appropriately to communicate, collaborate, and retrieve information.
- Research and prepare business-related documents and presentations that are well organized and including supporting materials in an appropriate format.

#### **OCCUPATIONAL OPPORTUNITIES**

- Banking
- Insurance
- Investment Firms
- Financial Planning Firms
- Attorneys' Offices
- Self-Employment
- Employee Benefits Specialists
- Accounting Firms
- Wealth Management Firms
- Broker-dealer (Securities) firms

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 100 percent are employed in the field.

**RELATED PROGRAMS**

- Financial Services
- Accounting
- Marketing
- Business Management (Career)
- Business Administration (Transfer)
- Entrepreneurship

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2/ Trigonometry, SAT and/or ACT scores with a recommended combined SAT score of 1,000 (critical reading and math) or a composite ACT score of 21

**Financial Planning - BBA Degree**

**TYPICAL EIGHT-SEMESTER PROGRAM**

First			
ACCT	1124	Financial Accounting	4
CISY	1103	Information Technology Mgt.	3
MKTG	2073	Principles of Marketing	3
MATH	1123	Statistics I or Statistical Methods	3
COMP	1503	Freshman Composition	3
HPED	xxx1	Physical Education Elective	1
			17

Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
CISY	3023	Adv. Micro Spreadsheets	3
	xxx3	Humanities - Gen. Ed. Elective	3
SPCH	1083	Effective Speaking	3
MATH	1033	College Algebra	3
			19

Third			
BUAD	3153	Fund. of Management	3
BUAD	3043	Business Law I	3
BUAD	4203	Intro. to Personal Financial Planning	3
ECON	1013	Macroeconomics	3
BUAD	4133	Investments	3
ACCT	3453	Tax Accounting I	3
			18

Fourth			
MKTG	1063	Principles of Sales	3
ECON	2023	Microeconomics	3
BUAD	4193	Insurance & Risk Management	3
	xxx3	General Education Elective	3
	xxx3	General Education Elective	3
	xxx3	Business Elective	3
			18

Fifth			
BUAD	5003	Management Communications	3
BUAD	5023	Human Resource Management	3
FSMA	7023	Estate Planning	3
	xxx3	General Education Elective	3
COMP	5703	Technical Writing II	3
TMGT	5001	Business Seminar	1
			16

Sixth			
FSMA	6003	Employee Benefit Planning	3
BUAD	xxx3	Management Elective-Upper	3
	xxx3	General Education Elective	3
	xxx3	General Education Elective	3
BUAD	5033	Retirement Planning	3
			15

Seventh			
FSMA	7123	Personal Fin. Planning Capstone	3
FSMA	5003	Investment Planning	3
FSMA	5103	Tax Planning	3
FSMA	7103	Money and Banking	3
	xxx3	Business Elective	3
BUAD	xxx3	Management Elective Upper Level	3
			18

Eighth			
FSMA	8112	Internship	12

**GRADUATION REQUIREMENTS**

- 133 credit hours, including one credit hour of physical education
- 30 credit hours of the 45 upper-level credit hours for this degree must be taken at Alfred State.
- cumulative overall index of at least 2.0

### FINANCIAL SERVICES

#### AAS Degree – Code #0641

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Dr. Ron Rhoades, Program Coordinator

Email address: rhoadera@alfredstate.edu

The financial services program is designed to provide students with an overview of the various financial institutions and their importance in the economy and to provide a description of the products and services offered by financial institutions. With this degree, students may enter directly into the work force or continue their education in a four-year baccalaureate program. Generally, graduates begin their careers in entry-level positions such as tellers and salespersons with career ladders reaching toward loan officers, researchers, stock brokers, financial planners, and insurance agents. This program provides introductory courses in the basic fields of financial services; helps the student appreciate the broad business principles necessary for successful management of a financial institution; prepares the student to recognize the ethical considerations that are important in the financial advisory process; enables the student to understand the role that financial institutions play in the economy; and keeps the student informed on changes in legislation and technology and how these will affect the future of the financial services industry.

A laptop computer is recommended, but not required, for students entering the financial services program. The college will provide a list of appropriate laptops to all students who have been accepted to attend Alfred State.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Apply effective communication skills in writing, reading, presenting and listening in writing business and other documents.
- Use decision-making skills, prioritize, analyze and make recommendations using critical thinking.
- Draw specific conclusions about a business from its financial records, including conducting risk assessment.
- Use technological resources and skills effectively and appropriately to communicate, collaborate, and retrieve information.
- Participate in team situations by successfully and effectively communicating, participating, focusing, and completing the assigned task.
- Distinguish between the different aspects of the marketing mix and discuss how to manage each one.

- Relate to different business situations through general business knowledge gained, such as organization types, laws and applications, supply/demand, global issues, ethics, and leadership.
- Defend final projects through research analysis, conclusions, and recommendations, along with an oral presentation of this information.
- Apply appropriate job search skills such as resume writing, job interviewing, and writing cover letters and thank you letters.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State financial services graduates may enter directly into either the business administration BBA, financial planning BBA, or technology management BBA degree program at Alfred State.

#### TRANSFER OPPORTUNITIES

Students may transfer directly into one of our own BBA degree programs or to another college. Although not limited to these schools, common transfer institutions include: Alfred University, St. Bonaventure University, Rochester Institute of Technology, St. John Fisher College, SUNY at Albany, University at Buffalo, SUNY College at Brockport, SUNY College at Fredonia, SUNY College at Geneseo, SUNY College at Oneonta, SUNY College at Oswego, SUNY at Binghamton, Canisius College, Niagara University, and Hilbert College.

#### OCCUPATIONAL OPPORTUNITIES

- Commercial Banks
- Thrift Institutions
- Credit Unions
- Mutual Funds
- Insurance Companies
- Pension Funds
- Financial Planning Firms

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent transferred to continue their education.

#### RELATED PROGRAMS

Accounting  
Business Administration (Transfer)  
Business Administration  
Business Management (Career)  
Marketing  
Financial Planning  
Technology Management

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry

Recommended: Algebra 2/Trigonometry

**Financial Services - AAS Degree**

**TYPICAL FOUR-SEMESTER PROGRAM**

First			
ACCT	1124	Financial Accounting	4
COMP	1503	Freshman Composition	3
CISY	xxx3	Intro to Computers/Info Mgt. Elective	3
MATH	xxx3	Math Elective	3
MKTG	2073	Principles of Marketing	3
HPED	xxx1	Physical Education Elective	1
			17

Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Bus Communications	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	Math Elective	3
	xxx3	General Education Elective	3
			16

Third			
BUAD	3153	Fundamentals of Management	3
BUAD	3043	Business Law I	3
BUAD	4133	Investments	3
BUAD	4203	Intro. to Personal Financial Planning	3
ECON	1013	Macroeconomics	3
			15

Fourth			
BUAD	4053	Business Law II	3
BUAD	4193	Insurance and Risk Management	3
MKTG	1063	Principles of Sales	3
ECON	2023	Microeconomics	3
	xxx3	Business or Computer Elective	3
			15

**GRADUATION REQUIREMENTS**

63 semester hours with a 2.0 cumulative index.

### FORENSIC SCIENCE TECHNOLOGY

#### BS Degree - Code #2023

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Dr. Jerry Fong, Program Coordinator  
Email address: FongJD@alfredstate.edu

The forensic science technology program is a technically rigorous four-year degree culminating in a Bachelor of Science degree in forensic science. Students in this on-campus program will have the choice of focusing on biological applications within forensics, e.g., DNA fingerprinting, genetic analysis, and microbiology or can specialize in the chemical practicalities, notably: physicochemical analysis and identification of drugs, fibers, soils, glass, and other types of physical evidence.

Majors will also have the opportunity to broaden and deepen their training by selecting three technical electives and two open electives.

All majors in the program will be required to take a core course load that includes extensive preparation in physics, mathematics, biology, and chemistry as well as more advanced training in organic chemistry, biochemistry, instrumental methods, criminalistics, law, criminal justice, technical writing, and a senior internship and/or independent research experience.

#### PROGRAM STUDENT LEARNING OUTCOMES

1. Apply the scientific principles of chemistry, biology, and physics to specific applications in forensic science
2. Explain and show competency in basic chemical and biological lab procedures, including the identification of and the synthesis of various compounds and the forensic analysis of DNA
3. Demonstrate an understanding of the capabilities, use, potential, and limitations of various laboratory instrumental techniques widely utilized in forensic science
4. Recognize and use appropriate professional and ethical behavior as defined by the forensic science community
5. Demonstrate an understanding of the scientific principles of crime scene investigation and reconstruction, including evidence collection, preservation, and documentation
6. Summarize the criminal justice system and explain the role of the forensic scientist and physical evidence within the criminal justice system
7. Evaluate scientific literature to distinguish fact from opinion, develop informed and reasonable conclusions, apply knowledge and

understanding to problems, develop rational and reasonable interpretations, suspend beliefs and remain open to new information and methods, and assimilate information learned into knowledge base

8. Use technological resources effectively and appropriately to communicate, collaborate, and retrieve information; determine when technology is useful and select the appropriate tool(s) and technology resources to address a variety of tasks and problems
9. Apply written communication skills to the construction documents of record that are well organized and contain appropriate format, grammar, punctuation, sentence structure, and spelling in accordance with established professional guidelines
10. Apply oral communication skills to the explanation of ideas, scientific terminology, and results of scientific examinations in a competent and confident manner

#### OCCUPATIONAL OPPORTUNITIES

- Law Enforcement Laboratories
- Government Crime Laboratories
- Private Forensic Testing Laboratories
- Industrial Laboratories Employing Chemical or Biological Technologist

#### FUTURE EDUCATIONAL OPPORTUNITIES

- Graduate Level Forensic Science Programs
- Medicine
- Dentistry
- Pharmacy
- Biology
- Chemistry
- Environmental Science

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100% - 100% are employed in field.

#### RELATED PROGRAMS

Biological Science  
Environmental Technology

#### INTERNSHIP OPPORTUNITIES

Students have completed internships at various locations including the New York State Police Western Region Crime Laboratory, Erie County Forensic Lab, and several hospital clinical laboratories.

#### FACILITIES

The program is located in the newly renovated Physical and Health Sciences Building. Four science-ready lecture rooms are on the first floor

with the eight laboratories found on the second and third floor. The laboratories are outfitted with state-of-the-art equipment and instrumentation.

Explore the alphabet soup list below.

UV-VIS (Ultraviolet - Visible Spectrophotometry)

FTIR Fourier Transform Infrared

Spectrophotometry)

AAS (Atomic Absorption Spectrophotometry)

FS (Fluorescence Spectrophotometry)

GC-MS (Gas Chromatography/Mass

Spectroscopy)

HPLC (High Performance Liquid

Chromatography)

CE (Capillary Electrophoresis)

PCR (Polymerase Chain Reaction)

Comparison and polarized microscopy

Anatomic models and up-to-date application software for teaching and learning, as well as for independent study and research, are available.

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2/ Trigonometry, Biology, Chemistry, SAT and/or ACT scores with a recommended combined SAT score of 1,000 (critical reading and math) or a composite ACT score of 21.

Recommended: Physics

Students must be able to physically lift 25 lbs. and possess fine motor skills which allow them to focus a microscope with fine adjustment and use forceps.

**Forensic Science Technology - BS Degree**

**TYPICAL EIGHT-SEMESTER PROGRAM**

First			
FRSC	1001	Intro. to Forensic Science I	1
CHEM	1984	Chemical Principles I	4
BIOL	1104	General Biology I	4
COMP	1503	Freshman Composition	3
MATH	1033	College Algebra	3
		OR	
MATH	2124	Statistical Methods and Analysis	4
			15-16

Second			
FRSC	2001	Intro. to Forensic Science II	1
CHEM	2984	Chemical Principles II	4
BIOL	2204	General Biology II	4
SPCH	1083	Effective Speaking	3
MATH	1054	Precalculus	4
		OR	
MATH	1084	Calculus I	4
		OR	
MATH	2043	College Trigonometry	3
			15-16

Third			
FRSC	3001	Topics in Forensic Science I	1
CHEM	3514	Organic Chemistry I	4
PHYS	1044	College Physics I	4
HPED	xxx1	Phys. Ed. Elective	1
MATH	1084	Calculus I	4
		OR	
MATH	2124	Statistical Methods & Analysis	4
HIST	xxx3	General Education History	3
			17

Fourth			
FRSC	4001	Topics in Forensic Science II	1
CHEM	4524	Organic Chemistry II	4
PHYS	2044	College Physics II	4
GEN Ed	xxx3	General Education Elective	3
GEN Ed	xxx3	General Education Elective	3
		OR	
MATH	2094	Calculus II (Tech. Elective)	4
			15-16

Fifth			
CHEM	5414	Analytical Principles (Chem. option)	4
		OR	
BIOL	5254	Principles of Microbiology (Bio. option)	4
CJUS	1003	Intro. to Criminal Justice	3
	xxx3	Technical Elective	3-4
LITR	xxx3	Literature Elective	3
GEN ED	xxx3	General Education Elective	3
			16-17

Sixth			
	xxx3	Technical Elective (Chem. option)	3
		OR	
BIOL	6534	Genetics (Bio. option)	4
CHEM	6614	Instrumental Analysis	4
CJUS	6003	Law and Criminal Evidence	3
GEN ED	xxx3	General Education Elective	3
		OR	
	xxx3	Technical Elective	3-4
SOCI	5213	Science, Technology & Society	3
			16-18

Seventh			
FRSC	7104	Criminalistics I	4
CHEM	7784	Biochemistry	4
	xxx3	Technical Elective	3-4
	xxx3	Upper Level Elective	3
COMP	5703	Technical Writing	3
			17-18

Eighth			
FRSC	8104	Criminalistics II	4
FRSC	8111	Capstone Experience	1
FRSC	8113	Professional Preparation	3
FRSC	8803	Senior Research Project	3
		OR	
FRSC	8813	Internship	3
CHEM	6854	Physical Chemistry (Chem. option)	4
		OR	
	xxx3	Technical Elective (Bio. option)	3
			14-15

Approved Technical Electives:  
 BIOL 1404 & 2504 Anatomy & Physiology I and II  
 BIOL 2633 Histotechniques  
 BIOL 4403 Pathophysiology  
 BIOL 5223 Genetic Engineering  
 CJSY 3023 Advanced Computer Spreadsheets  
 CHEM 4900 Directed Study, Chemistry  
 FRSC 8900 Directed Study, Forensic  
 MATH 2094 Calculus II  
 MATH 6114 Differential Equations  
 MATH 5900 Directed Study, Mathematics  
 MEDR 1132 Essentials of Pharmacology

### GRADUATION REQUIREMENTS

- Completion of above-listed courses
- Minimum of 124 total credit hours, a minimum of 45 which must be from upper division course work
- Completion of either a minimum 120 hour-long internship in a working forensic laboratory setting OR a semester-long directed research/independent study project
- Grade of "C" or higher in all chemistry, biology, and forensic science courses
- Completion of a "mock trial" capstone experience



**HEALTH INFORMATION TECHNOLOGY****AAS Degree – Code #1969**

Tracy Locke MS, RHIA, Program Director  
Email address: LockeTF@alfredstate.edu

Alfred State offers an online Associate of Applied Science in health information technology (HIT) which combines a profession in health care with information technology. Alfred State is accredited by the Middle States Commission on Higher Education, 3624 Market St., Philadelphia, PA 19104, (215) 662-5606. The HIT program is accredited by the Commission of Health Information and Informatics Management (CAHIIM), c/o AHIMA, 233 N. Michigan Avenue, Suite 2150, Chicago, IL 60601-5800 or 312/233-1131 or visit [www.cahiim.org](http://www.cahiim.org).

Alfred State has offered traditional HIT courses on campus since 1968 and has offered the Internet based since 1999.

HIT professionals are responsible for maintaining components of health information systems consistent with medical, legal, accreditation, and regulatory requirements of the health care delivery system, maintain, collect, and analyze data crucial to the delivery of quality patient care. The HIT professional compiles and reports health information data for reimbursement, facility planning, marketing, risk management, utilization management, quality management and research; abstracts and codes clinical data using appropriate classification systems; and analyzes health records according to standards and regulations.

HIT professionals play a key role in the planning, implementation, and management of the electronic health record (EHR). HIT professionals are educated in the leadership and management of health information. Health information management includes paper, scanned, or electronic formats. The HIT professional is knowledgeable in electronic health record/electronic medical record (EHR/EMR), health information exchange (HIE), regional health information organizations (RHIOs), and the legal health record.

HIT professionals are the custodians of health information. The HIT professional's primary function is to make sure that all the medical information collected about an individual is complete, accurate, and protected, while, at the same time, readily available for healthcare providers when it is needed.

**PROGRAM STUDENT LEARNING OUTCOMES**

- PSLO 1 - Apply biomedical knowledge (including medical terminology, anatomy & physiology, pathophysiology, and pharmacology) to apply diagnosis/procedure codes (ICD-9-CM, ICD-10-CM, ICD-10-PCS, CPT, and HCPCS level II according to current nomenclature).
- PSLO 2 - Use established federal guidelines, accreditation standards, and APC and DRG calculator/grouper software to comply with healthcare documentation (review), reimbursement, and reporting requirements.
- PSLO 3 - Apply HIM knowledge as defined by organizational policy and external regulations (i.e., Medicare, Medicaid, managed care) and standards to maintain the accuracy and completeness of the patient record.
- PSLO 4 - Apply HIM knowledge of policies and procedures for confidentiality and security measures regarding the access and disclosure of protected health information (PHI) to authorized users.
- PSLO 5 - Apply HIM knowledge in the collection, maintenance, and reporting of data for clinical indices/databases/registries to meet specific organizational and regulatory needs for the purposes of medical research and education.
- PSLO 6 - Organize and present data for quality management, utilization management, risk management, and other related studies.
- PSLO 7 - Apply HIM knowledge of legal, ethical, accreditation and certification standards as appropriate for the management of patient information.
- PSLO 8 - Apply basic methods when calculating descriptive, institutional, and healthcare vital statistics.
- PSLO 9 - Apply the use of common software applications (e.g., spreadsheets, databases, word processing, graphics, presentation, email, and so on) and HIM-related software applications (e.g., release of information, electronic health records, patient record abstracting, and so on)
- PSLO 10 - Apply HIM knowledge to promote ethical standards of practice to health information management and coding.
- PSLO 11 - Demonstrate effective written and oral communication as appropriate to health information management and coding practices. Communicate effectively with consumers, providers, and other healthcare professionals.
- PSLO 12 - Demonstrate critical thinking to problem solving and reasoning skills to health information management and coding practices.

## PROGRAMS AT ALFRED STATE

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### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State health information technology graduates may enter directly into the technology management BBA degree program.

### PROFESSIONAL PRACTICE EXPERIENCES

Students complete non-paid professional practice experiences (PPEs) in the Health Information program of an acute care facility (160 hours). PPE arrangements are made in consultation with each student so that convenient locations are selected. Students are not a substitute for paid staff during PPEs, which means they are expected to receive appropriate supervision and mentoring during completion of all tasks.

The Joint Commission *Hospital Accreditation Standards Manual* requires hospitals to implement “a process to ensure that a person’s qualifications are consistent with his/her job responsibilities.” This standard “applies to staff, students, and volunteers,” and it further states the hospital is responsible for verifying “the following according to law, regulation, or hospital policy: information on criminal background.” As such, Alfred State students who complete PPEs in the HIT technology program may be required to undergo a criminal background check prior to placement at the facility. In addition, the facility may require students to undergo a physical examination (on-site at the facility or by the student’s primary care provider) prior to beginning the professional practice experience. The physical examination includes drug screening, a TB test, and/or DTB, hepatitis B, and/or MMRV immunization or status. Students may be required to incur costs associated with the criminal background check and/or physical examination.

Once a PPE placement has been arranged, students are expected to contact the professional practice supervisor to arrange a schedule for attendance. Students may be required to attend an on-site orientation at the professional practice facility, which could be several days in length.

### ARTICULATION AGREEMENTS

One-plus-one transfer agreements exist between Alfred State and Corning, Jamestown, Genesee, and American Samoa Community Colleges; students complete their first year of study at the local community college and transfer to Alfred State for their second year. Transfer is guaranteed if a student successfully completes the prescribed first-year schedule of courses with a 2.0 cumulative index.

### TRANSFER OPPORTUNITIES

Although not limited to these schools, common transfer institutions for HIT bachelor degree programs include SUNY College of Technology at Utica/Rome, Stephens College, St. Scholastica, Regis University, and University of Cincinnati.

### OCCUPATIONAL OPPORTUNITIES

- Hospitals
- Clinics and Physicians' Offices
- Insurance Companies
- State and Federal Agencies
- Law/Computer Firms
- Software Companies
- Consultant

### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 87 percent are employed; 13 percent transferred to continue their education.

### ACCREDITATION/CERTIFICATION

The health information technology program is accredited by the Commission on Accreditation for Health Information Management Education (CAHIIM). Contact CAHIIM, c/o AHIMA, 233 N Michigan Ave, Suite 2150, Chicago, IL 60601-5800 or (312) 233-1131. Visit their Web site at <http://www.cahiim.org>.

Alfred State is also accredited by the Middle States Commission on Higher Education, 3624 Market St., Philadelphia, PA 19104, (215) 662-5606.

Graduates are eligible to take the national certification examination to become a Registered Health Information Technician (RHIT). Since 1968, when the program was created, Alfred State HIT graduates have traditionally achieved a passing rate above the national average.

Graduates are also eligible to take the Certified Coding Specialist (CCA, CCS and CCS-P) and Certified Professional Coder (CPC, CPC-A, CPC-H-A, CPC-H and CPC-P) exams. It is strongly recommended that students complete technical elective courses in this area of study and work for a minimum of one year as a coder before taking the coding certification exam(s).

### FEATURES & FACILITIES

- Prepares graduates for certification as a Registered Health Information Technician.
- Accredited nationally by the Commission on the Accreditation of Allied Health Educational Programs in cooperation with the American

Health Information Management Association's Council on Accreditation.

**RELATED PROGRAMS**

Coding & Reimbursement Specialist  
Computer Information Systems

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: high school biology or equivalent  
Must be able to visually read computer monitor.  
Must be able to use keyboard and mouse.  
Recommended: Keyboarding, MS Office Professional  
Must be able to attend Professional Practice Experience (PPE) courses including 160 hours at a health care facility within reasonable driving/travel distance to their home.

**Health Information Technology - AAS Degree**

TYPICAL FOUR-SEMESTER PROGRAM - Full-time

First			
BIOL	1114	Human A&P I	4
COMP	1503	Freshman Composition	3
MEDR	1132	Essentials of Pharmacology	2
MEDR	1133	Medical Terminology	3
MEDR	1114	Intro. to Health Info. Mgt.	4

16

Second			
BIOL	2214	Human A&P II	4
BIOL	4403	Pathophysiology	3
MEDR	1223	Health Data Management	3
MEDR	1244	CPT & HCPCS Level II Coding	4
MEDR	1234	ICD-9-CM, ICD-10-CM & ICD-10-PCS Coding	4

18

Third			
MEDR	3114	Electronic Health Record	4
MEDR	3414	Quality Management and Legal Aspects of HIM	4
SOCI	1163	General Sociology	3
PSYC	1013	General Psychology	3
LITR	2603	Introduction to Literature	3
LITR	2343	Children's Literature	3
SPAN	1203	Spanish I	3
SPCH	1083	Effective Speaking	3
HPED	1111	Health & Wellness	1

18

Fourth			
HIST	2153	American History II	3
		OR	
MATH	1033	College Algebra	3
MEDR	4514	Alternate Care HIM	4
MEDR	4214	Insurance & Reimbursement Processing	4
BUAD	3153	Fundamentals of Mgt.	3

14

Summer Program			
MEDR	4312	Intro. to HIM PPE	2
MEDR	4322	Coding PPE	2
MEDR	4111	Health Information Technology Seminar	1

5

**GRADUATION REQUIREMENTS**

HIT students are required to earn a grade of at least a "C" or better in each BIOL and MEDR prefix courses prior to placement in the PPEs. Students must also earn a grade of at least "C" in all BIOL, MEDR, COMP 1503, and BUAD 3153 courses to graduate from the HIT program.

Should a student fail MEDR or BIOL courses a second time: They may re-take MEDR and/or BIOL courses as a continuing education student. Then, upon successful completion with a "C" or better, students can apply for readmission to the HIT program. Or, students may re-take the BIOL/MEDR equivalent courses on-campus at Alfred State or at another college after first obtaining pre-approval of the course for transfer credit and then earning a grade of "C" or better.

CISY 1003 (introduction to microcomputers) may be taken in the first semester as an elective.

MEDR 2614 (advanced coding & reimbursement) may be taken in the last semester as an elective.

Part-time students are required to take their general education courses prior to MEDR courses.

### HEAVY EQUIPMENT OPERATIONS

#### AOS Degree – Code #1908

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This program provides instruction in the skills required by heavy equipment operators for the light construction and heavy highway industries. Instruction is provided in the theory connected with heavy equipment operations as well as grades, soils, blueprint reading, safety, and supervision. Students spend approximately 25 percent of the lab time operating equipment; the balance of the lab time is spent on equipment inspection, maintenance, grades, lot layout, operation support, and estimating.

Programs leading to an AOS degree are hands-on programs and do not include liberal arts and sciences courses. Offered at the School of Applied Technology Campus in Wellsville, heavy equipment operations is geared toward a person who would like to enter the heavy equipment operation industry following graduation.

Classes and labs are scheduled from 8:30 a.m. until 3 p.m. each day with a break for lunch. Each morning, one or two hours are devoted to class lectures on subjects specific to the heavy equipment operation trade. The classroom training is then applied in a hands-on laboratory setting, or off campus at a construction site.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Select the correct piece of equipment and demonstrate the proper use, for an earth moving or excavation project.
- Select and use the necessary PPE for a given construction project.
- Demonstrate the proper set up and use of various types of survey equipment.
- Read and interpret blueprints.
- Accurately estimate materials for a project.
- Demonstrate essential problem solving and supervisory skills.
- Perform common mathematical calculations.
- Demonstrate how to excavate to meet construction and OSHA standards, based on the soil type.
- Safely operate various equipment utilized in the construction industry.
- Perform computer-based research and communication.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State heavy equipment operations graduates may enter directly into the technology management BBA degree program.

#### OCCUPATIONAL OPPORTUNITIES

- Town, Village, County Department of Public Works
- NYS Department of Transportation
- Highway and Heavy Construction Companies
- Mining Companies
- Logging Companies

#### Employment Statistics

Employment and Transfer Rate: 100 percent - 100 percent are employed

#### RELATED PROGRAMS

Heavy Equipment: Truck & Diesel Technician

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra

Students will be accepted for the heavy equipment operations program based on the strength of their application. Criteria for consideration will include high school average, regents exam scores (if a New York State student), grades in related course work, results of standardized tests (if available), and additional information provided through letters of recommendation, a personal essay indicating career goals, and a resume. Initial application review will begin on Nov. 1.

#### TECHNICAL STANDARDS

Applicants in the heavy equipment operations program must meet the following physical requirements:

- Must be able to lift 50 pounds to shoulder height.
- Must be able to perform safely in the laboratory.
- Must be able to communicate orally with a person 20 feet away.
- Must be able to climb a ladder and/or able to climb, un-aided, onto and off of equipment using three points of contact.
- Must be able to stand for long periods of time.
- Must be able to visually read from a blueprint or drawing.
- Must be able to hear a backup warning alarm.

**Heavy Equipment Operations - AOS Degree**

TYPICAL FOUR-SEMESTER PROGRAM

First			
BLCT	1053	Safety & Identification of Heavy Equipment	3
BLCT	1044	Blueprint Reading Grades	4
BLCT	1016	Operations - Part I	6
BLCT	1043	Introduction to Earth Moving	3
BLCT	1052	Soils - Part I	2
			18

Second			
BLCT	2023	Equipment Safety-Part II	3
BLCT	2034	Grades & Blueprint Reading II	4
BLCT	2033	Equipment Preventive Maintenance	3
BLCT	2036	Operations-Part II	6
BLCT	2092	Soils-Part II	2
			18

Third			
BLCT	3003	Advanced Equipment Safety	3
BLCT	3002	Blueprint Reading-Part III	2
BLCT	3005	Operations-Part III	5
BLCT	3013	Paving-Part I	3
BLCT	3012	Soils-Part III	2
BLCT	3023	Supervision-Part I	3
			18

Fourth			
BLCT	4002	Below Grade Construction (Heavy Highway)	2
BLCT	4012	Earth Moving (Heavy Highway)	2
BLCT	4022	Finish Operations	2
BLCT	4032	Finishing and Grading	2
BLCT	4004	Operations-Part IV	4
BLCT	4003	Paving-Part II	3
BLCT	4013	Supervision-Part II	3
			18

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

## PROGRAMS AT ALFRED STATE

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### HEAVY EQUIPMENT: TRUCK & DIESEL TECHNICIAN

#### AOS Degree – Code #0452

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This specialization includes 1,800 hours of practical experience and classroom training. Students receive their basics in the first year on all types of vehicles. The senior year concentrates on trucks, bulldozers, earthmovers, farm tractors, and other diesel-powered equipment. Our heavy equipment: truck & diesel technician program is the only program in New York and New England that is approved by the Association of Diesel Specialists (ADS). The heavy equipment: truck & diesel technician program is one of only nine national ADS TechSmart training programs.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Demonstrate a focused, coherent, organized written report.
- Perform mathematic calculations required for entry-level automotive.
- Demonstrate an ability to apply written instructions and specifications relevant to their work environment.
- Demonstrate the ability to diagnose and repair heavy equipment/truck drive trains.
- Demonstrate the ability to diagnose and repair heavy equipment/truck electrical and electronic systems.
- Demonstrate the ability to diagnose and repair heavy equipment/truck gas engines.
- Demonstrate the ability to diagnose and repair heavy equipment/truck brakes, steering, and suspension systems.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State heavy equipment: truck and diesel technician graduates may enter directly into the technology management BBA degree program.

#### OCCUPATIONAL OPPORTUNITIES

- Agricultural Equipment Mechanic
- Service Manager
- Diesel Engine Specialist
- Diesel Fuel System Specialist
- Shop Foreman
- Heavy Equipment Mechanic
- Truck Fleet Mechanic
- Industrial Equipment Mechanic
- Marine Engine Service Technician

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 88 percent are employed; 12 percent transferred to continue their education.

#### RELATED PROGRAMS

Autobody Repair  
Automotive Service Technician  
Mechanical Engineering Technology  
Welding Technology

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra

#### TECHNICAL STANDARDS

Applicants for all programs in the Automotive Trades department must meet the following physical requirements:

- Must be able to perform safely in the shop.
- Must be able to lift 50 pounds to eye level.
- Must be able to communicate orally with a person six-10 feet away.
- Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
- Must have a valid motor vehicle license and be able to drive a standard transmission vehicle.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to understand information found in service repair manuals and use diagnostic flow charts.
- Must meet qualifications for a NYS driver's license.

#### CERTIFICATION OR LICENSURE

Students may take Automotive Service Excellence (ASE) certification exams in eight areas and the ADS TechCert test. Students are eligible for New York State inspection certification upon successful completion of their freshman year. In their senior year, students may take the test for certification in Basic Engine Theory through the Association of Diesel Specialists.

**Heavy Equipment: Truck & Diesel Technician - AOS Degree**

TYPICAL FOUR-SEMESTER PROGRAM

First			
AUTO	1224	Welding	4
AUTO	1245	Basic Truck Electronics & Component Overhaul	5
AUTO	1219	Truck Brakes, Steering & Suspension Systems	9
			18

Second			
AUTO	1239	Inspection, Maintenance, Air Conditioning, Cooling & Heating	9
AUTO	2169	Truck Gasoline Engine Tune-Up, Electrical Engine Controls & Electrical Diagnosis	9
			18

Third			
AUTO	3609	Heavy Duty Drive Train	9
AUTO	3649	Diesel Engine Service	9
			18

Fourth			
AUTO	3623	Air Brake Service	3
AUTO	4363	Heavy Duty Electrical/Hydraulic Specialties	3
AUTO	4669	Diesel Fuel System Service	9
AUTO	2503	Preventive Maintenance for Heavy Truck & Diesel	3
			18

**Continuing Students:**

Students successfully completing the heavy equipment: truck & diesel technician program receive first priority for space if they wish a third year (senior year) in automotive service technician. They may be admitted to autobody repair with the department chair's approval.

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

## PROGRAMS AT ALFRED STATE

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### HUMAN SERVICES (AS)

#### AS Degree – Code #1175

Michael Cobb, Program Coordinator  
Email address: cobbmj@alfredstate.edu

The human services program is a broadly based, applied program emphasizing both professional course work in the human services and course work in the social sciences and liberal arts. Students take courses that provide them with the skills and knowledge to be successful when working in a variety of human services agencies. Students have the opportunity to take electives in specialty areas such as education, substance abuse, criminal justice, and gerontology.

#### PROGRAM STUDENT LEARNING OUTCOMES

1. Apply critical thinking skills in the context of professional practice.
2. Perform the basic operations of personal computer use, as well as employ basic research techniques to locate, evaluate and synthesize information from a variety of sources.
3. Communicate effectively and appropriately in oral and written forms.
4. Recognize the values and ethics of the Human Services profession.
5. Identify the components of one's own belief systems and the assumptions underlying them.
6. Analyze the impact of social policies on client systems, workers and agencies.
7. Identify the bio-psycho-social variables that affect individual and group development and behavior.
8. Examine the role of diversity in the human services.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State human services graduates may enter directly into either the human services management BS or technology management BBA degree programs.

#### TRANSFER OPPORTUNITIES

The human services program offers excellent transfer potential in fields such as psychology, human services, human services management, education, social work, sociology, criminal justice, gerontology, and communications. Among the colleges to which recent graduates have successfully transferred are Alfred University, Mansfield University, Hilbert College, SUNY at Brockport, University of Buffalo, and SUNY at Stony Brook.

### INTERNSHIP OPPORTUNITIES

In Practicum (HUSR 1074) students complete a substantial internship providing direct service to clients at one local/regional human services agency. Agencies include Accord Corp., Alfred Montessori School, Allegany County ARC, Allegany County Department of Health, Allegany County Office of the Aging, Allegany Rehabilitation Associates, Inc., Catholic Charities, Hornell Area Concern for Youth, Trapping Brook House, and the YMCA of Hornell.

### OCCUPATIONAL OPPORTUNITIES

- Early Childhood Programs
- Education
- Social Services
- Youth Services
- Elderly Services
- Criminal Justice
- Disability Services
- Substance Abuse Programs
- Activity Directors

### EMPLOYMENT STATISTICS

Employment and transfer rate of 95 percent – 32 percent are employed; 63 percent transferred to continue their education.

### RELATED PROGRAMS

Human Services Management  
Individual Studies  
Liberal Arts & Sciences: Social Science

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra

### Human Services - AS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
PSYC	1013	Gen. Psychology	3
SOCI	1163	Gen. Sociology	3
HUSR	2083	Intro. to Human Services	3
FNAT	xxx3	Fine Arts Elective	3
			15

Second			
PSYC	1023	Human Development	3
PSYC	1063	Basic Helping Skills	3
HUSR	4033	Issues in Human Services	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	Math Elective	3
			15

Third			
SOCI	1223	Minority Cultures	3
	xxx3	Other World Civiliz. Elective	3
	xxx3	Natural Science Elective	3-4
	xxx3	Open Elective	3
	xxx3	Departmental Elective	3
			15-16



Fourth			
SOCI	1183	Contemp. Soc. Problems	3
HUSR	1074	Practicum	4
	xxx3	American History Elective	3
	xxx3	Liberal Arts Elective	3
	xxx3	Open Elective	3
			16

Also required: One credit hour of physical education.

**Human Services**

Practicum (HUSR 1074) Pre-requisites

- Good Academic Standing (cumulative GPA of 2.0 or higher)
- Completion of PSYC 1063 and either HUSR 2083 or HUSR 4033 with a combined "C+" (2.5) or higher average grade
- Submission of HUSR 1074 Practicum Application form to the departmental practicum coordinator
- Approval of the departmental faculty
- Ability to pass any agency required background check

**Graduation Requirements**

- Good Academic Standing (cumulative GPA of 2.0 or higher)
- Successful completion of all courses in the prescribed four-semester plan
- Combined "C+" (2.5) average or higher grade among HUSR 2083, HUSR 4033, PSYC 1063, and HUSR 1074
- Submission of the college's degree application form

## PROGRAMS AT ALFRED STATE

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### HUMAN SERVICES MANAGEMENT (BS)

#### BS Degree – Code #2153

Michael Cobb, Program Coordinator  
Email address: cobbmj@alfredstate.edu

The baccalaureate degree (BS) program in human services management prepares workers who, as generalists, can work with clients in a wide range of human services agencies and also can employ sound management practices. This interdisciplinary program not only prepares students to offer direct service to clients but also prepares them in the basics of program management and supervision. The program requires students to take lower- and upper-level courses in the human services, and additional courses in management, accounting, and leadership. An upper-level internship of 400 or more hours in a public or private human services agency is required.

#### PROGRAM STUDENT LEARNING OUTCOMES

1. Apply critical thinking skills in the context of professional practices.
2. Perform the basic operations of personal computer use, as well as employ basic research techniques to locate, evaluate and synthesize information from a variety of sources.
3. Communicate effectively and appropriately in oral and written forms.
4. Apply a core set of management skills in human resources, finance, operations, and leadership.
5. Apply a core set of generalist practice skills in planning, implementing, and evaluating client interventions, which include case management, information and referral, community organization and outreach.
6. Adhere to professional ethical standards and value diversity in all areas of practice including the supervised field practicum, academic experiences, and community involvement.
7. Analyze and design intervention strategies to improve social policies impacting client systems at individual, organizational, and societal levels.
8. Enter into professional Human Services employment at the bachelor's level, or graduate level education in the helping professions.
9. Synthesize and apply a solid liberal arts and social sciences foundation in critical thinking, oral and written communication, and self-directed learning.

#### FUTURE EDUCATIONAL OPPORTUNITIES

Graduate level programs in areas including human services, human services administration, social work, social work administration, business

administration, business administration - non-profit and government, and public administration.

#### OCCUPATIONAL OPPORTUNITIES

- Case, Program, or Residential Manager
- Human Services Supervisor
- Aftercare Coordinator
- Quality Assurance Specialist
- Outreach Coordinator
- Grants Management and Organizational Development Specialist
- Program Planner

#### EMPLOYMENT STATISTICS

The U.S. Bureau of Labor Statistics expects demand for bachelor-prepared human services professionals to grow faster than average through the next decade, especially in rural areas which already face a significant shortage of human services professionals. Depending on location, starting salary will typically range from \$35,000 to \$45,000.

#### RELATED PROGRAMS

Human Services  
Business Administration  
Liberal Arts & Sciences: Social Science

#### INTERNSHIP OPPORTUNITIES

In Field Practicum (HUSR 5314) students complete 400 hours of a management-focused internship. Internship opportunities exist with a number of local and regional human services agencies including, but not limited to, ACCORD Corp., Adelphi Behavioral Sciences, Alfred Montessori School, Allegany County ARC, Allegany County Department of Health, Allegany Department of Social Services, Allegany County Office for the Aging, Allegany Rehabilitation Associates, Inc., Catholic Charities, Hillside Children's Services, Hornell Area Concern for Youth, St. James Mercy Healthcare, Trapping Brook House, and the YMCA of Hornell.

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

- Applicants are informed that many human services agencies require that field practicum students pass background checks before being allowed to begin their field placements.
- While the program allows students to pursue their degrees on a part-time basis, applicants should be aware that they must enroll as full-time student in the semester in which they take their senior fieldwork (HUSR 5314).

Required: Algebra, SAT and/or ACT scores with a recommended combined SAT score of 1,000 (critical reading and math) or a composite ACT score of 21

**Human Services Management- BS Degree**

**TYPICAL EIGHT-SEMESTER PROGRAM**

First			
COMP	1503	Freshman Composition	3
PSYC	1013	Gen. Psychology	3
SOCI	1163	Gen. Sociology	3
HUSR	2083	Intro. to Human Services	3
FNAT	xxx3	Fine Arts Elective	3
HPED	xxx1	Physical Education	1
			16

Second			
PSYC	1023	Human Development	3
PSYC	1063	Basic Helping Skills	3
HUSR	4033	Issues in Human Services	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	Statistical Concepts OR Statistics I	3
			15

Third			
SOCI	1223	Minority Cultures	3
	xxx3	Other World Civiliz. Elective	3
	xxxx	Natural Science Elective	3-4
	xxx3	Departmental Elective	3
SPCH	1083	Effective Speaking	3
			15-16

Fourth			
SOCI	1183	Contemp. Soc. Problems	3
HUSR	1074	Practicum **	4
	xxx3	American History Elective	3
	xxx3	Liberal Arts Elective	3
	xxx3	Open Elective	3
			16

Fifth			
ACCT	5043	Accounting Perspectives	3
BUAD	3153	Fundamentals of Management	3
SOCI	5023	Research Methods	3
PSYC	5013	Counseling Theory	3
HUSR	5003	Community Organizations	3
			15

Sixth			
BUAD	5023	Human Resource Management	3
BUAD	5013	Principles of Leadership	3
BUAD	5003	Management Communications	3
	xxx3	Liberal Arts Elective	3
HUSR	5103	Social Policy & Human Services	3
			15

Seventh			
	xxx3	Liberal Arts Elective	3
BUAD	5043	Business Ethics	3
HUSR	5203	Grants, Contracts, Org. Adv. In HS	3
HUSR	5213	Case Management Systems	3
PSYC	5103	Indus/Org Psychology	3
			15

Eighth			
HUSR	5314	Field Practicum & Seminar ****	14

**Note:**

\*\* 104 hours of field work and two-hour seminar;

\*\*\*\* Minimum 400 hours field work, three-hour weekly seminar.

**Human Services Management**

**Practicum (HUSR 5314) Pre-requisites**

- Good Academic Standing (cumulative GPA of 2.0 or higher)
- Completion of at least 3 of the following 4 courses - HUSR 5003, HUSR 5103, HUSR 5203, HUSR 5213 - with a "C+" (2.5) or higher grade in each of the three
- Submission of HUSR 5314 Practicum Application form to the departmental practicum coordinator
- Approval of the department faculty
- Ability to pass any required background check

**Graduation Requirements**

- Good Academic Standing (cumulative GPA of 2.0 or higher)
- Successful completion of all courses in the prescribed eight-semester plan.
- Grade of "C" (2.0) or higher in BUAD 3153
- Grade of "B" (3.0) or higher in HUSR 5314
- Completion of HUSR 5003, HUSR 5103, HUSR 5203, and HUSR 5213 with a "C+" (2.5) or higher grade in each
- Submission of the college's degree application form.

## PROGRAMS AT ALFRED STATE

### INDIVIDUAL STUDIES

#### AS Degree – Code #0688

Dr. Kathleen Ebert, Program Coordinator  
Email address: ebertkc@alfredstate.edu

The individual studies program serves students' needs three ways:

1. provides an opportunity to explore different career choices
2. prepares for transfer to a four-year school
3. fulfills a career goal that cannot be met by traditional program offerings

#### PROGRAM STUDENT LEARNING OUTCOMES

1. Create written communication appropriate for audience and purpose and which meets standards of style, clarity, and grammatical correctness as described in the Writing Rubric.
2. Demonstrate oral communication proficiency.
3. Complete seven of the ten SUNY General Education requirements.
4. Complete 15 credit hours in a concentration and describe their coherent sequence of study and transfer focus.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State individual studies graduates may enter directly into the technology management BBA degree program.

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 8 percent are employed; 92 percent transferred to continue their education.

#### RELATED PROGRAMS

- Business Administration (Transfer)
- Liberal Arts & Sciences: Humanities
- Liberal Arts & Sciences: Math & Science
- Liberal Arts & Sciences: Social Science
- Liberal Arts & Sciences: Adolescent Education - Teacher Education Transfer

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra

Recommended: Geometry, Biology

### Individual Studies - AS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
ASDC	xxx1	College Success OR Career Planning	1 3
COMP	1503	Freshman Composition	3
	xxx3	Gen. Education Elective*	3
	xxx3	Gen. Education Elective*	3
	xxx3	Career Area	3
	xxx3	Elective	3
16			
Second			
SPCH	1083	Effective Speaking	3
	xxx3	Gen. Education Elective*	3
	xxx3	Gen. Education Elective*	3
	xxx3	Career Area	3
	xxx3	Elective	3
15			
Third			
	xxx3	Career Area	3
	xxx3	Elective	3
	xxx3	Elective	3
	xxx3	Gen. Education Elective*	3
	xxx3	Gen. Education Elective* OR Liberal Arts Elective	3 15
Fourth			
	xxx3	Career Area	3
	xxx3	Career Area	3
	xxx3	Elective	3
	xxx3	Gen. Education Elective*	3
	xxx3	Gen. Education Elective* OR Liberal Arts Elective	3 15

Also required: One unit of physical education.

\*Students must satisfy a minimum of seven of the 10 SUNY General Education knowledge/skill content areas and complete a minimum of 30 credit hours in the liberal arts and sciences.

#### GRADUATION REQUIREMENTS

- A minimum of 61 hours (excluding HPE) is required for graduation with a cumulative index of 2.0.

### INFORMATION SECURITY AND ASSURANCE

#### BTech Degree – Code #2085

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The Bachelor of Technology degree in information security and assurance at Alfred State is designed to prepare graduates to enter the work force as information security professionals with a special emphasis in network and host security, secure programming, and database applications. A four-course sequence in security is provided. The programming language sequence includes modern languages such as VB.NET, Java, and C++. In addition, students receive a sound foundation in web development, networking, and microcomputer systems. The department has a Cisco-certified academy and the college has a Pearson Vue testing center. Students completing course work will have a strong foundation to obtain the following professional certifications: Cisco Certified Network Association (CCNA), CCNA Security, Security+, Microsoft Certified Technology Specialist, and Network+. Additional upper-level courses are provided in management, oral and written communication, and business. A full semester internship is included.

A laptop computer is required for students entering the information security and assurance program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

#### PROGRAM STUDENT LEARNING OUTCOMES

- Demonstrate troubleshooting strategies with a variety of security problems.
- Install and configure web, database, file, and application servers
- Develop and implement effective security and disaster recovery systems and policies
- Develop and maintain technical documentation and procedures for Security management
- Demonstrate effective research, planning, and security management of software updates and fixes.
- Apply accumulated knowledge and skills in an actual industry environment
- Demonstrate effectiveness in the use of computer forensic tools, procedures, techniques, and hardware as well as maintain physical evidence
- Demonstrate effectiveness in configuring authentication schemes, such as NAT, content security and content vectoring, SYND Defender, and VPNs using industry standard firewalls.
- Demonstrate effectiveness in the use and scan of a network with heterogeneous operating systems and identify security vulnerabilities

- Demonstrate knowledge of multiple areas within the liberal arts arena.
- Demonstrate knowledge in design and configuration of Windows security
- Demonstrate effectiveness in tracking and monitoring as well as managing kicker attacks against Linux servers and how to prevent them

#### TRANSFER OPPORTUNITIES

Articulation agreements have been established with many community colleges and additional agreements are in development. It is possible, with careful selection of courses, to transfer from a variety of associate degrees, including computer information systems, information technology, computer science, and others. Upon completion of the bachelor's degree, students will be prepared to pursue a graduate degree in information technology. The computer information systems degree (AAS) at Alfred State is especially well suited for transfer into this degree at the junior level.

#### OCCUPATIONAL OPPORTUNITIES

Organizations of all types and sizes need information technology professionals and emphasis on security has never been higher. The primary employment field includes security IT specialists, Virtual Private Network administrators, authentication specialists, database administrators, programmers, and system analysts. Due to the solid foundation in other areas, graduates will not be limited to these areas; thus, the job opportunities are wide and numerous.

#### RELATED PROGRAMS

Computer Information Systems  
Computer Science  
Computer Engineering Technology  
Digital Media and Animation  
Information Technology: Applications Software Development  
Information Technology: Network Administration  
Information Technology: Web Development

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/  
Trigonometry, SAT and/or ACT  
scores with a recommended  
combined SAT score of 1,000  
(critical reading and math) or a  
composite ACT score of 21.

#### INFORMATION SECURITY AND ASSURANCE - BTECH DEGREE

TYPICAL EIGHT-SEMESTER PROGRAM

## PROGRAMS AT ALFRED STATE

First			
CISY	1023	Intro. to Information Technology	3
CISY	1123	Intro. to Computer Prog. for IT	3
CISY	1113	Intro. to Computer Programming	3
COMP	1503	Freshman Composition	3
	xxx3	Gen. Ed. "Social Science"	3
	xxx3	Gen. Ed. "Other"	3
			15

Second			
CISY	4103	Visual Programming & Dev.	3
CISY	2143	Microcomputer Systems I	3
LITR	2603	Intro. to Literature	3
MATH	xxx3	College Algebra or Higher*	3
CISY	3223	Intro to Web Page Development	3
HPED	xxx1	Physical Education	1
			16

Third			
CISY	4033	Networking I	3
CISY	2153	Database Appl & Program 1	3
MATH	2124	Statistics Methods and Analysis	3
MATH	1123	Statistics I	3-4
	xxx3	Gen. Ed. - Natural Science	3
ACCT	1124	Financial Accounting	4
			16-17

Fourth			
CISY	4053	Linux Admin and Scripting	3
BUAD	3153	Fundamentals of Management	3
CISY	5203	Network Administration	3
SPCH	1083	Effective Speaking	3
CISY	5723	Essentials of Info. Security	3
	xxx3	Gen. Ed. "Other"	3
			18

Fifth			
COMP	5703	Technical Writing II	3
	xxx3	Open Elective - Upper **	3
CISY	7033	Security Tools	3
CISY	5133	Security & Risk Management	3
	xxx3	Gen. Ed. - Other	3
	xxx3	Professional Elective - Upper	3
			18

Sixth			
CISY	7003	Project Management	3
CISY	7013	Network and Host Security	3
CISY	7023	Comp Forensics & Legal	3
	xxx3	Open Elective	3
	xxx3	Professional Elective - Upper	3
			15

Seventh			
CISY	8703	Information Security Capstone	3
CISY	8303	Software OP & Interop I	3
CISY	8603	Seminar in Critical Issues in IT	3
	xxx3	Open Elective	3
	xxx3	Professional Elective - Upper	3
	xxx3	Open Elective - Upper	3
			15

Eighth			
CISY	8712	Information Technology Internship***	12
			12

## GRADUATION REQUIREMENTS

- 125 credit hours inclusive of physical education courses
- 39 credit hours in major field required courses
- 24 credit hours in professional courses
- 18 credit hours in core concentration
- 30 credit hours in liberal arts/general education courses
- a 2.5 grade point average in the major is needed for the required internship
- other requirements as stated in College academic regulations
- 8 general education areas are required, with 3 of 5 (art, language, other world civilizations, American history, or western civilization)

\* If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

\*\* BUAD 4003 or BUAD 6113 recommended.

\*\*\* GPA of 2.5 or higher required in major courses; GPA of 2.0 minimum overall; internship is student-initiated.

**INFORMATION TECHNOLOGY: APPLICATIONS SOFTWARE DEVELOPMENT**

**BTech Degree – Code #1502**

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The Bachelor of Technology degree in information technology: applications software development at Alfred State is designed to prepare graduates to enter the work force as IT professionals with a special emphasis in programming and database applications. A four-course sequence in database application is provided. The programming language sequence includes modern languages such as C#, Java, and C++. In addition, students receive a sound foundation in web development, networking, and microcomputer systems. Additional upper-level courses are provided in management, oral and written communication, and business. A full semester internship is included.

A laptop computer is required for students entering the information technology: applications software development program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**PROGRAM STUDENT LEARNING OUTCOMES**

- Produce object-oriented application software with current development programming languages.
- Produce functional databases with current DBMS such as Oracle, MySQL, Access, etc.
- Use the appropriate database design methodologies.
- Perform the full life cycle of software development.
- Develop an outline for an information system project.
- Install, configure and troubleshoot basic hardware.
- Identify and utilize business principles and problem solving techniques.
- Demonstrate and use managerial principles of business.
- Demonstrate knowledge of multiple areas within the liberal arts arena.
- Apply accumulated knowledge and skills in an actual industry environment.

**TRANSFER OPPORTUNITIES**

Articulation agreements have been established with many community colleges and additional agreements are in development. It is possible, with careful selection of courses, to transfer from a variety of associate degrees including computer information systems, information technology, computer science, and others. Upon completion of

the bachelor's degree, students will be prepared to pursue a graduate degree in information technology. The computer information systems degree (AAS) at Alfred State is especially well suited for transfer into this degree at the junior level.

**OCCUPATIONAL OPPORTUNITIES**

Organizations of all types and sizes need computer professionals. The primary employment field includes database administrators, programmers, and systems analysts. Due to the solid foundation in all the major fields of information technology, the job opportunities for graduates are wide and numerous. They include database administrators, software developers, network support, project managers, user support, Web developers, IT managers, technical sales, and technical support staff, to name a few.

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 80 percent are employed; 20 percent transferred to continue their education.

**Related Programs**

- Computer Information Systems
- Computer Science
- Computer Engineering Technology
- Information Technology: Network Administration
- Information Technology: Web Development
- Information Security & Assurance

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2/ Trigonometry, SAT and/or ACT scores with a recommended combined SAT score of 1,000 (critical reading and math) or a composite ACT score of 21.

**Information Technology: Applications Software Development - BTech Degree**

**TYPICAL EIGHT-SEMESTER PROGRAM**

First			
CISY	1023	Intro. to Information Technology	3
CISY	1113	Intro. to Computer Prog.	3
COMP	1503	Freshman Composition	3
	xxx3	Gen. Ed. - Social Science	3
	xxx3	Gen. Ed. - Other	3
			15

Second			
CISY	4103	Visual Programming & Dev.	3
CISY	2143	Microcomputer Systems	3
LITR	2603	Intro. To Literature	3
MATH	xxx3	College Algebra or Higher*	3
CISY	2153	Database Appl. & Prog.	3
HPED	xxx1	Physical Education	1
			16

## PROGRAMS AT ALFRED STATE

Third			
CISY	4033	Networking I	3
CISY	3223	Intro. to Web Page Development	3
ACCT	1124	Financial Accounting	4
MATH	2124	Statistics Methods and Analysis	
		OR	
MATH	1123	Statistics I	3-4
	xxx3	Gen. Ed. "Other"	3
			16-17

- 8 general education areas are required with 3 of 5 (art, language, American history, western civilization, other world civilizations)

Fourth			
CISY	4063	Systems Analysis & Design	3
BUAD	3153	Fundamentals of Management	3
SPCH	1083	Effective Speaking	3
CISY	4003	Introduction to Data Structures	3
	xxx3	Gen. Ed. - Other	3
	xxx3	Open Elective	3
			18

Fifth			
CISY	6503	Object-Oriented Programming	3
COMP	5703	Technical Writing II	3
BUAD	5003	Management Communications	3
	xxx3	Gen. Ed. "Natural Science"	3
	xxx3	Open Elective	3
	xxx3	Professional Elective	3
			18

Sixth			
CISY	7003	Project Management	3
CISY	5723	Essentials of Information Security	3
CISY	5403	Database Concepts	3
	xxx3	Concentration Elective	3
	xxx3	Open Elective	3
	xxx3	Professional Elective - Upper	3
			18

Seventh			
CISY	8503	Applied Database Management	3
CISY	8603	Seminar in Critical Issues in IT	3
	xxx3	Open Elective	3
	xxx3	Professional Elective - Upper	3
	xxx3	Liberal Arts Elective - Upper	3
			15

Eighth			
CISY	8712	Information Technology Internship**	12
			12

\*If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

\*\* GPA of 2.5 or higher required in major courses; GPA of 2.0 minimum overall; internship is student-initiated.

## GRADUATION REQUIREMENTS

- 128 credit hours inclusive of physical education courses
- 39 credit hours in major field required courses
- 24 credit hours in professional courses
- 18 credit hours in core concentration
- 30 credit hours in liberal arts courses
- a 2.5 grade point average in the major is needed for the required internship
- other requirements as stated in college academic regulations



### INFORMATION TECHNOLOGY: NETWORK ADMINISTRATION

#### BTech Degree – Code #1505

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The Bachelor of Technology degree in information technology: network administration at Alfred State is designed to prepare graduates to enter the work force as IT professionals with a special emphasis in networking. A five-course sequence in networking includes network operating systems, directory access protocols, system administration, advanced routing and switching, network security and network design, computer hardware, interoperability, and design. The department has a Cisco-certified academy and the college has a Pearson Vue testing center. After completing their course work, students will have a strong foundation to obtain professional certification in the following areas: Cisco Certified Network Association (CCNA), CCNA Security, Microsoft Certified Technology Specialist, CompTIA A+, and Network+. Core courses provide students with a foundation in other areas including Web server administration, programming, database applications, and microcomputer systems. Additional upper-level courses are provided in oral and written communication, management, and business. A full semester internship is included.

A laptop computer is required for students entering the information technology: network administration program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

#### PROGRAM STUDENT LEARNING OUTCOMES

- Demonstrate troubleshooting strategies and techniques with a variety of networking problems.
- Identify and configure a variety of networking topologies and protocols.
- Demonstrate effective network operation and management.
- Install and configure both client and server networking software.
- Demonstrate effective network design for LAN and WAN.
- Install and configure web, database, file and application servers.
- Develop and implement effective security and disaster recovery systems and policies.
- Develop and maintain technical documentation and procedures for network management.
- Demonstrate knowledge of multiple areas within the liberal arts arena.
- Apply accumulated knowledge and skills in an actual industry environment.

- Identify and utilize business principles and problem solving techniques.

#### TRANSFER OPPORTUNITIES

Articulation agreements have been established with many community colleges and additional agreements are in development. It is possible, with careful selection of courses, to transfer from a variety of associate degrees including computer information systems, information technology, computer science, and others. The computer information systems degree (AAS) at Alfred State is especially well suited for transfer into this degree at the junior level.

#### OCCUPATIONAL OPPORTUNITIES

Organizations of all types and sizes need computer professionals. Due to the solid foundation in all the major areas of computer information technology and systems, job opportunities for graduates are wide and numerous. They include network administrators, systems analysts, project managers, user support, Web developers, security specialist, IT managers, and technical support staff, to name just a few.

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 89 percent are employed; 11 percent transferred to continue their education.

#### Related Programs

Computer Engineering Technology  
Computer Information Systems  
Computer Science  
Information Security & Assurance  
Information Technology: Applications Software Development  
Information Technology: Web Development

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/ Trigonometry, SAT and/or ACT scores with a recommended combined SAT score of 1,000 (critical reading and math) or a composite ACT score of 21.

## PROGRAMS AT ALFRED STATE

### Information Technology: Network Administration - BTech Degree

#### TYPICAL EIGHT-SEMESTER PROGRAM

First			
CISY	1023	Intro. to Information Tech.	3
CISY	1123	Intro. Computer Prog. for IT <b>OR</b>	
CISY	1113	Intro. to Computer Programming	3
COMP	1503	Freshman Composition	3
ACCT	1124	Financial Accounting	4
MATH	1123	Statistics <b>OR</b>	
MATH	2124	Stat. Methods & Analysis	3-4
HPED	xxx1	Physical Education Elective	1
			17-18

Second			
CISY	4103	Visual Programming & Dev.	3
CISY	2143	Microcomputer Systems I	3
LITR	2603	Intro. to Literature	3
MATH	xxx3	College Algebra or Higher*	3
	xxx3	Gen Ed - Soc Science Elective	3
	xxx3	Open Elective	3
			18

Third			
CISY	4033	Networking I	3
CISY	3223	Intro. to Web Page Development	3
CISY	2153	Database Appl and Program I	3
	xxx3	Gen Ed - Natural Science	3
	xxx3	Gen Ed - Other	3
			15

Fourth			
CISY	4053	Linux/Unix Admin & Scripting	3
BUAD	3153	Fundamentals of Management	3
SPCH	1083	Effective Speaking	3
	xxx3	Professional Elective	3
	xxx3	Gen. Ed. - Other	3
			15

Fifth			
CISY	4203	Network Administration	3
	xxx3	Open Elective - Upper**	3
	xxx3	Concentration Elective	3
	xxx3	Gen. Ed. - Other	3
	xxx3	Open Elective	3
			15

Sixth			
CISY	5723	Essentials of Info Security	3
CISY	7003	Project Management	3
CISY	6703	Network Design Concepts	3
	xxx3	Professional Elective	3
	xxx3	Professional Elective	3
			15

Seventh			
CISY	8303	Software Integration. and Interoperability	3
CISY	8603	Seminar in Critical Issues in IT	3
COMP	5703	Technical Writing	3
	xxx3	Professional Elective	3
	xxx3	Open Elective - Upper (LA recommended)	3
	xxx3	Open Elective	3
			18

Eighth			
CISY	8712	Information Technology Internship***	12
			12

\*If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

\*\* BUAD 5003 or BUAD 6113 recommended.

\*\*\* GPA of 2.5 or higher required in major courses; GPA of 2.0 minimum overall; internship is student-initiated.

#### GRADUATION REQUIREMENTS

- 125 credit hours inclusive of physical education course
- 39 credit hours in major field required courses
- 24 credit hours in professional courses
- 30 credit hours in liberal arts/general education courses
- 18 credit hours in core concentration
- a 2.5 grade point average in the major is needed for the required internship
- other requirements as stated in College academic regulations
- 8 general education areas are required with 3 of 5 (art, language, other world civilizations, American history or western civilization)

**INFORMATION TECHNOLOGY: WEB DEVELOPMENT**

**BTech Degree – Code #1506**

The Bachelor of Technology degree in information technology: web development at Alfred State is designed to prepare graduates to enter the work force as IT professionals with a special emphasis in web development and applications. Web publishing, programming, and web server administration comprise the upper-level of courses. Additionally, the Web is integrated across the entire program beginning with the very first course. Through core courses students are given a general foundation in programming, database administration, networking, and microcomputer systems. Additional upper-level courses in oral and written communication, management, and business are provided. A semester-long internship is included.

A laptop computer is required for students entering the information technology: web development program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**PROGRAM STUDENT LEARNING OUTCOMES**

- Produce dynamically functional software with Web development and scripting languages.
- Perform full life cycle of Web software development.
- Create and use a database with appropriate Web design principles.
- Produce functional web applications using Web composing software.
- Analyze and create interface design.
- Install, configure and troubleshoot basic hardware.
- Identify and utilize business principles and problem solving techniques.
- Demonstrate and use managerial principles of business.
- Demonstrate knowledge of multiple areas within the liberal arts arena.
- Apply accumulated knowledge and skills in an actual industry environment.

**TRANSFER OPPORTUNITIES**

Articulation agreements have been established with many community colleges and additional agreements are in development. It is possible, with careful selection of courses, to transfer from a variety of associate degrees including computer information systems, information technology, computer science, and others. Upon completion of the bachelor's degree, students will be prepared to

pursue a graduate degree in information technology. The computer information systems degree (AAS) at Alfred State is especially well suited for transfer into this degree at the junior level.

**OCCUPATIONAL OPPORTUNITIES**

Organizations of all types and sizes need computer professionals. The primary employment field includes Web administrators and developers. Due to the solid foundation in other areas, graduates will not be limited to these areas; thus, the job opportunities are wide and numerous. They include database administrators, programmers, systems analysts, network support, project managers, user support, IT managers, technical sales, and technical support staff, to name just a few.

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 100 percent are employed in field.

**RELATED PROGRAMS**

- Computer Engineering Technology
- Computer Information Systems
- Computer Science
- Digital Media and Animation
- Information Security & Assurance
- Information Technology: Applications Software Development
- Information Technology: Network Administration

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2/ Trigonometry, SAT and/or ACT scores with a recommended combined SAT score of 1,000 (critical reading and math) or a composite ACT score of 21.

**Information Technology: Web Development - BTech Degree**

**TYPICAL EIGHT-SEMESTER PROGRAM**

First			
CISY	1023	Intro. to Information Tech.	3
CISY	1113	Intro. to Computer Programming	3
COMP	1503	Freshman Composition	3
	xxx3	Gen. Ed. "Social Science"	3
	xxx3	Gen. Ed. "Other"	3
			15

Second			
CISY	4103	Visual Programming & Dev.	3
CISY	2143	Microcomputer Systems	3
LITR	2603	Intro. to Literature	3
MATH	xxx3	College Algebra or Higher*	3
CISY	2153	Database Appl. & Programming I	3
HPED	xxx1	Physical Education	1
			16

## PROGRAMS AT ALFRED STATE

Third			
CISY	4033	Networking I	3
CISY	3223	Intro. to Web Page Development	3
MATH	2124	Statistics Methods and Analysis OR	
MATH	1123	Statistics I	3-4
ACCT	1124	Financial Accounting	4
	xxx3	Gen. Ed. "Other"	3
			16-17

Fourth			
BUAD	3153	Fundamentals of Management	3
	xxx3	Professional Elective**	3
SPCH	1083	Effective Speaking	3
	xxx3	Concentration Elective	3
	xxx3	Gen. Ed. "Other"	3
	xxx3	Open Elective	3
			18

Fifth			
CISY	5303	Web Programming I	3
BUAD	5003	Mgt. Communications	3
CISY	6103	Web Server Administration OR	
CISY	6503	Object-Oriented Programming OR	
CISY	7103	Multimedia Computing	3
	xxx3	Gen. Ed. "Natural Science"	3
	xxx3	Open Elective - Upper***	3
COMP	5703	Technical Writing II	3
			18

Sixth			
CISY	7203	Web Programming II	3
CISY	7003	Project Management	3
CISY	5723	Essentials of Info. Security	3
CISY	5403	Database Concepts	3
	xxx3	Open Elective	3
	xxx3	Professional Elective - Upper	3
			18

Seventh			
CISY	8403	Web Applications	3
CISY	8603	Seminar in Critical Issues in IT	3
	xxx3	Open Elective	3
	xxx3	Professional Elective - Upper	3
	xxx3	Liberal Arts Elective - Upper	3
			15

Eighth			
CISY	8712	Information Technology Internship****	12
			12

\*If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

\*\* Recommended: CISY 5233 - Human Computer Interaction or CISY 4053 Linux/Unix Admin & Scripting

\*\*\* Recommended: BUAD 5003 or BUAD 6113

\*\*\*\* GPA of 2.5 or higher required in major courses; GPA of 2.0 minimum overall; internship is student-initiated.

### GRADUATION REQUIREMENTS

- 128 credit hours inclusive of physical education course
- 39 credit hours in major field required courses
- 24 credit hours in professional courses
- 18 credit hours in core concentration
- 30 credit hours in liberal arts/general education courses
- a 2.5 grade point average in the major is needed for the required internship
- other requirements as stated in college academic regulations
- 8 general education areas are required, with 3 of 5 (art, language, other world civilizations, American history, western civilization)

**INTERIOR DESIGN**

**AAS Degree – Code #0656**

This program is designed to provide graduates with basic knowledge and skills for entry-level positions in the interior design discipline. The program consists of a core graphics sequence with additional courses in appropriate technical areas. Computer applications are integrated throughout the four semesters with a strong component in 2D and 3D computer graphics. The faculty consists of interior designers as well as licensed architects and engineers.

A laptop computer is required for students entering the interior design program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**PROGRAM STUDENT LEARNING OUTCOMES**

- Think creatively, visually and volumetrically, exhibiting a variety of ideas, approaches and concepts when designing interior projects.
- Understand and utilize color principles, theories, and systems in their design projects.
- Demonstrate competent design skills in selection of interior finishes, selection and layout of furniture, lighting, and decorative elements.
- Demonstrate understanding of ergonomics, and the relationship between human behavior and the built environment.
- Demonstrate understanding of the history of art, architecture, interiors, and furnishings and appropriate selection and application of art and accessories.
- Apply 2-dimensional design elements and principles in interior design projects, and apply 3-dimensional design elements and principles to the development of the spatial envelope.
- Demonstrate programming skills, including problem identification, identification of client and user needs, and information gathering research and analysis.
- Demonstrate competence in drafting and lettering (manual and computer aided) illustrative sketching, and presentation of color, materials and furnishings in material boards,
- Express ideas clearly in oral presentations and critiques, and communicate clearly in writing concept statements, reports, and research papers.
- Understand that design solutions affect and are impacted by construction systems, power and mechanical, lighting and ceiling systems, acoustics, building methods and materials.

**FACILITIES FOR INSTRUCTION**

The facilities consist of four laptop-ready, 20-station freshman/sophomore studios. Peripheral devices such as scanners, color printers/plotters, and digital camera equipment are available, as is a material and flooring sample room. A School-wide 3D Printing Fabrication Laboratory is in preparation. The studios are open evenings and weekends for student use.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State interior design graduates may enter directly into the technology management BBA degree program.

**TRANSFER OPPORTUNITIES**

Upon successful completion of this program, students may continue in Alfred State's BBA program in technology management.

**ARTICULATION AGREEMENTS**

An articulation agreement exists between Alfred State and Villa Maria College (with placement based on a portfolio review and an interview).

**OCCUPATIONAL OPPORTUNITIES**

- Interior Designer (after successfully passing the NCIDQ and completing internship requirements)
- Kitchen & Bath Designer
- Space Planner
- Product Showroom Manager
- Product Specifier
- Manufacturer's Representative
- Facilities Manager

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 33 percent are employed; 67 percent transferred to continue their education.

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry  
 Recommended: Algebra 2/Trigonometry

**Interior Design - AAS Degree**

**TYPICAL FOUR-SEMESTER PROGRAM**

First				
ARCH	1184	Design Fundamentals	1	4
ARCH	1013	Introduction to Design		3
FNAT	1303	Architectural History I		3
ARCH	1433	Furniture and Finishes		3
COMP	1503	Freshman Composition		3
				16

## PROGRAMS AT ALFRED STATE

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### Second

DSGN	2223	History of Interiors	3
ARCH	2394	Design Fundamentals 2	4
ARCH	4403	Computer Visualization	3
MATH	1423	Explorations in Geometry	3
	xxx3	General Ed Elective - Humanities	3
			16

### Third

DSGN	2204	Interior Design I	4
DSGN	1443	Color, Lighting, and Acoustics	3
ARCH	3014	Construction Technology 1	4
SPCH	1083	Effective Speaking	3
FNAT	1313	Art History	3
			16

### Fourth

DSGN	2304	Interior Design II	4
ARCH	4014	Construction Technology 2	4
ARCH	4013	Municipal Codes and Regulations	3
BUAD	4004	Essent. of Entrepreneurship & Small Bus. Mgt.	4
HLTH	1313	Nutrition	3
			18

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Minimum of "C" is required for ARCH 1184, ARCH 2394, DSGN 2204, and DSGN 2304.

Also required: One unit of physical education.

### GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0 which is equivalent to a "C" average.

**LIBERAL ARTS & SCIENCES: ADOLESCENT EDUCATION - TEACHER EDUCATION TRANSFER**

**AA Degree – Code #1804**

Michael Cobb, Program Coordinator  
 Email address: cobbmj@alfredstate.edu

This transfer program prepares students to transfer into baccalaureate programs in adolescent education at public and private colleges and universities. Graduates will have satisfied all of SUNY's general education knowledge requirements and will have completed two courses in a foreign language, one course in adolescent development, one in foundations of education, and at least four courses in one of six concentrations – history/social studies, biology, chemistry, English, math, or physics.

**PROGRAM STUDENT LEARNING OUTCOMES**

1. Apply critical thinking skills to the analysis of typical issues in education.
2. Perform the basic operations of personal computer use, as well as employ basic research techniques to locate, evaluate and synthesize information from a variety of sources.
3. Communicate effectively and appropriately in written and oral forms.
4. Demonstrate competence of subject matter in the content area of specialization.
5. Identify the basic concepts and theories in adolescent development.
6. Identify basic pedagogical terms and theories.
7. Demonstrate competence in all ten general education knowledge areas defined by SUNY.
8. Broaden one's understanding of the world and self.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State liberal arts & sciences: adolescent education (teacher education transfer) graduates may enter directly into the technology management BBA degree program.

**TRANSFER OPPORTUNITIES**

Transfer requirements for students in adolescent education vary across public and private colleges and universities. Therefore, students should work closely with their faculty adviser to ensure that they meet the particular entrance requirements of their transfer college of choice. The minimum cumulative grade point average for admission as a transfer student in adolescent education to SUNY colleges and universities varies from 2.5 to 3.0, with some transfer colleges also setting minimum grade point averages in concentration courses and

in courses in adolescent development and foundations of education.

**EMPLOYMENT STATISTICS**

The New York State Department of Labor rates the employment prospects for secondary school teachers as favorable through 2016 while the U.S. Department of Labor expects employment for secondary school teachers to grow by nine percent through 2018.

**RELATED PROGRAMS**

- Biological Science
- Liberal Arts & Sciences: Social Sciences
- Liberal Arts & Sciences: Humanities
- Liberal Arts & Sciences: Math & Science

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

- Biology and Chemistry concentrations: Algebra, Geometry, Algebra 2/Trigonometry, Biology, Chemistry
- History/Social Studies and English concentrations: Algebra
- Math and Physics concentrations: Algebra, Geometry, Algebra 2/Trigonometry, Biology and Chemistry or Physics

**Liberal Arts & Sciences: Adolescent Education (Teacher Education Transfer) - AA Degree**

**TYPICAL FOUR-SEMESTER PROGRAM**

**HISTORY/SOCIAL STUDIES CONCENTRATION**

FIRST			
COMP	1503	Freshman Comp.	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American History	3
SPAN	1203	Spanish I	3
MATH	xxx3	Math Elective	3
HPED	1111	Health & Wellness	1
			16

SECOND			
PSYC	2033	Adolescent Dev.	3
SPAN	2203	Spanish II	3
XXXX	XXX4	Natl. Sc. Elective w/Lab	4
LITR	2343	Children's Lit. OR	3
LITR	2603	Intro. to Lit.	3
HIST	2153	Survey of American History II	3
			16

THIRD			
HIST	1113	Western Civilization	3
FNAT	xxx3	Fine Arts Elective	3
PLSC	1053	Intl. Relations OR	3
SOCI	1193	Marriage & Family Across World Civ.	3
ECON	1013	Macroeconomics	3
XXXX	xxx3	Open Elective	3
			15

## PROGRAMS AT ALFRED STATE

Fourth			
EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3
PLSC	1043	American Government	3
XXXX	XXX3	Open Elective	3
XXXX	xxx3	Liberal Arts Elective	3
			15

FOURTH			
EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3
SPAN	2203	Spanish II	3
CHEM	4524	Organic Chemistry II	4
XXXX	XXXX	Open Elective	3-4
			16-17

### BIOLOGY CONCENTRATION

FIRST			
COMP	1503	Freshman Comp.	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American History	3
BIOL	1104	General Biology	4
MATH	1054	Pre-Calculus	4
			17

### PHYSICS CONCENTRATION

FIRST			
COMP	1503	Freshman Comp.	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American History	3
SPAN	1203	Spanish I	3
MATH	1054	Pre-Calculus	4
			16

### SECOND

PSYC	2033	Adolescent Dev.	3
LTR	2603	Intro. to Lit.	3
HIST	1113	Western Civilization	3
BIOL	2204	General Biology II	4
FNAT	XXX3	Fine Arts Elective	3
			16

### SECOND

PSYC	2033	Adolescent Dev.	3
LTR	2343	Children's Lit. OR	3
LTR	2603	Intro. to Lit.	3
SPAN	2203	Spanish II	3
PHYS	1044	College Physics I	4
MATH	1084	Calculus I	4
			17

### THIRD

SPAN	1203	Spanish	3
HPED	1111	Health & Wellness	1
BIOL	4254	General Micro	4
SOCI	1193	Marriage & Family Across World Civ.	3
XXXX	XXX	Open Elective	3-4
XXXX	XXX	Liberal Arts Elective	3
			17-18

### THIRD

PLSC	1053	Intl. Relations or	3
SOCI	1193	Marriage & Family Across World Civ.	3
HIST	1113	Western Civilization	3
MATH	2094	Calculus II	4
PHYS	2044	College Physics II	4
FNAT	XXX3	Fine Arts Elective	3
			17

### FOURTH

SPAN	2203	Spanish II	3
EDUC	2163	Foundations of Education	3
XXXX	XXXX	Natl. Sc. Elective w/Lab	4
SPCH	1083	Effective Speaking	3
XXXX	XXX	Open Elective	3-4
			17
			16-17

### FOURTH

EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3
MATH	6104	Multivariate & Vector Calculus	4
XXXX	XXX3	Open Elective	3
HPED	1111	Health & Wellness	1
			14

### CHEMISTRY CONCENTRATION

FIRST			
COMP	1503	Freshman Comp.	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American History	3
CHEM	1984	Chemical Principles	4
MATH	1054	Pre-Calculus	4
			17

### MATH CONCENTRATION

FIRST			
COMP	1503	Freshman Comp.	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American History	3
SPAN	1203	Spanish I	3
MATH	1054	Pre-Calculus	4
HPED	1111	Health & Wellness	1
			17

### SECOND

PSYC	2033	Adolescent Dev.	3
LTR	2343	Children's Lit. OR	3
LTR	2603	Intro. to Lit.	3
HIST	1113	Western Civilization	3
CHEM	2984	Chemical Principles II	4
FNAT	XXX3	Fine Arts Elective	3
			16

### SECOND

PSYC	2033	Adolescent Dev.	3
LTR	2343	Children's Lit. OR	3
LTR	2603	Intro. to Lit.	3
SPAN	2203	Spanish II	3
XXXX	XXX4	Nat. Sc. Elective w/Lab	4
MATH	1084	Calculus	4
			17

### THIRD

PLSC	1053	Intl. Relations OR	3
SOCI	1193	Marriage & Family Across World Civ.	3
SPAN	1203	Spanish I	3
HPED	1111	Health & Wellness	1
XXXX	XXXX	Open Elective	3-4
XXXX	XXX3	Liberal Arts Elective	3
CHEM	3514	Organic Chemistry	5
			17-18

### THIRD

PLSC	1053	Intl. Relations OR	3
SOCI	1193	Marriage & Family Across World Civ.	3
HIST	1113	Western Civilization	3
MATH	2094	Calculus II	4
MATH	3003	Linear Algebra	3
FNAT	XXX3	Fine Arts Elective	3
			16



## LIBERAL ARTS & SCIENCES: ADOLESCENT EDUCATION - TEACHER EDUCATION TRANSFER

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### FOURTH

EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3
MATH	6104	Multivariate & Vector Calculus	4
	XXX3	Liberal Arts Elective	3
MATH	2163	Discrete Mathematics	3
			16

### ENGLISH CONCENTRATION

#### FIRST

COMP	1503	Freshman Comp.	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American History I	3
SPAN	1203	Spanish I	3
MATH	XXX3	Math Elective	3
HPED	1111	Health & Wellness	1
			16

#### SECOND

PSYC	2033	Adolescent Dev.	3
LITR	2603	Intro. to Lit.	3
SPAN	2203	Spanish II	3
	XXX4	Natl. Sci. Elective w/Lab	4
COMP	7003	Classical Rhetoric	3
			16

#### THIRD

PLSC	1053	Intl. Relations OR	3
SOCI	1193	Marriage & Family Across World Civ.	3
HIST	1113	Western Civilization	3
LITR	3233	Survey of American Lit. I	3
LITR	2343	Children's Lit.	3
FNAT	XXX3	Fine Arts Elective	3
			15

#### FOURTH

EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3
LITR	7203	British Literature	3
	xxx3	Open Elective	3
	XXX3	Liberal Arts Elective	3
			15

### GRADUATION REQUIREMENTS

- Good academic standing (cumulative GPA of 2.0 or higher)
- Successful completion of all courses in the prescribed four-semester plan
- Submission of the college's degree application form

## PROGRAMS AT ALFRED STATE

### LIBERAL ARTS & SCIENCES: HUMANITIES

#### AA Degree – Code #0201

Robert Curry, Program Coordinator  
 Email address: curryr1@alfredstate.edu

Liberal arts & sciences: humanities is for those planning to continue their education at a four-year college or university. By careful selection of elective credits, the graduate is qualified to enter a baccalaureate program as a third-year student in a variety of fields. The program also serves an exploratory function for those students who have not decided on a field of study or a specific career.

The liberal arts & sciences: humanities program prepares students for life by stressing the importance of reading, writing, and thinking while developing in them an appreciation of the arts and the wisdom of great minds.

#### PROGRAM STUDENT LEARNING OUTCOMES

1. Create written communication appropriate for audience and purpose and which meets standards of style, clarity, and grammatical correctness as described in the Writing Rubric.
2. Create oral communication appropriate for audience and purpose and which meets standards of presentation as described in the Effective Speaking Rubric.
3. Construct and recognize arguments in both written and oral formats that are free from logical defects, as described in the Critical Thinking Rubric.
4. Use library, online, and other resources to locate and evaluate scholarly articles and other research materials.
5. Create research-based prose in literature, history, philosophy, or the arts.
6. Articulate the relevance of the humanities to the self and society.
7. Complete eight of the ten SUNY General Education requirements and meet the two infused competencies.
8. Understand self and demonstrate sensitivity to others of different cultures or perceptions to work constructively in a pluralistic society
9. Analyze and appraise moral and ethical dilemmas
10. Analyze and evaluate the obligations of knowledge to promote common good

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State liberal arts & sciences: humanities graduates may enter directly into the technology management BBA degree program.

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 17 percent are employed; 83 percent transferred to continue their education.

#### RELATED PROGRAMS

Health Information Technology  
 Human Services  
 Individual Studies  
 Liberal Arts & Sciences: Math & Science  
 Liberal Arts & Sciences: Social Science  
 Nursing

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra  
 Recommended: Geometry, Biology

### Liberal Arts & Sciences: Humanities - AA Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
PHIL	xxx3	Philosophy Elective	3
MATH	xxx3	Math Elective	3
	xxx3	Gen. Psych or Sociology	3
	xxx3	Western Civilization	3
			15

Second			
LITR	2603	Introduction to Literature	3
	xxx3	Humanities Elective	3
MATH	xxx3	Math Elective	3
HIST	xxx3	American History I or II	3
FNAT	xxx3	Fine Arts Elective	3
			15

Third			
	xxx3	Humanities Elective	3
SOCI	xxx3	Social Science Elective	3
SPCH	1083	Effective Speaking	3
	xxx3	Science Elective	3-4
	xxx3	Open Elective	3
			15-16

Fourth			
	xxx3	Humanities Elective	3
	xxx3	Science Elective	3-4
	xxx3	Open Electives	9
			15-16

All students must pass COMP 1503 Freshman Composition with a "C" or better, and take LITR 2603 Introduction to Literature.

Each student must take five (5) courses from the following list:

ITAL	1303	Italian I
ITAL	2303	Italian II
LITR	2033	The Short Story
LITR	2343	Children's Literature

LITR	2503	Identity and Literature
LITR	2703	Science Fiction
LITR	2813	Introduction to Film
LITR	2913	Introduction to Poetry
LITR	3233	Survey of American Literature I
LITR	3333	Survey of British Literature I
LITR	7003	Literature and Nature
COMP	3503	Advanced Composition
COMP	3703	Technical Writing
PHIL	1073	Intro to Philosophy
PHIL	2013	Critical Thinking
PHIL	2173	Ethics
RELG	7003	Religion of the World
SPAN	1203	Spanish I
SPAN	2203	Spanish II

Also required: Writing portfolio and one unit of physical education.

**GRADUATION REQUIREMENTS**

Each student must successfully complete 60 credit hours (excluding HPE) with a minimum grade point average of 2.0.

**Portfolio Requirement for all Liberal Arts: Humanities students:**

Liberal arts and sciences: humanities (430) students must satisfy the writing portfolio graduation requirement. The writing portfolio, submitted during the student’s last semester of study, has these specific requirements:

1. The portfolio must contain a minimum of four papers.
2. One of the four must use outside sources and correct documentation format.
3. Not more than three of the four papers should be from an English or humanities class.
4. One of the papers should be from the student’s first semester of study.
5. One paper should represent the student’s best work.
6. The portfolio may contain up to two other pieces of writing that the student would like included to demonstrate writing ability (for a maximum of six pieces total).
7. If available, a record of the composing process, including prewriting steps and drafts with evidence of editing, should accompany one of the papers.
8. A cover letter and a self-appraisal as described below

Papers submitted in the portfolio must be copies (not the originals handed in for class) and be clear of any grades or comments. A signed professor certification form must accompany each paper. The student should indicate on that form the semester the paper was written.

The portfolio must contain a cover letter to the Department of English and Humanities faculty containing these items:

- a brief explanation of what the assignment was for each of the enclosed papers,
- a self-evaluation of the work with reference to the Alfred State writing rubric,
- any additional information the student would like the writing faculty to consider, and
- commentary on any increased thinking and writing ability demonstrated throughout the portfolio.

The portfolio must include a self-appraisal with separate long paragraphs responding to each of these questions:

1. Using examples of texts you encountered at Alfred State about cultures or perceptions different from your own, describe what you have learned about the value of diversity.
2. Describe your understanding of the goals of the Humanities, and explain how these goals relate to you and to society

The deadline for submission to the English and Humanities Department secretary, 330 Student Development Center, near the end of the graduating semester.

The criteria for evaluation are contained in the Alfred State writing rubric. Students should include papers that demonstrate these abilities:

1. establish a central idea (thesis) and a controlling viewpoint;
2. create an appropriate organization plan – with a clear beginning, middle, and end – suitable for the audience and purpose of the paper;
3. develop paragraphs with specific, concrete information;
4. write sentences that avoid errors that decrease the writer’s credibility; and
5. use external sources appropriately by paraphrasing, quoting, summarizing, and documenting all sources properly.

The writing faculty of the Department of English and Humanities will evaluate the portfolio to determine whether it should be graded “high pass,” “pass,” or “fail.” This evaluation will appear on the student’s permanent Alfred State transcript.

Questions about this graduation requirement should be directed to the student’s academic adviser.

## PROGRAMS AT ALFRED STATE

### Writing Rubric

Papers must demonstrate competence in each of the following areas. A score of 3 in one area indicates competence (meeting the standard) in that area. A total score of 15 or more indicates at least a general level of competence for the whole paper. A total score of 14 or less indicates not meeting the standard. 0 in any one of the categories below indicates that the paper cannot be scored according to the various criteria below.

	<b>EXCEEDS (4 pts/criterion)</b>	<b>MEETS (3 pts/criterion)</b>	<b>APPROACHES (2 pt/criterion)</b>	<b>DOES NOT Meet (1pt/criterion)</b>
Elaboration/ Support/Style	The thesis is original, well established, and intelligently presented. The thesis is crafted well to address a specific and an appropriate audience and is developed to meet or to exceed the assignment specifications.	The writing has a thesis; this thesis gives adequate attention to issues of audience and is developed to meet the assignment specifications.	The writing has a thesis that is unclear and/or inadequate for the subject scope and/or only meets, in part, the assignment specification.	The writing has no thesis and does not meet assignment specifications.
Focus/Coherence/ Organization	The writing as a whole responds intelligently and creatively to the assignment prompt, is highly attentive to audience, has a single and well-directed focus, exhibits a logical flow of ideas and events ordered in clear and coherent paragraphs, and includes an opening that draws the reader in as well as an effective close.	The writing as a whole gives a complete response to the assignment prompt, is appropriate to audience, has a single focus and exhibits a logical flow of ideas and/or events that is ordered in clear and coherent paragraphs, and includes an effective introduction and conclusion.	The writing does not give an adequate response to assignment prompt, is not attentive to audience, has a focus that leaves underdeveloped only some main points, but it does not, in all cases, order ideas in effective paragraphs or have an adequate introduction and conclusion.	The writing does not respond to assignment prompt, is not attentive to audience, does not focus on topic, does not order ideas in complete paragraphs, and does not have an introduction and conclusion.
Purpose/Principle/ Argument	Each main idea is thoroughly and completely supported by details and is cited, when appropriate, according to the MLA, APA or the style specified by the instructor; all details relate to the topic; the choice of details is effective; ideas/events are related by effective transition words and phrases. The writing exhibits a distinctive sentence style and precise, interesting, and vivid word choices.	The main ideas are well supported by details and are cited, when appropriate, according to the specified documentation style; the details are, by and large, connected well to the topic; ideas/events are related by transition words and phrases. The writing uses a language appropriate to the discipline.	The main ideas are not sufficiently supported by details and are not, in many cases, cited according to the specified documentation style; details and/or evidence in some paragraphs may be sketchy; details are frequently unrelated to the topic; transitions are not generally used, sentence style is not maintained; word choice is not fully adequate to convey meaning and appropriate to audience and to discipline.	The main ideas are inadequately or unevenly developed; the narrative details are sketchy or irrelevant and are not cited according to the specified documentation style; few or no transitions are used; the style is not appropriate to audience. The use of language is inadequate.
Revisions	The writing demonstrates a sophisticated and consistent command of Standard English; is free of spelling, capitalization, and usage errors; uses precise syntax; and contains few, if any, errors in punctuation.	The writing demonstrates the knowledge of Standard English; is free of spelling, capitalization, and usage errors; uses correct syntax; and contains few, if any, errors in punctuation.	The writing contains a number and type of errors that, with frequency, obscure meaning; exhibits a consistent command of Standard English; and contains few, if any, spelling, capitalization, or usage errors and few, if any, errors in punctuation.	The number and/or type of errors obscure meaning; there are frequent errors in spelling, capitalization, and usage; there are serious and frequent errors in punctuation; there are fragments or run-on sentences.
Grammar, Usage, and Mechanics	The writing exhibits considerable changes from the rough to the final draft. These revisions as a whole demonstrate the writer's high level of skill in diagnosing issues in areas such as coherence and elaboration and in devising creative and intelligent ways to improve significantly the quality of the written communication.	The revisions as a whole exhibit the writer's ability to diagnose significant issues in areas such as coherence and elaboration and to devise competent solutions to raise measurably the quality of the written communication.	The revisions as a whole exhibit only partial competency on the part of the writer in diagnosing issues in areas such as coherence and elaboration and in devising competent solutions to raise measurably the quality of the written communication.	The writing exhibits little or no change from the rough to final draft.

**LIBERAL ARTS & SCIENCES: MATH & SCIENCE****AA Degree – Code #0645**

Dr. Kathleen Ebert, Program Coordinator  
Email address: ebertyc@alfredstate.edu

The mathematics and science emphasis serves students who wish to transfer and enter career programs which depend upon a background in mathematics and/or science.

**PROGRAM STUDENT LEARNING OUTCOMES**

1. **MATHEMATICS:** demonstrate competence in arithmetic, algebra, geometry, data analysis, and quantitative reasoning.
2. **NATURAL SCIENCES:** demonstrate understanding of the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of mathematical analysis.
3. **COMMUNICATION & INFORMATION:** Employ proficient written and verbal communication skills, including the appropriate uses of technology
4. **GENERAL EDUCATION:** Demonstrate foundational knowledge required to be an informed citizen in a global community
5. **REASONING:** identify, analyze, and evaluate arguments as they occur in their own and others' work and develop well-reasoned argument
6. **INFORMATION MANAGEMENT:** perform the basic operations of personal computer use, understand and use basic research techniques and locate, evaluate, and synthesize information from a variety of sources

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State liberal arts & sciences: math and science graduates may enter directly into the technology management BBA degree program.

**TRANSFER OPPORTUNITIES**

This program offers two options: liberal arts & sciences: math & science or pre-environmental science & forestry. The first allows students the opportunity to concentrate in either math and/or science. This program is designed in such a way that the student and adviser work together to match courses at Alfred State with first- and second-year courses at the desired transfer school so that the student may enter a baccalaureate program as a full third-year student. Some typical fields of study which graduates choose to enter are

mathematics, statistics, math or science education, physical education, biology, chemistry, physics, physical therapy, athletic training, engineering, pre-med, pre-vet, dentistry, or pharmacy.

Articulation agreements are available with SUNY Pre-Environmental Science and Forestry at Syracuse (environmental science), New York Chiropractic College, and SUNY Health Science Center at Syracuse (joint admission).

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 15 percent are employed; 85 percent transferred to continue their education.

**RELATED PROGRAMS**

Biological Science  
Forensics  
Individual Studies  
Liberal Arts & Sciences: Humanities  
Liberal Arts & Sciences: Social Science  
Pre-Environmental Science & Forestry

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, and Algebra 2/Trigonometry; Biology; Chemistry or Physics  
Recommended:  
Both Chemistry and Physics

**Liberal Arts & Sciences: Math & Science - AA Degree****TYPICAL FOUR-SEMESTER PROGRAM**

First	
Freshman Composition	3
Mathematics	3-4
Science	4
Psychology or Sociology	3
Gen. Education Elective	3
	16-17

Second	
Literature	3
Mathematics	3-4
Science	4
Gen. Education Elective or Philosophy	3
Computer Language	3
	16-17

Third	
Mathematics and/or Science	6-8
Gen. Education Elective	3
Free Elective	6
	15-17

Fourth	
Mathematics and/or Science	6-8
Gen. Education Elective	3
Free Elective	6
	15-17

Also required: One unit of physical education.

### GRADUATION REQUIREMENTS

A minimum of 61 credit hours is required for graduation with a cumulative index of 2.0. Students must also have a cumulative index of at least 2.0 in mathematics and science sequence courses.

**LIBERAL ARTS & SCIENCES: SOCIAL SCIENCE (AA)**

**AA Degree – Code #0212**

Michael Cobb, Program Coordinator

Email address: cobbmj@alfredstate.edu

This transfer program emphasizes course work in the social and behavioral sciences and in the liberal arts. By careful selection of electives, graduates are able to enter baccalaureate programs at the third-year level with all their general education requirements met.

**PROGRAM STUDENT LEARNING OUTCOMES**

1. Apply critical thinking skills to the analysis of typical issues in the social sciences.
2. Perform the basic operations of personal computer use, as well as employ basic research techniques to locate, evaluate and synthesize information from a variety of sources.
3. Communicate effectively and appropriately in oral and written forms.
4. Discuss the social, psychological and historical influences on human behavior.
5. Identify the steps of the scientific method and discuss the research methods employed by social scientists.
6. Recognize the effects of globalization.
7. Identify the basic terminology related to the theories and research of the Social Sciences.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State liberal arts & sciences: social science graduates may enter directly into the technology management BBA degree program.

**TRANSFER OPPORTUNITIES**

Graduates are qualified to enter baccalaureate programs in a variety of academic disciplines such as psychology, sociology, anthropology, history, and political science as well as in such professional fields as early childhood/childhood education, adolescent education, criminal justice, pre-law, human services management, and business administration. Among the colleges to which recent graduates have successfully transferred are Alfred University, University of Buffalo, Cornell University, SUNY Cortland, SUNY Fredonia, SUNY Geneseo, and St. Bonaventure University.

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 5 percent are employed; 95 percent transferred to continue their education.

**RELATED PROGRAMS**

- Human Services
- Human Services Management
- Individual Studies
- Liberal Arts & Sciences: Adolescent Education (Teacher Education Transfer)
- Liberal Arts & Sciences: Humanities
- Liberal Arts & Sciences: Math & Science

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

- Required: Algebra
- Recommended: Geometry, Biology

**Liberal Arts & Sciences: Social Science - AA Degree**

**TYPICAL FOUR-SEMESTER PROGRAM**

First			
COMP	1503	Freshman Composition	3
PSYC	1013	General Psychology	3
SOCI	1163	General Sociology	3
MATH	xxx3	Math Elective	3
	xxx3	American History Elective	3
			15

Second			
PSYC	1023	Human Development	3
LITR	2603	Introduction to Literature	3
SOCI	xxx3	Sociology Elective	3
MATH	xxx3	Math Elective	3
HIST	1113	Western Civilization	3
			15

Third			
SOCI	1183	Contemporary Social Problems	3
PSYC	xxx3	Psychology Elective	3
FNAT	xxx3	Fine Arts Elective	3
	xxxx	Nat. Sci. Elective	3-4
	xxxx	Open Elective	3
			15-16

Fourth			
	xxx3	Other World Civiliz. Elective	3
	xxxx	Natural Science Elective	3-4
	xxx3	Open Elective	3
	xxx3	Open Elective	3
SOCI	1223	Minority Cultures	3
			15-16

Also required: One credit hour of physical education.

**GRADUATION REQUIREMENTS**

- Good academic standing (2.0 cumulative GPA) or higher
- Successful completion of all courses in the prescribed 4-semester plan
- Submission of the college's degree application form

## PROGRAMS AT ALFRED STATE

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### MACHINE TOOL TECHNOLOGY

#### AOS Degree – Code #0551

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The machine tool technology program features instruction in the safe operation of all basic machine tools, such as lathes, milling machines, drill presses, various saws, and grinding equipment, as well as proper measurement and inspection of parts. Interpreting engineering drawings and mathematical calculations required by all machinists is also presented.

The second year includes shop math and CNC (Computer Numerical Controls) programming with an emphasis on hands-on skills using advanced machine tools. A strong emphasis on shop safety is an integral part of the program. The AOS degree program includes operation of CNC lathes (turning centers), and CNC milling machines (machining centers). This includes set-up as well as operation of the machines. Interpreting engineering drawings and control documents will also be emphasized. The understanding of quality control and how to conduct appropriate measurements and inspection will be integrated into the course work. The intent is to graduate someone with overall advanced machine shop skills.

A full CNC laboratory as well as machining centers, turning centers, and access to an electronic discharge machine are located at the Dresser-Rand facility in Wellsville used by Alfred State machine tool students.

With the successful completion of the two years, an AOS (Associate of Occupational Studies) degree will be awarded in machine tool technology.

The average salary for a machinist in industry today is ranked the seventh highest among all American professions (including doctors, lawyers, etc.), and this average salary is higher than the average salary for all four-year college graduates.

So if earning a high salary is on your list for selecting occupational opportunities, you need to look at machine tool technology. Over 50 percent of all machinists in America today will retire in the next 10 to 15 years. This fact alone shows the tremendous opportunity that awaits the trained and well-qualified machinist.

### PROGRAM STUDENT LEARNING OUTCOMES

- Demonstrate and apply safe operations of all machine tools.
- Student will be proficient in basic lathe operations.
- Student will be proficient in basic milling operations.
- Demonstrate mathematical operations using accepted mathematical applications.
- Demonstrate ability to perform advanced procedures on assigned projects.
- Student will be proficient in writing CNC programs for lathe.
- Student will be proficient in writing CNC programs for milling machine.
- Student will be proficient and apply GDT to all projects.
- Student will demonstrate ability to operate CNC equipment.
- Student will demonstrate all knowledge in senior capstone project.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State machine tool technology graduates may enter directly into the technology management BBA degree program.

### OCCUPATIONAL OPPORTUNITIES

- CNC Machinist
- Tool and Die Makers
- Machine Setters and Operators
- Machinists
- Mold Makers

### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 75 percent are employed; 25 percent transferred to continue their education.

### RELATED PROGRAMS

Welding Technology

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra



**TECHNICAL STANDARDS**

Applicants for the machine tool technology program must meet the following physical requirements:

- Must be able to perform safely in the shop.
- Must be able to lift 50 pounds up to eye level.
- Must be able to communicate orally with a person six-10 feet away in a shop environment.
- Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to understand and retain information found in service repair manuals and use diagnostic flow charts.
- Must be able to visually read an LCD display on welding equipment.
- Must have the dexterity and mobility to weld in all the welding positions to meet all requirements.
- Good eyesight is recommended.

Students are required to have earned a minimum grade of “C” in MACH. CALC. I & II also MATT 4003 senior project. (Articulation is available in MACH. CALC. area.)

**Machine Tool – AOS Degree**

First			
MATT	1004	Basic Industrial Machining	4
MATT	1014	Industrial Machining I	4
MATT	1024	Industrial Machining II	4
MATT	1713	Read'g. Engineering Drawings I	3
MATT	1913	Machinist Calculations I	3
			<b>18</b>

Second			
MATT	1234	Industrial Machining III	4
MATT	1244	Industrial Machining IV	4
MATT	1254	Industrial Machining V	4
MATT	1723	Read'g. Engineering Drawings II	3
MATT	1923	Machinist Calculations II	3
			<b>18</b>

Third			
MATT	3005	Intro. CNC Machine Program'g.	5
MATT	3015	CNC Industrial Machining I	5
MATT	3025	CNC Industrial Machining II	5
MATT	3003	Geo. Dimension & Tolerancing	3
			<b>18</b>

Fourth			
MATT	4005	CNC Industrial Machining III	5
MATT	4015	CNC Industrial Machining IV	5
MATT	4025	CNC Industrial Machining V	5
MATT	4003	Senior Project	3
			<b>18</b>

**GRADUATION REQUIREMENTS:**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a “C” average.

## PROGRAMS AT ALFRED STATE

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### MARKETING

#### AAS Degree – Code #0633

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Steven Reynolds, Program Coordinator  
Email address: reynolsa@alfredstate.edu

The American Marketing Association defines marketing as “the process of planning and executing the conception, promotion, and distribution of ideas, goods, and services to create exchanges that satisfy individual and organizational objectives.” Marketing includes the numerous business activities required to satisfy the needs of the consumer and industrial buyer. The marketing program at Alfred State focuses on the consumer and industry. Communication skills are emphasized in basic courses in management, accounting, advertising, consumer behavior, industrial marketing, and salesmanship. The program’s liberal arts foundation provides a basis for the human relations elements in the study of marketing.

A laptop computer is recommended, but not required, for students entering the marketing program. The college will provide a list of appropriate laptops to all students who have been accepted to attend Alfred State.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Achieve an understanding of concepts and applications in the aspects of the marketing mix.
- Achieve an understanding of concepts and applications in the design and implementation of a sales presentation.
- Achieve an understanding of concepts and applications in the analysis of consumer-buying behavior.
- Achieve an understanding of concepts and applications in interpreting the various aspects of advertising, including, but not limited to demographics, brand awareness, the marketing mix and media selection.
- Achieve an understanding of concepts and applications in the use of technology in marketing communications.
- Achieve an understanding of concepts and applications in developing an effective web page.
- Written & Oral Communication (appropriate to degree level and type)
- Critical Thinking (problem solving, reasoning skills appropriate to degree level and type)

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State marketing graduates may enter directly into either the business administration BBA or technology management BBA degree program at Alfred State.

### TRANSFER OPPORTUNITIES

Students may transfer directly into one of our own BBA degree programs or to another college. Although not limited to these schools, common transfer institutions include Alfred University, St. Bonaventure University, Rochester Institute of Technology, St. John Fisher College, SUNY at Albany, University at Buffalo, SUNY College at Brockport, SUNY College at Fredonia, SUNY College at Geneseo, SUNY College at Oneonta, SUNY College at Oswego, SUNY at Binghamton, Canisius College, Niagara University, and Hilbert College.

### OCCUPATIONAL OPPORTUNITIES

- Consumer and Industrial Sales
- Service Institutions
- Banks
- Advertising Agencies
- Financial and Credit Agencies
- Insurance Companies
- Recreational Businesses
- Tourist Bureaus
- Transportation Systems

### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 100 percent transferred to continue their education.

### RELATED PROGRAMS

Accounting  
Business Administration  
Business Administration (Transfer)  
Business Management (Career)  
Financial Planning  
Financial Services  
Technology Management

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra

Recommended: Geometry, Algebra 2/Trigonometry

**Marketing - AAS Degree**

TYPICAL FOUR-SEMESTER PROGRAM

First			
MKTG	2073	Principles of Marketing	3
ACCT	1124	Financial Accounting	4
CISY	xxx3	Intro to Computers/Info Mgt. Elective	3
COMP	1503	Freshman Composition	3
MATH	xxx3	Math Elective	3
HPED	xxx1	Physical Education Elective	1
			17

Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
BUAD	3153	Fundamentals of Management	3
MATH	xxx3	Math Elective	3
LITR	xxx3	Literature Elective	3
			16

Third			
BUAD	3043	Business Law I	3
ECON	1013	Macroeconomics	3
MKTG	1033	Advertising Principles	3
BUAD	4203	Personal Financial Planning	3
	xxx3	General Education Elective	3
			15

Fourth			
BUAD	4053	Business Law II	3
ECON	2023	Microeconomics	3
MKTG	1063	Principles of Sales	3
MKTG	3153	Web Design & Marketing	3
	xxx3	Business or Computer Elective	3
			15

**GRADUATION REQUIREMENTS**

63 semester hours with a 2.0 cumulative index.

## PROGRAMS AT ALFRED STATE

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### MASONRY

#### AOS Degree – Code #0401

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George H. Richardson, Program Coordinator  
Email address: richargh@alfredstate.edu

The building construction program provides basic instruction in masonry. Each year there are students desiring additional instruction in masonry and employers seeking graduates with additional masonry skills. This program provides instruction in an extensive masonry program in the second, or senior, year. All masonry students must previously complete the common building construction freshman year program in good standing. Each student may specify in his/her initial application the desire for masonry, or may have the option of choosing masonry after completing the freshman year.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Estimate, layout, and build various masonry and concrete flatwork systems and explain how to supervise people.
- Properly choose and implement personal and job site safety and access equipment.
- Read and interpret construction drawings and specifications.
- Communicate construction details and estimates with written documents and scale shop drawings with written documents and scale shop drawings.
- Layout, prepare and install various concrete flatwork, block work, stone work, and brick work.
- Use the computer to access trade related specifications.
- Perform computer based research and communication.
- Demonstrate effective oral communication.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State masonry graduates may enter directly into the technology management BBA degree program.

#### OCCUPATIONAL OPPORTUNITIES

- Brick or Stone Salesman
- Kiln Mason
- Construction Foreman
- Estimator
- Salesperson
- Private or Commercial Remodeler
- Maintenance Supervisor
- Construction Superintendent
- Concrete Foreman

- Expediter
- Contractor
- Mason

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 78 percent are employed; 22 percent transferred to continue their education.

#### RELATED PROGRAMS

Air Conditioning & Heating Technology  
Building Trades: Building Construction  
Electrical Construction and Maintenance  
Electrician

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra

#### TECHNICAL STANDARDS

- Applicants in the masonry program must be able to meet the following physical requirements:
- Must be able to lift 50 pounds to shoulder height.
  - Must be able to perform safely in the laboratory.
  - Must be able to communicate orally with a person 20 feet away.
  - Must be able to climb a ladder and/or able to climb, un-aided, onto and off of equipment using three points of contact.
  - Must be able to stand for long periods of time.
  - Must be able to visually read from a blueprint or drawing.
  - Must be able to hear a backup warning alarm.

#### Masonry- AOS Degree

##### TYPICAL FOUR-SEMESTER PROGRAM

First			
BLCT	1132	Estimating I	2
BLCT	1142	Masonry I	2
BLCT	1021	College Life Skills	1
BLCT	1023	Construction Essentials I	3
BLCT	1024	Construction Essentials II	4
BLCT	1034	Work Place Envir. & Safety	4
BLCT	1022	Wood Fabrication Tech. I	2
			18

Second			
BLCT	2132	Estimating II	2
BLCT	2142	Masonry II	2
BLCT	2044	Construction Essentials III	4
BLCT	2054	Construction Essentials IV	4
BLCT	2064	Structural Components	4
BLCT	2032	Wood Fabrication Tech. II	2
			18

**Third**

BLCT	3159	Masonry III	9
BLCT	3169	Masonry IV	9
			18

**Fourth**

BLCT	4176	Masonry V	6
BLCT	4186	Masonry VI	6
BLCT	4043	Masonry Sketching & Detailing	3
BLCT	4053	Blueprint Reading for Masonry Systems	3
			18

**GRADUATION REQUIREMENTS**

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a “C” average.

### MECHANICAL ENGINEERING TECHNOLOGY

**AAS Degree - Code #0493**

**BS Degree - Code #0235**

Dr. Austin Cheney, AAS Program Coordinator

Email address: cheneyac@alfredstate.edu

Mechanical engineering technology program graduates are prepared to be mechanical technologists and technicians for industry in engineering-related areas including automotive component design, heating, ventilation, and air conditioning (HVAC), process and component design, mechanical systems design, energy systems, product development, and technical support and sales. Graduates will be able to design, specify, test, analyze, and install mechanical systems. They will have broad content exposure through the development of analytical skills and theory in the classroom and experience working with engines, complete energy systems, compressors, fans, pumps, controls, instrumentation, engineering graphics, and material testing. Every bachelor degree graduate is required to complete a capstone project or internship to bring together theoretical and practical skills.

Both mechanical engineering technology programs are accredited by the Engineering Technology Accreditation Commission of the Accreditation Board for Engineering and Technology [ETAC/ABET, 111 Market Place Suite 1050 Baltimore, MD 21202; (410) 347-7700, Fax: (410) 625-2238; email: [accreditation@ABET.org](mailto:accreditation@ABET.org); website: <http://www.abet.org>.

A laptop computer is required for students entering the mechanical engineering technology programs. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

#### PROGRAM STUDENT LEARNING OUTCOMES (PSLOs) - AAS Degree

- An ability to apply the knowledge, techniques, skills, and modern tools of the discipline to narrowly defined engineering technology activities;
- An ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge;
- An ability to conduct standard tests and measurements, and to conduct, analyze and interpret experiments;

- An ability to function effectively as a member of a technical team;
- An ability to identify, analyze, and solve narrowly defined engineering technology problems;
- An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
- An understanding of the need for and an ability to engage in self-directed continuing professional development;
- An understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity;
- A commitment to quality, timeliness, and continuous improvement.

#### PROGRAM STUDENT LEARNING OUTCOMES (PSLOs) - BS Degree

- An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
- An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require the application of principles and applied procedures or methodologies;
- An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;
- An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
- An ability to function effectively as a member of leader on a technical team;
- An ability to identify, analyze, and solve broadly-defined engineering technology problems;
- An ability to apply written, oral, and graphical communication in both technical and non-technical environments; and an ability to identify and use appropriate technical literature;
- An understanding of the need for and an ability to engage in self-directed continuing professional development;
- An understanding of and a commitment to address professional and ethical responsibilities including a respect for diversity;
- A knowledge of the impact of engineering technology solutions in a societal and global context;
- A commitment to quality, timeliness, and continuous improvement.

### PROGRAM EDUCATIONAL OBJECTIVES (PEOs)

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The AAS in the mechanical engineering technology program produces graduates who:

- have knowledge and skills to succeed in continued technical and formal education;
- can function effectively as technologists in the mechanical or related field of engineering technology;
- can function professionally and with ethical responsibility as an individual and on multidisciplinary teams;
- can demonstrate the ability to communicate effectively in oral, written, visual, and graphical modes in both interpersonal and group/team environments;
- can continuously improve, engage in lifelong learning, and adapt to rapidly changing technologies;
- can function effectively in an applications-oriented environment by using the techniques, skills, and modern engineering technology tools necessary to support applied technology practice.
- The BS in mechanical engineering technology program will produce graduates who:
  - have knowledge and skills to succeed in continued technical and formal education;
  - can function effectively as technologists in the mechanical or related field of engineering technology;
  - can function professionally and with ethical responsibility as an individual and on multidisciplinary teams;
  - can demonstrate the ability to communicate effectively in oral, written, visual, and graphical modes in both interpersonal and group/team environments;
  - can continuously improve, engage in lifelong learning, and adapt to rapidly changing technologies;
  - can function effectively in an applications-oriented environment by using the techniques, skills, and modern engineering technology tools necessary to support applied technology practice.
  - can function effectively in open-ended activities involving applications, design, analysis, and implementation;
  - can function effectively in leadership or supervisory roles.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State mechanical engineering technology AAS graduates may enter directly into either the mechanical engineering technology BS or technology management BBA degree program.

### TRANSFER OPPORTUNITIES

A cooperative/transfer program involving one year of appropriate study in either mechanical engineering technology or engineering science at selected regional community colleges, together with a second year of study at Alfred State, will result in the awarding of the AAS degree to qualified graduates.

Graduates from the associate-level mechanical engineering technology program are eligible to continue their education by enrolling in a baccalaureate degree program in mechanical or related engineering technology at Alfred State or elsewhere. Our mechanical engineering technology AAS two-year degree program is the same as the first two years of the mechanical engineering technology BS four-year degree program.

### INTERNSHIP OPPORTUNITIES

Internships are possible with many industries through Career Development located in the Student Leadership Center and may be eligible for technical credit.

### OCCUPATIONAL OPPORTUNITIES

- Automotive Industry
- Aerospace Industry
- Petroleum Industry
- HVAC&R Industry
- Utility Companies
- Engineering Aide
- Development/Design
- Sales and Applications
- Test Technicians
- Field Service
- Manufacturing
- Process Equipment Industry
- Installation Supervision

### EMPLOYMENT STATISTICS

Employment and transfer rate:  
Mechanical Engineering Technology (AAS degree):  
100 percent transferred to continue their education.  
Mechanical Engineering Technology (BS degree):  
100 percent are employed in their field.

## PROGRAMS AT ALFRED STATE

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, Algebra 2/  
Trigonometry  
Recommended: Physics

### Mechanical Engineering Technology - AAS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
MECH	1003	Intro. to MET/Lab	3
MECH	1603	Graphics/CAD	3
MECH	1203	Materials Science	3
COMP	1503	Freshman Composition	3
MATH	1033	College Algebra or Higher*	3
HPED	xxx1	Physical Education Elective	1
			16

#### Second

MECH	1643	Manufacturing Processes	3
MECH	1641	Manufacturing Processes Lab	1
MECH	4523	Control System Fundamentals	3
LITR	2603	Intro. to Literature	3
MATH	2043	College Trigonometry or Higher*	3
PHYS	1024	General Physics I	4
			17

#### Third

MECH	3113	Statics	3
MECH	3124	HVAC Systems	4
MECH	3223	Mechanical Design Principles	3
MATH	1063	Technical Calculus I	3
PHYS	2023	General Physics II	3
SOCI	1193	Marriage and Family* OR	
PLSC	1043	American Government	3
			19

#### Fourth

MECH	4024	Dynamics	4
MECH	4224	Mechanical Systems Design	4
MECH	4003	Solid Modeling	3
MECH	3643	Manufacturing Management	3
MATH	2074	Technical Calculus II	4
			18

\*If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

### GRADUATION REQUIREMENTS

- 70 maximum credits
- 20 credits of liberal arts and sciences
- **2.0 grade point average in major courses** (in bold text above)
- 2.0 cumulative grade point average
- Approval of department faculty
- 5 of 10 General Education areas

\* Any student who does not enroll in SOCI 1193 or PLSC 1043 must enroll in two appropriate General Education courses.

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS (BS)

Required: Algebra, Geometry, Algebra 2/  
Trigonometry, SAT and/or ACT scores with a recommended combined SAT score of 1,000 (critical reading and math) or a composite ACT score of 21.

Recommended: Physics

### Mechanical Engineering Technology - BS Degree

#### TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

Fifth			
MECH	7114	Applied Thermodynamics	4
MECH	5334	Mechanics of Materials	4
COMP	5703	Technical Writing II	3
MATH	6114	Differential Equations	4
CHEM	5013	Applied Chem. Principles	3
			18

#### Sixth

MECH	6334	Fluid Mechanics	4
MECH	7334	Heat Transfer	4
MECH	6204	Mechanical Power Systems	4
SPCH	1083	Effective Speaking	3
MATH	7123	Statistics for Engineering Tech.	3
			18

#### Seventh

EMET	5004	Instrumentation	4
BSET	7001	Senior Seminar/Project Design	1
MECH	7223	Energy Systems	3
MECH	7503	Vibrations	3
MATH	7113	Economic Analysis for Engr. Tech.	3
	xxx3	Liberal Arts/Science Elective	3
			17

#### Eighth

BSET	8003	Senior Technical Project	3
MECH	7153	Fluid Power	3
OR			
BSET	8006	Senior Internship	6
	xxx3	Liberal Arts/Science Elective	3
	xxx3	Liberal Arts/Science Elective	3
	xxx3	Gen. Ed. Elective	3
			15

#### Social Science Electives:

SOCI	1163	General Sociology
SOCI	1193	Marriage & Family Across World Civ.
PSYC	1013	General Psychology

#### Typical General Education Electives:

HIST	1113	History of Western Civilization
HIST	1143	Survey of American History I
HIST	2153	Survey of American History II
PLSC	1043	American Government
PLSC	1053	International Relations
FNAT	1013	Art Appreciation
FNAT	1023	Introduction to Theatre
FNAT	1313	Art History
FNAT	2413	Music History



### **BACHELOR OF SCIENCE DEGREE GRADUATION REQUIREMENTS**

- Completion of above courses
- 138 minimum credit hours
- 45 upper division credit hours
- 60 credit hours of liberal arts and sciences
- **2.0 grade point average in major courses** (in bold text on previous page)
- 2.0 cumulative grade point average
- Approval of department faculty
- 7 of 10 General Education areas

Courses which repeat or significantly overlap courses taken in the student's associate degree program cannot be taken for upper level credit. If the associate degree covered the subject matter in one of the required baccalaureate courses, a different course must be substituted and approved by the faculty adviser.

### **CERTIFICATION OR LICENSURE**

The Bachelor of Science in mechanical engineering technology is recognized as a "professional degree" that qualifies for experience/education credit toward Professional Engineering (PE) licensure. Graduates from Alfred State's program are allowed six years of the required 12 years of education/experience credit and are eligible to take the Fundamentals of Engineering (FE), formerly called Engineer-in-Training (EIT), examination upon graduation.

## PROGRAMS AT ALFRED STATE

### MOTORSPORTS TECHNOLOGY

#### AOS Degree - Code #1619

This specialization includes 1,800 hours of practical experience and classroom training applicable to the motorsport field. Program includes brake systems, alignment procedures, electronic controls, engine overhaul, and transmission overhaul. A major emphasis in the program is to teach the students fabrication and set-up on various types of race vehicles.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Demonstrate a focused, coherent, organized written report.
- Perform mathematic calculations required for entry-level automotive employment.
- Demonstrate an ability to apply written instructions and specifications relevant to their work environment.
- Demonstrate the ability to describe operation, diagnose and repair race automotive drive train systems.
- Demonstrate the ability to describe operation, diagnose and repair race engines.
- Demonstrate the ability to describe operation, diagnose and repair race automotive steering, brakes and suspension systems.
- Demonstrate the ability to fabricate materials required to build and maintain race vehicle chassis, bodies, and components.

#### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State motorsports technology graduates may enter directly into the technology management BBA degree program.

#### OCCUPATIONAL OPPORTUNITIES

- Chassis Specialist
- High Performance Motorsport Technician
- Crew Foreman
- Pit Crew Member
- Engine Builder
- Transmission Builder

#### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 82 percent are employed; 18 percent transferred to continue their education.

#### RELATED PROGRAMS

Autobody Repair  
Automotive Service Technician  
Mechanical Engineering Technology  
Welding Technology

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Recommended: Algebra

#### TECHNICAL STANDARDS

Applicants in the motorsports technology program must meet the following physical requirements:

- Must be able to perform safely in the shop.
- Must be able to lift 50 pounds to eye level.
- Must be able to communicate orally with a person six-10 feet away.
- Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
- Must have a valid motor vehicle license and be able to drive a standard transmission vehicle.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to understand information found in service repair manuals and use diagnostic flow charts.
- Must meet qualifications for a NYS driver's license.

#### CERTIFICATION OR LICENSURE

Students may take Automotive Service Excellence (ASE) certification exams.

#### Motorsports Technology - AOS Degree

##### TYPICAL FOUR-SEMESTER PROGRAM

First			
AUTO	1109	Brakes, Steering, and Suspension Systems	9
AUTO	1124	Automotive Welding	4
AUTO	1135	Automotive Basic Electronics & Component Overhaul	5
			18

Second			
AUTO	3409	Engine Service	9
AUTO	4449	Drive Train Service	9
			18

Third			
AUTO	3506	Intro. to Motorsports	6
AUTO	3504	M/S Fabrication I	4
AUTO	3514	Racing Suspension	4
AUTO	3524	High Performance Tune-up/Electronic	4
			18

Fourth			
AUTO	3535	High Performance Engine Building	5
AUTO	3544	M/S Aerodynamics	4
AUTO	3534	High Performance Steering, Brake & Chassis	4
AUTO	3545	M/S Fabrication II	5
			18

#### GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average.

## NURSING- AAS

### AAS Degree - Code #0622

The nursing program prepares individuals to become registered professional nurses. Courses are sequential and progress from simple to more complex situations with specialized content in obstetrics, psychiatric, and pediatric nursing integrated throughout. Learning is enhanced through the use of skill practice for a "hands-on" approach to gain expertise. A state of the art clinical lab with high fidelity simulator complements experience in regional facilities.

Clinical experience, an essential part of each nursing course, further enables students to gain technical competence to apply theoretical knowledge with practice. During the first year, there is one seven-hour clinical lab a week; during the second year, there are two seven-hour labs weekly. Transportation to selected clinical sites is provided.

The program is accredited by the National League for Nursing Accrediting Commission [3343 Peachtree Road, NE, Suite 500, Atlanta, GA 30326; phone (404) 975-5000] and registered by NY State Education Department.

A computer with Internet access and Microsoft Word is required for the nursing program. In addition, an I-Pod Touch without a phone or camera (or with phone and camera disabled) is required.

The nursing program is designed to be completed in two academic years, but may be revised to meet individual needs. Licensed practical nurses or transfer students from other nursing programs may be eligible for advanced placement.

Students must earn a "C" in Nursing I & II and Anatomy & Physiology I & II and a "C+" in Nursing III & IV to progress in the nursing program. Competency in medication clinical computation is required and is tested as part of the Nursing II and III courses.

Further, specific policies related to progression in and readmission to the nursing program are publicized to enrolled nursing students in the Nursing Student Handbook. The Nursing Student Handbook is distributed to nursing students each year as part of the syllabus in the four major nursing courses.

The determination of a student's physical ability to complete the nursing program is based on an

individualized assessment that relies on current medical evidence or on the best available objective evidence. If a student's physical ability compromises or threatens the health or safety of others, he/she is not "qualified" and therefore may be denied enrollment or continuation in the program.

In addition to meeting the college health requirements, nursing students are required to provide documentation of an annual PPD and a self-report health assessment. Hepatitis B vaccine and other requirements may be specified by affiliating agencies. A policy regarding chemical impairment is publicized to enrolled nursing students.

Any student wishing more information should contact the nursing program director.

### PROGRAM STUDENT LEARNING OUTCOMES

1. Apply the nursing process within a holistic framework to assist diverse clients of all ages with major health concerns.
  - Assess client care needs and formulate a plan based on assessments.
  - Administer nursing care.
  - Record and/or report pertinent information regarding observations, care given, client reactions.
  - Evaluate care given and revise plan accordingly.
  - Use current evidence, critical thinking and judgment in the application of the nursing process.
2. Implement psychomotor nursing care measures in a safe, effective, and efficient manner.
3. Establish and maintain effective communication with clients and members of the interdisciplinary health care team.
4. Provide health education in a variety of settings using teaching-learning principles.
5. Promote a quality, caring environment that ensures clients' safety, comfort, dignity, and self-esteem consistent with his/her developmental stage.
6. Manage care for a group of clients in a time- and cost-effective manner.
7. Demonstrate effective interpersonal relationships and work collaboratively.
8. Evaluate personal strengths and limitations; seek appropriate assistance.
9. Demonstrate accountability based on legal and ethical implications for personal behavior, professional practice, and aspects of care delegated to others.
10. Demonstrate responsibility for inquiry, self-development and continued learning.

## PROGRAMS AT ALFRED STATE

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11. Communicate professionally in writing.
12. Use technology and information management skills to retrieve, communicate and submit information.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State nursing graduates may enter directly into either the nursing BS or technology management BBA degree programs.

### FACILITIES

Facilities used for clinical experiences include St. James Mercy Health, Hornell; Noyes Memorial Hospital, Dansville; Jones Memorial Hospital, Wellsville; Olean General Hospital, Olean; Cole Memorial Hospital, Coudersport, PA; Cuba Memorial Hospital, Cuba; Highland Hospital, Rochester; Livingston County Center for Nursing and Rehabilitation, Mt. Morris, as well as other area facilities. Some facilities require criminal background checks prior to clinical attendance.

### OCCUPATIONAL OPPORTUNITIES

- Hospitals
- Clinics
- Long-term Care Facilities
- Industry
- Ambulatory Settings
- Schools
- Home Health Care
- Health Insurance Providers

### EMPLOYMENT STATISTICS

Employment and transfer rate of 98 percent – 78 percent are employed; 20 percent transferred to continue their education.

### RELATED PROGRAMS

Biological Science  
Health Information Technology  
Human Services  
Liberal Arts & Sciences: Humanities

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: It is essential that students are able to fully participate in clinical, caring for clients as assigned. Established entrance requirements for nursing students include being able to:

- ambulate (walk) without assistive devices
- lift at least 30 pounds
- function in a safe manner, not placing clients in jeopardy
- maintain confidentiality in regard to professional practice
- perform effectively under stress, adjusting to changing situations

- communicate effectively, orally and in writing

Required: Algebra, Biology, Chemistry at high school level; if not taken in high school, then college course with “C” or better is required. Biology: BIOL 2303 Human Biology or BIOL 1104 General Biology I. Chemistry: CHEM 1013 Introductory Chemistry I. Algebra: MATH 1004 Mathematical Concepts. or Math 1014 Algebra Concepts

Recommended: Combined SAT score of 900 (critical reading and math)

### CERTIFICATION OR LICENSURE

Graduates are eligible to apply for licensure as a Registered Professional Nurse (RN-NCLEX) in any state.

Completion of the nursing program does not assure registration as a registered professional nurse. Graduates of this nursing program meet the education requirements for admittance to the RN licensure exam; however, there is a requirement that the applicant be of “good moral character” and a fee must be paid for the test and license. On the application for New York State licensure, the applicant is required to truthfully answer the following questions:

- Have you ever been found guilty after trial, or pleaded guilty, no contest, or nolo contendere to a crime (felony or misdemeanor) in any court?
- Are criminal charges pending against you in any court?
- Has any licensing or disciplinary authority refused to issue you a license or ever revoked, annulled, canceled, accepted surrender of, suspended, placed on probation, refused to renew a professional license or certificate held by you now or previously, or ever fined, censured, reprimanded, or otherwise disciplined you?
- Are charges pending against you in any jurisdiction for any sort of professional misconduct?
- Has any hospital or licensed facility restricted or terminated your professional training, employment of privileges or have you ever voluntarily or involuntarily resigned or withdrawn from such association to avoid imposition of such measures?
- If the answer to any of the questions is yes, the applicant must offer full explanation and establish his/her good moral character with the State Education Department, prior to earning a license.

**Registered Nurse Program Nursing - AAS Degree**

TYPICAL TWO-YEAR PROGRAM

First			
COMP	1503	Freshman Composition	3
BIOL	1404	Anatomy & Phys. I **	4
NURS	1109	Nursing I	9
			16

Second			
PSYC	1013	General Psychology	3
BIOL	2504	Anatomy & Phys. II ***	4
NURS	2209	Nursing II	9
			16

Third			
PSYC	1023	Human Development	3
BIOL	4254	General Microbiology	4
NURS	3311	Nursing III	11
			18

Fourth			
SOCI	1163	Gen. Sociology	3
LITR	xxx3	Literature	3
NURS	4411	Nursing IV	11
			17

\*Minimum of a "C" grade is required for nursing I and II; minimum of a "C+" grade is required for nursing III and IV.  
 \*\*BIOL 1404 with a "C" is a prerequisite for NURS 2209  
 \*\*\*BIOL 2504 with a "C" is a prerequisite for NURS 3311  
 \*\*\*\*BIOL 4254 is a prerequisite for NURS 4411

Also required: One unit of physical education.

**GRADUATION REQUIREMENTS**

- 40 credits of nursing (nursing I, II, III, IV)
- 12 credits of natural science (anatomy & physiology I and II, microbiology)
- 9 credits of social science (general psychology, general sociology, human development)
- 6 credits of English/humanities (freshman composition, literature)
- 1 credit of physical education

**RN TRANSFER PROGRAM**

Approximately twenty percent of Alfred State's graduates transfer directly into a baccalaureate nursing program.

Alfred State students may transfer to most New York State baccalaureate programs with junior status, consistent with NYS transfer agreement.

## PROGRAMS AT ALFRED STATE

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### NURSING - BS

#### BS Degree - Code #0291

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Alfred State now offers a Bachelor of Science degree in nursing (BS-N), an upper-division completion program which enhances students' knowledge and skills foundation to function more autonomously and interdependently in diverse, complex, and dynamic health care environments. Moreover, the program will enhance students' potential to expand their responsibilities in practice to be designers, coordinators, and managers of care. Lastly, the program will serve as a solid academic foundation for advanced study in nursing at the graduate level. Alfred State's BS-N program is fully accredited by the Commission on Collegiate Nursing Education (CCNE), One Dupont Circle, NW Suite 530, Washington, DC 20036.

The graduate will be prepared to assume a leadership role in the health care delivery system using gained experience, research, and technology for evidence-based decision making. The baccalaureate graduate will be able to deliver, design, and coordinate care for a variety of individuals from diverse backgrounds to improve client outcomes.

Applicants must have completed an accredited or state-approved associate degree or diploma program in nursing and be a qualified registered professional nurse (RN). Those who have not yet passed the NCLEX-RN must obtain their RN license to progress into the second semester BS-N courses.

The core foundational nursing courses are arranged to increase the student's knowledge base and skill level for the expanded role as a baccalaureate-prepared practitioner. The program is designed to prepare a generalist, thus, contains no specialization concentrations. A professional capstone course (NURS 8013) is required as a culminating educational experience of the BS-N program.

Two required BS-N courses have clinical components to further advance the student's knowledge base and skills level. Health assessment and promotion across the lifespan (NURS 6413) has a one-credit clinical laboratory component that may be virtual, self-directed, or campus-based. Population focused care in the community (NURS 7004) allows the student an opportunity to address clients with special needs or vulnerable populations in the community

through a structured, precepted clinical experience. Nursing Leadership (NURS 6003) and Capstone (NURS 8013) both include precepted experience.

Meeting the needs of registered nurses seeking a bachelor's degree, the BS-N program is offered in both an online and hybrid format. This provides flexibility and learning style choices for the adult student and working professional.

A computer with Internet access and Microsoft Word is required for the nursing program.

#### PROGRAM STUDENT LEARNING OUTCOMES

1. Synthesize theory and concepts from nursing, the liberal education domain and other professions into nursing practice.
2. Apply leadership principles to design, manage, and coordinate nursing care within the healthcare environment.
3. Apply principles of critical reflection, inquiry, and evidence-based practice to nursing.
4. Apply knowledge and skills of information management and technology in nursing practice.
5. Assess protective and predictive indicators that may influence the well-being of individuals, families, and groups in healthcare settings with attention to rural issues.
6. Create a plan to foster integrity, autonomy, tolerance, dignity, respect, altruism, and social justice.
7. Demonstrate positive inter-and-intra professional communication and collaboration skills.
8. Create a philosophy of nursing.
9. Model values of the profession.
10. Appraise issues related to health promotion, restoration, maintenance, and end of life.

#### PROFESSIONAL OPPORTUNITIES

Leadership, management, research, education, and practice opportunities in a variety of healthcare settings and institutions throughout New York State and the U.S.

#### ADMISSIONS REQUIREMENTS

Admission to the BS-Nursing program requires graduation from an approved associate degree nursing or certified diploma program and plans to secure licensure as a Registered Professional Nurse by completion of the first semester in the program. The minimum GPA requirement for admission is 2.00. The applicant's associate degree course work will include at least 30 credits of nursing, eight credits of anatomy and

physiology, a lab course in microbiology, and course work in communication, literature, psychology, and sociology. The applicant's diploma course work will include at least 30 credits of nursing, eight credits of anatomy and physiology, a lab course in microbiology, and will follow the voluntary transfer NY State model program. Students may take nine nursing upper level credits prior to matriculating in the BS program.

**ENTRANCE REQUIREMENTS**

Students must have an active, unencumbered state license to progress into the second semester of BS-N courses.

**ACCREDITATION/CERTIFICATION**

Alfred State is accredited by Middle States Commission on Higher Education [3624 Market Street, 2nd Floor West, Philadelphia, PA 19104; (267) 284-5000]. The BS-N program is registered by NYS Education Department. The Alfred State Nursing department is working with the Commission on Collegiate Nursing Education (CCNE) to secure accreditation for the BS-N program.

**NURSING – 1+2+1 Program**

Beginning fall 2013 Alfred State will be enrolling a small number of students in a new Dual Degree Program in Nursing (DDPN) as part of the New York State Nursing Education Collaborative (NYSNEC) grant from the Robert Wood Johnson Foundation. The same course work will be included in this program as in the Alfred State 2+2 program, with the end results being an AAS in nursing and qualification to take the RN NCLEX exam, followed by the BS in nursing. The difference is in the course plan.

In the DDPN, also known as the 1+2+1 program, students will begin with a year of background/foundational course work. They will then complete the basic nursing program in the middle two years, earning the AAS after year three, and complete the BS in one additional year. In the traditional 2+2 program the student will take nursing classes beginning in the first semester, complete the AAS in two years and complete the BS in an additional two years.

**Nursing - BS**

TYPICAL TWO-YEAR PROGRAM

First			
NURS	5003	Ethical Issues in Health Care	3
NURS	5023	Contemporary Nursing	3
MATH	1123	Statistics	3
SPCH	1083	Effective Speaking	3
XXXX	xxx3	Liberal Arts Elective - Upper	3
			15

Second			
NURS	6003	Nursing Leadership & Management	3
NURS	6413	Health Assessment & Promotion Across the Lifespan	3
BIOL	6403	Advanced Pathophysiology	3
XXXX	xxx3	General Education Elective (FA, FL, WC or AH)	3
HLTH	1313	Nutrition	3
			15

Third			
NURS	7003	Nursing Research	3
NURS	7004	Population Focused Care in the Community	4
XXXX	xxx3	Liberal Arts Elective	3
XXXX	xxx3	Liberal Arts Elective - Upper	3
XXXX	xxx3	Liberal Arts Elective - Upper	3
			16

Fourth			
NURS	xxx3	Nursing Elective	3
NURS	8002	Nursing Informatics	2
NURS	8013	Professional Capstone	3
XXXX	xxx3	Open Elective	3
ANTH	5113	Cross Cultural Encounters	3
XXXX	xxx3	Liberal Arts Elective - Upper	3
			17

\*Minimum of a "C" grade is required for upper-division nursing courses. A 2.0 GPA must be maintained throughout the program.

**GRADUATION REQUIREMENTS**

- 27 credits of upper-level nursing
- 3 credits of open electives
- 21 credits of liberal arts and sciences
- 12 credits of upper level liberal arts electives
- 1 credit of physical education if not transferred

**ARTICULATION AGREEMENTS**

Articulation agreements are in progress between multiple regional community colleges and Alfred State for the BS-N program.

### PRE-ENVIRONMENTAL SCIENCE AND FORESTRY

#### AA Degree - Code #0645 (Indicate P-ESF on Special Campus Project line)

Dr. Kathleen Ebert, Program Coordinator  
Email address: ebertkc@alfredstate.edu

This program is designed for those students who ultimately desire a Bachelor of Science (BS) degree in environmental sciences and/or forestry from the SUNY (State University of New York) College of Environmental Science and Forestry (ESF) - an upper division/graduate center. Program options available within this program include environmental and forest biology, chemistry, forest resources management, dual option in forest ecosystems science and forest resources management, environmental studies, forest engineering, paper science and engineering, construction management and wood products engineering, landscape architecture, and the 1+1 forest technology program (NYS Ranger School) as well as 1+1 programs in Environmental & Natural Resources Conservation and Land Surveying Technology.

After the first two years of study at Alfred State, transfers to ESF may apply to a variety of programs at Syracuse. These include: the biological sciences (botany and forestry pathology, entomology, zoology, wildlife biology, pest management); chemistry (natural and synthetic polymers, biochemistry and natural products, environmental); forest engineering; paper science engineering; wood products engineering; and forestry (resource management, forest resource science, management science, environmental education and communications, urban forestry, world forestry, applied resource management). The program in landscape architecture leads to a baccalaureate degree after one additional year, a Bachelor of Landscape Architecture degree (BLA). A student taking the pre-ESF 1+1 ranger option completes required liberal arts and science courses at Alfred State and then spends the second year at the Wanakena Campus of ESF. Successful completion of this program leads to an AAS degree in forest technology.

Due to the diverse nature of the various options, illustration of a typical four-semester course outline is not possible. Persons planning to transfer should follow the program requirements in consultation with our pre-environmental science and forestry campus adviser in the selection of all courses including electives.

### PROGRAM STUDENT LEARNING OUTCOMES

1. **MATHEMATICS:** demonstrate competence in arithmetic, algebra, geometry, data analysis, and quantitative reasoning.
2. **NATURAL SCIENCES:** demonstrate understanding of the methods scientists use to explore natural phenomena, including observation, hypothesis development, measurement and data collection, experimentation, evaluation of evidence, and employment of mathematical analysis.
3. **COMMUNICATION & INFORMATION:** Employ proficient written and verbal communication skills, including the appropriate uses of technology
4. **GENERAL EDUCATION:** Demonstrate foundational knowledge required to be an informed citizen in a global community
5. **REASONING:** identify, analyze, and evaluate arguments as they occur in their own and others' work and develop well-reasoned argument
6. **INFORMATION MANAGEMENT:** perform the basic operations of personal computer use, understand and use basic research techniques and locate, evaluate, and synthesize information from a variety of sources

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State pre-environmental science and forestry graduates may enter directly into the technology management BBA degree program.

### TRANSFER OPPORTUNITIES

Students in this program spend two years at Alfred State and then generally transfer to the SUNY College of Environmental Science and Forestry (ESF) at Syracuse. Those students who complete, with a "C" or better, the lower-division sequences prescribed by ESF, gain admission to ESF<sup>1</sup> with full junior status. <sup>1</sup>An articulation agreement is available with SUNY ESF at Syracuse.

### EMPLOYMENT STATISTICS

Employment and transfer rate: no data available.

### RELATED PROGRAMS

Agricultural Business  
Agricultural Technology  
Biological Science  
Construction Management  
Environmental Technology  
Individual Studies  
Liberal Arts & Sciences: Humanities  
Liberal Arts & Sciences: Math & Science  
Liberal Arts & Sciences: Social Science



**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra  
2/Trigonometry; Biology; Chemistry or Physics

Recommended:  
Both Chemistry and Physics

## PROGRAMS AT ALFRED STATE

### SPORTS MANAGEMENT

#### AS Degree - Code #1396

Dr. Cliff McPeak, Program Coordinator  
Email address: mcpeakc@alfredstate.edu

The growing emphasis on athletics, coupled with the increasing amount of leisure time the public now enjoys, has made the world of sports one of the fastest growing segments of American business. Formation of new sports leagues, expansion of franchises to new markets, and legislative enactments opening the door for female athletes have all aided the evolution of new sports markets since the late 1980s. Increased television exposure for non-traditional sports such as soccer, volleyball, and weight training has dramatically increased career opportunities in the sports world.

The sports industry requires a great variety of people with an equal variety of talents. It needs athletes, sales people, publicists, trainers, business managers, scouts, statisticians, coaches, store managers, and health and fitness personnel. The goal of the sports management program is to provide students with a concentration of courses aimed at preparing them for a career in the management and administration of the sport and fitness industry.

A laptop computer is recommended but not required for students entering the sports management program. The college will provide a list of appropriate laptops to all students who have been accepted to attend Alfred State.

#### PROGRAM STUDENT LEARNING OUTCOMES

- Achieve an understanding of the depth of the field of sport management.
- Achieve an understanding of the basic principles of facility management.
- Achieve an understanding of the significant issues that are confronting contemporary sport management.
- Achieve an understanding of the factors that make sport marketing unique.
- Achieve an understanding of the issues involved in risk management.
- Info Management (computer & research skills appropriate to degree level and type)
- Written & Oral Communication (appropriate to degree level and type)
- Critical Thinking (problem solving, reasoning skills appropriate to degree level and type)
- Apply mathematical reasoning to obtain accurate results in solving problems.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State sports management graduates may enter directly into either the business administration BBA, sport management BBA, or technology management BBA degree program.

### TRANSFER OPPORTUNITIES

Students may transfer directly to our four-year sport management program which results in a BBA degree, or to another college.

### OCCUPATIONAL OPPORTUNITIES

- Account Sales
- Recreation Service Industry
- College Athletic Departments
- Sport Marketing Firms
- Sport Event Promotion Firms
- Professional Sport Organizations
- Ticket Sales
- Olympic Organizations
- City Sport Corporations

### EMPLOYMENT STATISTICS

Employment and transfer rate of 100 percent – 67 percent are employed; 33 percent transferred to continue their education.

### RELATED PROGRAMS

Business Administration  
Business Management  
Sport Management

### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry  
Recommended: Algebra 2/Trigonometry

### Sports Management - AS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
ACCT	1124	Financial Accounting	4
CISY	1103	Information Technology Management	3
COMP	1503	Freshman Composition	3
MATH		Math Elective	3
SPMG	1123	Intro. to Sports Management**	3
HPED		Physical Education Elective	1
			17

Second			
ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
MKTG	2073	Principles of Marketing	3
	xxx3	Humanities Gen. Ed. Elective	3
	xxx3	General Education Elective	3
	xxx3	General Education Elective	3
			19

**Third**

BUAD	3153	Fundamentals of Management	3
ECON	1013	Macroeconomics	3
SPMG	2123	History of Sport**	3
SOCI	1163	General Sociology <b>OR</b>	
PSYC	1013	General Psychology	3
		Natural Science Elective	3
			15

**Fourth**

PLSC	1053	International Relations	3
BUAD	3043	Business Law I	3
ECON	2023	Microeconomics	3
SPMG	4123	Sport Facility Management*	3
	xxx3	Business Elective	3
			15

\* offered in spring semester only

\*\* offered in fall semester only

**GRADUATION REQUIREMENTS**

66 semester hours with a 2.0 cumulative index.

### SPORT MANAGEMENT

#### BBA Degree - Code #0182

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Dr. Cliff McPeak, Program Coordinator

Email address: mcpeakc@alfredstate.edu

The sports industry requires a great variety of people with expertise in business. To meet this growing need, the Business department at Alfred State is offering a sport management program resulting in a Bachelor of Business administration (BBA) degree. A student will enter as a freshman and graduate in four years with a BBA degree, focusing on sport management. This course of study is designed to produce graduates ready to contribute in the areas of administration, marketing, sales, fund development, finance, event promotion and management, communication, and facility management, innovation and development.

The sport management course of study is designed to produce graduates ready to contribute in the areas of administration, marketing, sales, fund development, finance, event management and promotion, communication, and facility management, innovation, and development. Additionally, the sport management graduate will complete a specialization in marketing and event promotion. Each student will participate in field experiences during the second year and a full-semester internship in the senior year. An emphasis is placed on writing and speaking proficiently. The graduate will study the core body of knowledge in sport management, a sport management specialization, and the general education program designed by SUNY. Each class will include a review of contemporary technology available to the professional in sport management.

A laptop computer is required for students entering this degree program. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

#### PROGRAM STUDENT LEARNING OUTCOMES

- Demonstrate technical competence in domestic and global sport businesses through the study of major disciplines within the field of sport management and business.
- Define, research, analyze, and create solutions for sport management and business problems and issues by using critical thinking and decision making skills for evaluating data, information and materials.

- Apply software, technology, and information systems in contemporary sport management operations and business.
- Develop the critical thinking skills of creating and managing innovation and new development in sport management and business by working effectively in teams.
- Analyze complex sport management and business issues and communicate findings through a coherent written and oral presentation.
- Analyze the strategic management process in relation to the current environment in sport management and business, and identify specific trends and strategies.
- Demonstrate knowledge of ethics, government regulations, and the legal system and how each applies to sport management and business.
- Apply mathematical reasoning to obtain accurate results in solving problems.

#### OCCUPATIONAL OPPORTUNITIES

- Account Sales
- Recreation Service Industry
- College Athletic Departments
- Sport Marketing Firms
- Sport Event Promotion Firms
- Professional Sport Organizations
- Ticket Sales
- Olympic Organizations
- City Sport Corporations

#### RELATED PROGRAMS

- Business Administration (BBA)
- Business Administration (Transfer)
- Business Management (Career)
- Entrepreneurship
- Financial Planning (BBA)
- Marketing

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS

Required: Algebra, Geometry, SAT and/or ACT scores with a recommended combined SAT score of 1,000 (critical reading and math) or a composite ACT score of 21

Recommended: Algebra2/Trigonometry

**Sport Management - BBA Degree**

## TYPICAL EIGHT-SEMESTER PROGRAM

**First**

ACCT	1124	Financial Accounting	4
CISY	xxx3	Intro to Computers/Info. Mgt.	3
COMP	1503	Freshman Composition	3
SPMG	1123	Intro. to Sport Management *	3
MATH	xxx3	Math Elective	3
			18

**Second**

BUAD	2033	Business Communication	3
ACCT	2224	Managerial Accounting	4
SPMG	2003	Sport in Society **	3
MKTG	2073	Principles of Marketing	3
	xxx3	Literature Elective	3
HPED	xxx1	Physical Education Elective	1
			17

**Third**

BUAD	3153	Fundamentals of Management	3
SPCH	1083	Effective Speaking	3
SPMG	3013	Sport Communication *	3
BUAD	3043	Business Law I	3
SPMG	3001	Field Experience I	1
	xxx3	General Education Elective	3
			16

**Fourth**

ECON	xxx3	Macro or Microeconomics	3
MKTG	1063	Principles of Sales	3
SPMG	4003	Sport Law **	3
SPMG	4123	Sport Facility Mgt. Plan & Features**	3
SPMG	4001	Field Experience II	1
	xxx3	General Education Elective	3
			16

**Fifth**

COMP	5703	Technical Writing II	3
SPMG	6003	Sport Marketing *	3
SPMG	5003	Sport Business and Finance *	3
TMGT	5001	Professional Business Seminar *	1
	xxx3	General Education Elective	3
	xxx3	Upper-level Open Elective	3
			16

**Sixth**

SPMG	6033	Sponsorship **	3
SPMG	6013	Licensing and Endorsements **	3
SPMG	6023	Event Promotion and Sales **	3
	xxx3	General Education Elective	3
	xxx3	Upper-level Open Elective	3
			15

**Seventh**

SPMG	7001	Pre-Internship Seminar *	1
SPMG	7023	Strategic Mgt. in Sport Organizations *	3
	xxx3	Open Elective	3
	xxx3	Upper-level Open Elective	3
	xxx3	Upper-level Open Elective	3
			13

**Eighth**

SPMG	8112	Internship	12
			12

\* Offered only in fall semester

\*\* Offered only in spring semester

**GRADUATION REQUIREMENTS**

- 121 credit hours, including one credit hour of physical education
- 30 credit hours of the 45 upper-level credit hours for this degree must be taken at Alfred State
- Cumulative overall index of at least 2.0

### SURVEYING ENGINEERING TECHNOLOGY

**AAS Degree - Code #1039**

**BS Degree - Code #1046**

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Individuals benefit from having a land surveyor determine the boundaries of their property. Governmental agencies, private industries, and individuals all benefit from the surveying and mapping of our natural resources. Surveyors help in the planning of transportation systems, recreational facilities, new cities, and land subdivisions.

The modern surveyor has learned to increase his/her productivity and measurement accuracy by using modern surveying equipment such as the electronic total stations to measure angles and distances. Computational tasks and mapping are enhanced by the use of the computer.

Particularly exciting about the future of the surveying profession are the emerging technologies of Global Positioning Systems (GPS), Geographic Information Systems (GIS) and Land Information Systems (LIS).

The course of study at Alfred State provides a thorough understanding of the basic sciences of mathematics and physics as well as such applied subjects as graphics and computer aided drafting and design. The knowledge obtained from these basic courses is applied to a well-rounded study of modern surveying theory and practice.

The student constantly applies theoretical knowledge in meaningful and comprehensive laboratory sessions. Therefore, upon graduation the student is educated in a two-fold sense, both theoretically and practically.

Both surveying engineering technology programs are accredited by the Engineering Technology Accreditation Commission, Accreditation Board for Engineering Technology, Inc. (ETAC/ABET), 111 Market Place, Suite 1050, Baltimore, MD 21202; (410) 347-7700, <http://www.abet.org>.

A laptop computer is required for students entering the surveying engineering technology programs. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

#### **PROGRAM STUDENT LEARNING OUTCOMES (AAS Degree)**

- An ability to apply the knowledge, techniques, skills, and modern tools of the discipline to

narrowly defined engineering technology activities;

- An ability to apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles but extensive practical knowledge;
- An ability to conduct standard tests and measurements, and to conduct, analyze, and interpret experiments;
- An ability to function effectively as a member of a technical team;
- An ability to identify, analyze, and solve narrowly defined engineering technology problems;
- An ability to apply written, oral, and graphical communication in both technical and nontechnical environments; and an ability to identify and use appropriate technical literature;
- An understanding of the need for and an ability to engage in self-directed continuing professional development;
- An understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity;
- A commitment to quality, timeliness, and continuous improvement.

#### **PROGRAM STUDENT LEARNING OUTCOMES (BS Degree)**

- An ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities;
- An ability to select and apply a knowledge of mathematics, science, engineering, and technology to engineering technology problems that require limited application of principles and applied procedures or methodologies;
- An ability to conduct standard tests and measurements; to conduct, analyze, and interpret experiments; and to apply experimental results to improve processes;
- An ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives;
- An ability to function effectively as a member or leader on a technical team;
- An ability to identify, analyze, and solve broadly-defined engineering technology problems;
- An ability to apply written, oral, and graphical communication in both technical and nontechnical environments; and an ability to identify and use appropriate technical literature;

- An understanding of the need for and an ability to engage in self-directed continuing professional development;
- An understanding of and a commitment to address professional and ethical responsibilities, including a respect for diversity;
- A knowledge of the impact of engineering technology solutions in a societal and global context;
- A commitment to quality, timeliness, and continuous improvement.

### PROGRAM EDUCATIONAL OBJECTIVES

Program educational objectives were established with the assistance of the Industrial Advisory Committee and are reviewed periodically. The surveying engineering technology program produces graduates who:

1. write, read, and orally present technical reports, letters, and projects that meet the standards of the profession;
2. have an understanding of and are able to implement basic field and office survey procedures;
3. are capable of performing elementary research;
4. are competent in surveying techniques;
5. recognize the need for, and an ability to engage in, continued formal education as well as life-long learning.

In addition to the AAS program educational objectives, the BS in the surveying engineering technology program (630) produces graduates who:

1. will be capable of sitting successfully for the Land Surveyor Examination;
2. have the skills to perform a land title survey in all its complexity;
3. will be capable of employing state-of-the-art surveying techniques in leading a survey crew to accomplishment of its goal.

### DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM

Alfred State surveying engineering technology AAS graduates may enter directly into either the surveying engineering technology BS or technology management BBA degree program.

### OCCUPATIONAL OPPORTUNITIES

- Land Surveyor (after successfully meeting state requirements)
- Surveying Engineering Technician
- Field Technician
- Drafter - Computer
- Project Surveyor
- Office Assistant
- Party Chief

- Instrument Person
- Mapping Technologist
- GPS Surveyor

### EMPLOYMENT STATISTICS

Employment and transfer rate:

Surveying Engineering Technology (AAS degree):  
100 percent employed in field.  
Surveying Engineering Technology (BS degree):  
100 percent – 89 percent are employed in field;  
11 percent transferred to continue their education.

### RELATED PROGRAMS

Building Trades: Building Construction  
Construction Engineering Technology  
Construction Management Engineering  
Technology

### CERTIFICATION OR LICENSURE

Both the AAS program and the BS program in surveying engineering technology have been accredited by ETAC/ABET as well as the NYS Education Department. These accreditations mean that the graduates from the AAS program will receive two years of credit toward the total statutory time requirement for licensure as a land surveyor in New York State.

Graduates of the BS program will receive four years of credit toward the total statutory time requirement for licensure as a land surveyor in New York State. The BS graduates are eligible to take the first part of the NCEES licensing exam for land surveying in their senior year, eighth semester, if within 20 semester credit hours of graduation.

Additionally, graduates of the BS program will receive six years of credit toward the statutory time for licensure as a Professional Engineer in New York State. The BS graduates are eligible to take the first part of the NCEES licensing exam for Professional Engineer in the fall following their graduation.

### ARTICULATION AGREEMENTS

Alfred State accepts students from other two-year institutions as juniors into the BS surveying engineering technology program with appropriate course work and grade point averages.

## PROGRAMS AT ALFRED STATE

### Surveying Engineering Technology - AAS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
COMP	1503	Freshman Composition	3
CIVL	1011	Civil AutoCAD	1
CIVL	1204	Surveying I	4
CIVL	1013	Portland Cement Concrete	3
CIVL	1182	Civil Tech. Graphics	2
MATH	1033	College Algebra or Higher*	3
			16

Second			
CIVL	2154	Quality Control of Construction Materials	4
CIVL	2204	Surveying II	4
PHYS	1024	General Physics I	4
MATH	2043	College Trigonometry or Higher*	3
LITR	2603	Introduction to Literature	3
			18

Third			
CIVL	3204	Legal Aspects & Practice of Land Surveying	4
CIVL	3214	Control Surveying	4
PHYS	2023	General Physics II	3
MATH	1063	Technical Calculus I	3
	xxx3	Gen. Education Elective	3
			17

Fourth			
CIVL	4204	Subdivision Theory & Application	4
CIVL	4214	Surveying Practicum	4
CIVL	4243	Surveying Computer Applications	3
CIVL	4273	Photogrammetry	3
	xxx3	Gen. Education Elective	3
			17

\*If not required, take LAS elective to complete degree requirements of 3 credits, otherwise take free elective.

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Math through technical calculus I must be completed. Freshman composition and introduction to literature must be taken.

Also required: One unit of physical education.

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS (AAS)

Required: Algebra, Geometry, Algebra 2/Trigonometry

Recommended: Physics

### Surveying Engineering Technology - BS Degree

#### TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

Fifth			
MATH	2074	Technical Calculus II	4
SPCH	1083	Effective Speaking	3
COMP	5703	Technical Writing II	3
CIVL	5104	Geological Engr. Tech.	4
CIVL	5114	Land Surveying <b>OR</b>	
CIVL	7114	Geographic Info. Systems	4
			18

Sixth			
MATH	5014	Technical Calculus III	4
BUAD	3043	Business Law	3
CHEM	5013	Applied Chem. Principles	3
CIVL	6104	Anal. & Adj. of Surv. Meas.	4
CIVL	6113	Environmental Tech. Concepts	3
			17

Seventh			
MATH	7113	Economic Analysis for Engr. Tech.	3
MATH	7123	Statistics for Engr. Tech.	3
CIVL	8104	Satellite & Geodetic Surv.	4
CIVL	5114	Land Surveying <b>OR</b>	
CIVL	7114	Geographic Info. Systems	4
CIVL	7001	Senior Seminar & Proj. Design	1
	xxx3	Gen. Education Elective	3
			18

Eighth			
BSET	8003	Senior Technical Project	3
PHYS	8013	Modern Physics	3
CIVL	7104	Land Develop & Design	4
	xxx3	Gen. Education Elective	3
CISY	1123	Introduction to Programming for IT	3
			16

Also required: One unit of physical education.

Must meet 7 of the 10 General Education areas.

#### ENTRANCE REQUIREMENTS/RECOMMENDATIONS (BS)

Required: Algebra, Geometry, Algebra 2/Trigonometry, SAT and/or ACT scores with a recommended combined SAT score of 1,000 (critical reading and math) or a composite ACT score of 21.

Recommended: Physics



**TECHNOLOGY MANAGEMENT****BBA Degree - Code #1318**

Dr. Karla Back, Program Coordinator  
 Email address: backkm@alfredstate.edu

The technology management degree is designed to allow a student who has earned an associate degree (AAS, AA, AS, or AOS) in a technical or professional area (or at least 60 credits toward such a degree) to complete a bachelor's degree through this upper-division program. Students seeking entrance into the program will enter at the junior level since they will have already successfully completed at least 60 credits toward an associate-level degree in a technical area. The junior and senior years will have an emphasis in the development of business and management skills with a focus on technology applications. The program includes a significant internship in the final semester of the senior year.

A major feature of the degree is the program design that allows students with a lower-level professional/technical degree to advance into management/administrative positions in their respective professional or technical areas. It is also designed to provide them with the skills necessary to run a small-to-medium size business in their area of study or to manage a department, a division, or even their own business.

Graduates of this program are eligible for employment in many industries which require both a technical and business background.

The purpose of the BBA in technology management is to provide graduates with the management, administrative, and technological course work necessary to succeed in management and supervisory positions within the business environment surrounding their specific technical or professional field of study.

In order to earn the bachelor's degree, students entering the program with an earned associate degree must complete all specified upper-level requirements for the bachelor's degree, fulfill all required prerequisites for upper-level courses, and earn a minimum of 60 credits beyond the associate degree. The student completing this program will take courses that will result in: a) fulfillment of seven SUNY General Education areas through 39 credit hours, b) 52 credit hours of business course work, 45 of which must be upper-level.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Apply an understanding of self, as well as an understanding of the dynamics of groups and team interaction, to compare and contrast the impact of various plans and strategies on measurable productivity, effectiveness and efficiency.
- Discuss and apply the methods used to plan, organize, lead, and control within an organizational setting.
- Analyze and use the appropriate skills and techniques needed for problem solving and decision making.
- Analyze and explain the application of laws and the legal system to the business environment.
- Communicate effectively; oral, written, and nonverbal, using current technology where appropriate.
- Illustrate basic accounting methods and apply them using current accounting software.
- Perform financial and statistical analysis.
- Identify and apply the broad functions of strategic marketing.
- Discuss the uses of, and be able to prepare a comprehensive business plan.
- Evaluate various technologies and plan how these could be used effectively.
- Complete a supervised experiential learning, field work experience.

**EMPLOYMENT STATISTICS**

Employment & Transfer Rate of 100 percent - 73 percent are employed; 27 percent transferred to continue their education.

**RELATED PROGRAMS**

Agricultural Business  
 Agricultural Technology  
 Automotive Service Technician  
 Business Management (Career)  
 Business Administration (Transfer)  
 Coding & Reimbursement Specialist  
 Computer Information Systems  
 Construction Management Engineering Technology  
 Health Information Technology  
 Interior Design  
 Marketing  
 Mechanical Engineering Technology  
 Pre-Environmental Science & Forestry  
 Veterinary Technology

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

- Required: Successful completion of an associate's degree (AAS, AA, AS, or AOS) with a minimum cumulative GPA of 2.0.
- Students must either possess an AAS, AA, AS, or AOS degree or have amassed at least 60 credit

## PROGRAMS AT ALFRED STATE

hours toward a degree, including courses that fulfill five different general education fields.

- Students entering the program should have a minimum cumulative GPA of 2.0.
- A laptop computer will be required of all technology management majors. See laptop specifications.
- Students entering this program from an AOS degree program are accepted in the program as ASOP students until completion of the five bridge courses (15 credits) in Liberal Arts and Sciences/General Education. The Business department chair will review all college credits earned and will recommend specific courses to complete this bridge. The chair can be contacted at stabafm@alfredstate.edu or (607) 587-3422.

### Technology Management - BBA Degree

#### TYPICAL FIVE- THROUGH EIGHT-SEMESTER PROGRAM

Fifth			
BUAD	5003	Management Communications	3
ACCT	5043	Accounting Perspectives	3
BUAD	5053	Software Applications in Business**	3
TMGT	7153	Principles of Management	3
ECON	1013	Macroeconomics	3
TMGT	5001	Business Seminar	1
	xxx3	General Ed or Free Elective	3
			19

Sixth			
BUAD	7023	Legal Environment of Business	3
BUAD	6403	Project Mgt. for Bus. Professionals	3
BUAD	6113	Strategic & Creative Problem Solving*	3
COMP	5703	Technical Writing II	3
MKTG	6003	Strategic Marketing*	3
	xxx3	General Ed or Business Elective	3
			18

Seventh			
BUAD	5043	Business Ethics	3
BUAD	5023	Human Resource Management	3
TMGT	7003	Managing Tech. and Innovation**	3
SPCH	1083	Effective Speaking (if needed) OR	
	xxx3	General Ed or Business Elective	3
	xxx3	General Ed or Business Elective	3
	xxx3	General Ed or Free Elective	3
			18

Eighth			
TMGT	8112	Tech. Management Internship***	12
		OR	
	xxx3	Upper Level Elective	3
	xxx3	Upper Level Elective	3
	xxx3	Upper Level Elective	3
	xxx3	Upper Level Elective	3

Also required: One unit of physical education.

\* Course offered spring semester only

\*\*Course offered fall semester only

\*\*\*Accommodations will be offered to students who are unable to fulfill internship requirements.

### GRADUATION REQUIREMENTS

- Total minimum credit hours for graduation is 122, including one credit hour of physical education.
- A cumulative overall index of at least 2.0 is required in order to graduate.
- General education electives should come from any of the 10 general education silos not already fulfilled.
- 12 credit hours may be transferred back within a seven-year period if you leave Alfred prior to completing your degree.
- 30 credit hours of the 45 upper-level credit hours for this degree must be taken at Alfred.

### ADMISSION REQUIREMENTS

- Students must either possess an associate degree or have amassed at least 60 credit hours toward a degree, including courses that fulfill five different general education fields.
- Students entering the program should have a minimum cumulative GPA of 2.0.
- A laptop computer will be required of all technology management majors. Laptop specifications are available at [www.alfredstate.edu/required-laptops](http://www.alfredstate.edu/required-laptops).

**UNDECLARED MAJOR**

**Code # 0000**

Dr. Kathleen Ebert, Program Coordinator  
 Email address: ebertkc@alfredstate.edu

The undeclared major serves students who are undecided about their choice of study or career goals. The student has an opportunity to select a course of study the first two semesters that fits his/her interests and background.

A student enrolled in the undeclared major program must transfer to a degree-granting program within two semesters of admission. Depending on the choice of a major, a student may enter the workforce upon graduation, or opt to continue his/her education at a four-year institution.

Since the primary goal of the program is to explore various academic areas of interest, individual course schedules will vary. The suggested program below includes both a component of core courses (English, math, social science) and a component of electives in support of the student's interests.

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra  
 Recommended: Biology

**Undeclared Major**

TYPICAL TWO-SEMESTER PROGRAM

First	
Career Decision Making	1-2
English Fundamentals or	0
Freshman Composition	3
Math	3
Social Science Elective	3
Exploratory Elective	3-4
Exploratory Elective	3-4
	16-19
Second	
Freshman Composition or Introduction to Literature	3
Math or Science	3-4
Exploratory Elective	3-4
Exploratory Elective	3-4
Exploratory Elective	3-4
	15-19

### VETERINARY TECHNOLOGY

#### AAS Degree - Code #0521

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Dr. Melvin Chambliss, Program Director

Email address: [chamblm@alfredstate.edu](mailto:chamblm@alfredstate.edu)

The veterinary technology program at Alfred State has full accreditation status as granted by the American Veterinary Medical Association, Committee on Veterinary Technician Education and Activities, Education and Research Division, [1931 N. Meacham Road, Suite 100, Schaumburg, IL 60173-4360; (847) 925-8070].

The veterinary technology program is designed to provide students extensive core information in the theory and principles of veterinary science. The core information is then reinforced with the hands-on technical, animal, and laboratory experiences needed to prepare them to become licensed veterinary technicians. Licensed veterinary technicians are indispensable members of the veterinary medical team who are compassionate and highly motivated professionals dedicated to animal health care. The veterinary technician is capable of providing nursing care, life support, laboratory specimen analysis, physical therapy, surgical assistance, anesthesia, dental hygiene, radiographic imaging, and nutritional management for their animal patients. The veterinary technician is also adept at client education and grief management counseling.

The veterinary technology program is primarily housed in the Veterinary Technology Building. In the Agriculture Building, a vivarium houses mice, rats, snakes, lizards, tortoises, turtles, birds, rabbits, and guinea pigs; you will also find cat kennels, dog kennels, laboratories for teaching animal health care, animal anatomy and physiology, anatomy/necropsy, parasitology, laboratory animal management and exotics, surgical suites, medical imaging suites, pharmacy, animal examination rooms, and a clinical pathology laboratory. Large animal laboratories are conducted at the Alfred State farm. Students learn to safely work with and care for a variety of farm animals including horses, pigs, sheep, goats, alpacas, and dairy cattle of all ages.

An average week consists of 24-36 hours spent in the classroom and/or laboratories. Veterinary technology blends hands-on techniques with lecture-based course materials. Students are assigned an adviser from within the program to assist with career and academic planning.

Veterinary technology students are encouraged to become members of the student chapter of the NYSAVT (New York State Association of Veterinary Technicians) and NAVTA (National Association of Veterinary Technicians in America).

The veterinary technology program is designed to be completed in two academic years. Students enrolled as Alfred State Opportunities Program students have three academic years to complete the program. Transfer students with appropriate advanced degrees or transfer students from other veterinary technology programs may be eligible for advanced placement. In order to progress in the veterinary technology program, students must earn a "C" or better in each core veterinary technology course, with the exception of VETS 1214 large animal anatomy and physiology which requires a minimum of a "D" to pass the course. Students receiving an "F" in two or more successive core veterinary technology courses will be required to change majors.

#### PROGRAM STUDENT LEARNING OUTCOMES

1. Demonstrate a working knowledge of Anatomy & Physiology and Pathophysiology which will allow them to successfully and safely perform animal care and husbandry, physical examinations, restraint techniques, clinical imaging procedures, general anesthetic protocols, and clinical diagnostic testing procedures for all common domestic, laboratory and exotic animals handled in the program.
2. Demonstrate verbal, written, computer skills and critical thinking skills suitable to provide accurate client communication information and accurately complete all forms of medical records handled within the program.
3. Demonstrate the ability to analyze information, and compare and contrast agricultural management systems.
4. Accurately calculate common drug dose regimens and fluid administration rates and safely administer them for all common domestic, laboratory and exotic animals handled in the program.
5. Info Management (computer & research skills appropriate to degree level and type)
6. Written & Oral Communication (appropriate to degree level and type)
7. Critical Thinking (problem solving, reasoning skills appropriate to degree level and type)

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State veterinary technology graduates may enter directly into the technology management BBA degree program.

**EXPENSES**

Rabies vaccinations are required for all veterinary technology students. The vaccination series cost varies between \$600 and \$800. Textbooks are the primary annual expense with cost averaging \$1,000 to \$1,200 each year.

**TRANSFER OPPORTUNITIES**

The Alfred State veterinary technology program has an established transfer agreement with Cornell University's College of Agriculture. Students have also successfully transferred into the Purdue University BS veterinary technology program.

**OCCUPATIONAL OPPORTUNITIES**

- Veterinary Hospitals (Small Animal, Large Animal, Mixed Animal, and Exotic Animal)
- Biomedical Research Institutions
- Zoological Parks
- Educational Institutions
- Specialized Dairy Calf or Cow Management

**EMPLOYMENT STATISTICS**

Employment and transfer rate of 100 percent – 80 percent are employed; 20 percent transferred to continue their education.

**RELATED PROGRAMS**

Agricultural Technology  
Nursing

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Required: Algebra, Geometry, Algebra 2/  
Trigonometry, Biology,  
Chemistry

Recommended: Physics

**CERTIFICATION OR LICENSURE**

The veterinary technology program at Alfred State is a two-year educational course of study leading to an Associate in Applied Science degree and students are eligible to sit for the Veterinary Technology National Exam (VTNE). The VTNE is the New York state licensing exam for veterinary technicians. The demand for graduate-licensed or license-eligible veterinary technicians is strong across the country.

**Veterinary Technology - AAS Degree**

TYPICAL FOUR-SEMESTER PROGRAM

First			
VETS	1203	Intro. to Vet. Technology	3
VETS	1214	A & P of Large Animals	4
CHEM	1114	General Chemistry	4
MATH	1033	College Algebra OR	
MATH	1323	Quantitative Reasoning	3
ANSC	1204	Intro. to Animal Science OR	
VETS	3204	Farm Animal Management OR	
COMP	1503	Freshman Composition	3-4
			17-18

Second			
VETS	2014	A&P Small Animal	4
VETS	3013	Animal Parasitology	3
VETS	3003	Animal Health Care	3
ANSC	1204	Intro. to Animal Science OR	
VETS	3204	Farm Animal Management OR	
COMP	1503	Freshman Composition	3-4
	XXX3	General Education Elective	3
			16-17

Summer Session			
Preceptorship Work Experience			

Third			
VETS	4103	Lab Animal Management	3
VETS	3023	Radiography	3
BIOL	5254	Principles of Microbiology	4
VETS	2013	Pathophysiology of Animal Disease	3
ANSC	3013	Animal Disease Control	3
			16

Fourth			
	xxx3	Gen. Education Elective	3
VETS	3004	Anesthesia & Surgical Nursing	4
VETS	3024	Clinical Lab Techniques	4
	xxxx	Technical Elective	2-3
BUAD	3153	Fundamentals of Management	3
			16-17

\* Students planning to transfer to four-year program must take MATH 1033.

Suggested Technical Electives:

General Chemistry II	Reproduction and AI	General Biology I
Genetics	Large Animal Nutrition	General Biology II
Dairy Calf Management	Small Animal Nutrition	Precalculus
Dairy I	Livestock Management	Calculus
Dairy III		Statistics
Pharmacology for Veterinary Technicians		
Advanced Animal Health Care		

Full-time students can cross register at AU for equestrian classes

Also required: One unit of physical education.

**Preceptorship** of 240 hours. Either during summer or semester break after successful completion of second semester course requirements. Preceptorship hours can be fulfilled through part-time employment at an appropriate facility.

## PROGRAMS AT ALFRED STATE

ASOP students must earn a C or better in the Introduction to Veterinary Technology course and earn a B or better in the Domestic Animal Anatomy and Physiology course in order to progress to the next level of core veterinary courses.

### GRADUATION REQUIREMENTS

Students must:

- successfully complete the prescribed sequence of courses
- achieve a minimum of 2.0 in their core courses
- achieve a minimum of 2.0 overall
- be recommended by the department faculty

The Admissions and Performance Standards discussed in the following paragraphs define performance expectations that must be met for successful completion of the veterinary technology program at Alfred State. It is the policy of Alfred State to provide reasonable accommodations for those with disabilities as defined under the Americans with Disabilities Act. If you need an accommodation due to a disability under the Americans with Disabilities Act, please contact the Learning Center office at (607) 587-4122. Some accommodations may require up to six weeks to prepare. For progression in the veterinary technology program, students are expected to meet the following performance standards:

		spaces & provide assistance to patients.	clients & colleagues to ensure safety within the environment. Ability to prevent or escape injury caused by animals (e.g., biting, kicking, stampeding)
Motor Skills	Gross & fine motor abilities sufficient to provide safe, effective nursing care in a timely manner.		Use of instruments, supplies, safety devices and communication equipment in the care of patients. Performance of nursing care, surgical assistance, & laboratory techniques.
Hearing	Auditory ability sufficient to monitor and assess health needs.		Auditory ability sufficient to hear auscultatory sounds, monitor alarms, monitor and assess health emergency signals and cries for help. Hear needs, warning sounds from animals and humans of impending danger/injury.
Visual	Visual ability sufficient for observation and assessment necessary in nursing care.		Observe patients for expected and unexpected physical and emotional responses to nursing and medical treatment regimens. Use of diagnostic equipment such as a microscope, thermometer, refractometer, etc ...
Tactile	Tactile ability sufficient for physical assessment and performance of nursing duties in a timely manner.		Perform palpation functions of physical exam. Administer oral, intramuscular, subcutaneous, & intravenous medications. Insert and remove tubes and perform wound care management. Surgical assistance.
Physical Condition	Physical ability and stamina sufficient to restrain, lift, & assist in the care of a variety of species of animals. Ability to stand for extended periods of time. Ability to withstand extreme weather conditions. Immune system competence.		Safely lift, position, and restrain animals and supplies for treatment. Surgical assistance. Daily clinical routine. Year round treatment and care of outdoor animals. Exposure to a wide range of chemical and biological agents.

#### Some Examples of Necessary Activities (not all-inclusive)

Critical Thinking	Critical thinking sufficient for clinical judgment.	Identify cause-effect relationships in clinical situations. Develop nursing care plans. Demonstrate problem solving skills. Adapt to stressful situations.
Interpersonal	Interpersonal abilities sufficient to interact with patients, clients, families & groups from a variety of social, emotional, cultural & intellectual backgrounds.	Establish rapport with patients/clients & colleagues. Recognize appropriate boundaries in relationships with patients/clients & colleagues.
Communication	Communication abilities for interaction with others orally & in writing.	Explain treatment procedures, initiate health teaching, document & interpret nursing actions and patient/client responses. Team building skills.
Mobility	Physical abilities sufficient to move from room to room, maneuver in small	Move around in patient & treatment areas. Administer CPR. Provide physical assistance to

**WELDING TECHNOLOGY****AOS Degree - Code #0666**

The welding technology program is taught according to the standards set by the American Welders Society (AWS) and is AWS-certified.

The program focuses on welding processes performed in all positions on both plate and pipe. Topics include proper safety methods, required math, related skills, layout and fit up, welding codes and standards, welding inspection, testing, and drawing/welding symbol interpretation.

The first year, students will complete AWS Level I standards for an entry-level welder. The second year will take students toward AWS Levels II and III - advanced welder and expert welder. Additional techniques such as high-pressure vessel, high-pressure pipe, and ship fitting will be taught as well as other advanced welding techniques.

The students perform extensive hands-on work in a fully equipped approximately 2,600-sq.-ft. welding lab. Every student will have an individual welding booth with adequate ventilation and air replacement equipment. Lecture will be held in a separate facility utilizing the latest instructional techniques.

In their second year, the students will work in a 10,000-sq.-ft. fabrication facility located at the nearby Wellsville Dresser-Rand facility. This laboratory was made possible through a commitment from Dresser-Rand and Lincoln-Electric in partnership with Alfred State.

**PROGRAM STUDENT LEARNING OUTCOMES**

- Demonstrate mathematical operations using accepted mathematical applications.
- Practice shop safety and welding safety.
- Perform straight, bevel and cuts using manual and automatic oxyfuel and plasma equipment.
- Set-up and operate constant current welding equipment.
- Set-up and operate constant voltage welding equipment.
- Perform fillet and groove welds in all positions on carbon steel plate.
- Perform fillet and groove weld on pipe in all positions.
- Identify and describe the heat relationship to the grain structure of various metals.
- Maintain and develop testing and inspection records.

- Demonstrate layout and fabrication skills that culminate the previous materials used in program.

**DIRECT ENTRY INTO BACCALAUREATE DEGREE PROGRAM**

Alfred State welding technology graduates may enter directly into the technology management BBA degree program.

**OCCUPATIONAL OPPORTUNITIES**

- Industrial Welder
- Steel Construction
- Equipment Repair
- Self-employment
- Fabrication Welder
- Structural Welder

**EMPLOYMENT STATISTICS**

Employment and transfer rate:  
Welding Technology (AOS degree):  
90 percent – 60 percent are employed; 30 percent transferred to continue their education.

**RELATED PROGRAMS**

Air Conditioning and Heating Technology  
Autobody Repair  
Drafting/CAD: Model Building & Process Piping  
Drawing  
Drafting/CAD: Technical Illustration  
Machine Tool Technology  
Mechanical Engineering Technology

**ENTRANCE REQUIREMENTS/RECOMMENDATIONS**

Recommended: In-depth knowledge of basic math skills

**TECHNICAL STANDARDS**

Applicants for the welding program must meet the following physical requirements:

- Must be able to perform safely in the shop.
- Must be able to lift 50 pounds to eye level.
- Must be able to communicate orally with a person six-10 feet away in a shop environment.
- Must be able to visually decipher an oscilloscope monitor and digital/analog meter, and scan tool displays.
- Must be able to diagnose mechanical failures that are distinguished audibly.
- Must be able to understand and retain information found in service repair manuals and use diagnostic flow charts.
- Must be able to visually read an LCD display on welding equipment.
- Must have the dexterity and mobility to weld in all the welding positions to meet all requirements.
- Good eyesight is recommended.

## PROGRAMS AT ALFRED STATE

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### Welding-AOS Degree

#### TYPICAL FOUR-SEMESTER PROGRAM

First			
WELD	1724	Gas Welding, Gas Cutting and Plasma Cutting	4
WELD	1733	Weld Metallurgy, Blueprint Reading and Inspection & Testing	3
WELD	1728	Arc Welding, Carbon Arc Cutting and Gouging	8
WELD	1723	Welder's Calculations	3
			18

Second			
WELD	2715	Shielded Metal Arc and Flux Cored Arc Welding	5
WELD	2725	Gas Metal Arc Welding (GMAW I)	5
WELD	2735	Gas Tungsten Arc Weld'g	5
WELD	2733	Tolerancing and Working Drawings	3
			18

Third			
WELD	3005	SMAW II, Codes/Insp., Basic CNC	5
WELD	3015	GMAW II, FCAW II	5
WELD	3025	GTAW II, Comp of Materials	5
WELD	3813	Metallurgy Codes, Cert., Inspections & Testing	3
			18

Fourth			
WELD	4425	GMAW III, FCAW III, SAW	5
WELD	4435	SMAW III, GTAW III	5
WELD	4445	Welding Fabrication	5
WELD	4013	Senior Project	3
			18

### GRADUATION REQUIREMENTS

A student must successfully complete all courses in the prescribed four-semester program and earn a minimum cumulative index of 2.0, which is equivalent to a "C" average. Students are required to earn a grade of "C" or higher in WELD 1723 welders calculations to be eligible for graduation. (Articulation is available in this area.)

A "C" or higher must be received also for WELD 4013 senior project.



**STUDY ABROAD**

This section lists programs with study abroad options and the altered course plans for those electing to study abroad in the appropriate semester.

**Study Abroad Semester Outlines**

**ARCHITECTURAL TECHNOLOGY (BS DEGREE)  
Study Abroad Sixth Semester**

First			
COMP	1503	Freshman Composition	3
SOCI	1163	General Sociology**	3
MATH	1033	College Algebra	3
ARCH	1184	Design Fundamentals 1*	4
ARCH	2201	Architectural Computer Graphic Applications	1
FNAT	1303	Architectural History I	3
			17

Second			
LITR	2603	Introduction to Literature	3
PHYS	1024	General Physics I	4
MATH	2043	College Trigonometry	3
ARCH	2394	Design Fundamentals 2*	4
ARCH	4403	Computer Visualization	3
			17

Third			
MATH	1063	Technical Calculus I	3
PHYS	2023	General Physics II	3
ARCH	3104	Design Studio 1*	4
ARCH	1023	Construction Technology 1	3
ARCH	2123	Environmental Controls 1	3
			16

Fourth			
SPCH	1083	Effective Speaking	3
ARCH	3304	Construction Technology 2	4
CIVL	4104	Structural Technology	4
ARCH	4304	Design Studio 2*	4
PSYC	1013	General Psychology**	3
			18

Entry level of student into math and composition/literature sequences is a function of student's high school preparation and mathematics and English placement examinations.

Math through Technical Calculus I must be completed. Students who start at a higher level of math must meet SUNY general education and campus liberal arts and sciences course credit requirements for graduation.

\*Minimum combined GPA of 3.0 is required in Alfred State studio courses (ARCH 1184, ARCH 2394, ARCH 3104, and ARCH 4304) or comparable courses at another institution to guarantee admission into ARCH 5306 - Design Studio 3. A portfolio review is required of all continuing or transfer students not meeting this requirement.

\*\*May substitute HIST 1113, HIST 1143, HIST 2153, or PLSC 1043. Students should consult with their adviser regarding Gen. Ed./LAS requirements.

Fifth			
SOCI	5213	Science, Technology, & Society	3
ARCH	5306	Design Studio 3***	6
FNAT	5303	Architectural History II	3
	xxx3	Gen. Education Elective/Western Civilization OR Foreign Language	3
ITAL	1303	Italian I	3
			18

Sixth			
ITAL	2303	Italian II	3
ANTH	5223	Archeology - Cities of Fire	3
ARCH	6406	Studio Sorrento	6
ARCH	2433	Urban Sketch. & Journal.	3
			15

Seventh			
COMP	5703	Technical Writing II	3
MATH	7113	Economic Analysis	3
ARCH	7306	Design Studio 5***	6
ARCH	5503	Sustainable Building Design	3
ARCH	7001	Studio Thesis Research	1
			16

Eighth			
	xxx3	Gen. Ed./LAS elective (Upper Level)	3
	xxx3	Gen. Ed. Elective/American History OR Other World Civilization	3
ARCH	8306	Design Studio 6***	6
ARCH	8003	Professional Practice 2	3
CIVL	5213	Foundations and Conc. Const.	3
			18

Students must complete at least one course from seven of the 10 SUNY General Education Silos.

\*\*\*Minimum of "C" is required for ARCH 5306, ARCH 6306, ARCH 7306 and ARCH 8306.

Also required: One unit of physical education.

**BIOLOGICAL SCIENCE (AAS DEGREE)  
Study Abroad during Summer Session General Education Electives**

First			
BIOL	1104	General Biology I	4
CHEM	1114	General Chemistry OR	
CHEM	1984	Chemistry Principles I *	4
COMP	1503	Freshman Composition	3
BIOL	1101	Topics in General Biology	1
MATH	xxxx	Math Elective (MATH 1033 or greater)	3-4
			15-16

Second			
BIOL	2204	General Biology II	4
LITR	2603	Introduction to Literature	3
CHEM	2124	General Chemistry II OR	
CHEM	2984	Chemistry Principles II *	4
	xxxx	Technical Elective	2-4
	xxx3	Social Science Elective	3
			16-18

Third			
BIOL	5254	Principles of Microbiology	4
CHEM	3514	Organic Chemistry I	4
	xxxx	Technical Elective	2-4
MATH	xxxx	Math Elective	3-4
HIST	xxx3	History Elective	3
			16-19

Fourth			
BIOL	6534	Genetics	4
CHEM	4524	Organic Chemistry II	4
BIOL	2111	Biology Seminar	1
		Technical Elective(s)	2-4
		Open Elective	3-4
			14-17

**Technical Electives:**

AGPS	1103	Soils
AGRI	2012	Organic & Sustainable Agriculture Tech.
HORT	2544	Woody Plants
BIOL	1223	Intro. to Forestry
BIOL	1304	Botany

## PROGRAMS AT ALFRED STATE

BIOL	1404	Anatomy & Physiology I	
BIOL	2504	Anatomy & Physiology II	
BIOL	2633	Histotechniques	
BIOL	2803	Environmental Science	
BIOL	2801	Environmental Science Lab	
BIOL	4403	Pathophysiology (online)	
BIOL	5223	Ecology	
CHEM	6614	Instrumental Analysis	
CISY	1003	Intro. to Microcomputer Appl.	
		or	
CISY	3023	Adv. Computer Spreadsheets	
COMP	3703	Technical Writing	
AGPS	2203	Plant Physiology	
PHYS	1044	College Physics I	
PHYS	2044	College Physics II	
SPCH	1083	Effective Speaking	
MATH	1084	Calculus I (if not used as a technical elective)	
MEDR	1132	Essentials of Pharmacology (online)	

Other under advisement

MATH courses must be at the level of MATH 1033 college algebra or above.

Also required: One unit of physical education.

\*preferred for transfer

### BUSINESS ADMINISTRATION (BBA DEGREE)

#### Sixth Semester Study Abroad Option

First			
ACCT	1124	Financial Accounting	4
CISY	1103	Information Technology Mgt.	3
MKTG	2073	Principles of Marketing	3
MATH	1123	Statistics I OR Statistical Methods	3
COMP	1503	Freshman Composition	3
HPED	xxx1	Physical Education Elective	1
			17

#### Second

ACCT	2224	Managerial Accounting	4
ECON	1013	Macroeconomics	3
	xxx3	Humanities Gen. Ed. Elective	3
MATH	xxx3	Math Electives	3
	xxx3	Free Elective	3
			16

#### Third

BUAD	3153	Fundamentals of Management	3
ECON	2023	Microeconomics	3
SPCH	1083	Effective Speaking	3
BUAD	4203	Personal Financial Planning	3
	xxx3	Free Elective	3
			15

#### Fourth

BUAD	2033	Business Communications	3
	xxx3	General Education Elective	3
	xxx3	General Education Elective	3
	xxx3	General Education Elective	3
	xxx3	Business Elective	3
			15

#### Fifth

BUAD	3043	Business Law I	3
BUAD	5003	Management Communications	3
BUAD	6003	Managerial Finance *	3
TMGT	5001	Professional Business Seminar *	1
BUAD	5043	Business Ethics	3
BUAD	5023	Human Resource Management	3
			16

#### Sixth

BUAD	8013	International Business **	3
BUAD	6213	Business in the European Union**	3
		Business Elective (upper)	
BUAD	6113	Strateg. & Creat. Problem Solving **	3
	xxx3	General Education Elective	3
	xxx3	General Education Elective	3
			15

#### Seventh

BUAD	7023	Legal Environment of Business	3
BUAD	7033	Operations Management *	3
	xxx3	Business Elective - Upper	3
	xxx3	Business Elective - Upper	3
	xxx3	Gen. Ed. OR Business Elective	3
			15

#### Eighth

BUAD	8003	Management Information Systems**	3
BUAD	5013	Principles of Leadership **	3
BUAD	7273	Organizational Behavior **	3
BUAD	8023	Strategic Management **	3
BUAD	xxx3	Business Elective - Upper	3
			15

\* only offered in fall \*\* only offered in spring

### CODING AND REIMBURSEMENT SPECIALIST (CERT.)

Students are able to study abroad any semester taking additional classes offered on site.

#### First

BIOL	1114	Human A&P I	4
MEDR	1132	Essentials of Pharmacology	2
MEDR	1133	Medical Terminology	3
CISY	1003	Intro. to Microcomputers	3
			12

#### Second

MEDR	1114	Intro. to Health Info. Mgt.	4
BIOL	2214	Human A&P II	4
BIOL	4403	Pathophysiology	3
MEDR	1223	Health Data Management	3
			14

#### Third

MEDR	1244	CPT and HCPCS Level II Coding	4
MEDR	1234	ICD-9-CM, ICD-10-CM & ICD-10-PCS Coding	4
MEDR	5114	Electronic Health Records	4
			12

#### Fourth

MEDR	5214	Insurance & Reimbursement Proc.	4
MEDR	2614	Advanced Coding & Reimbursement	4
MEDR	1312	Intro. to HIM PPE	2
MEDR	1323	Coding PPE	3
			13

### CONSTRUCTION MANAGEMENT ENGINEERING TECHNOLOGY (BS DEGREE)

#### Study Abroad Fifth Semester Option

#### First

COMP	1503	Freshman Composition	3
CIVL	1011	Civil AutoCAD	1
CIVL	1204	Surveying I	4
CIVL	1013	Portland Cement Conc.	3
CIVL	1182	Civil Tech. Graphics	2
MATH	1033	College Algebra	3
			16

**Second**

CIVL	2154	Qual. Control of Mat.	4
CIVL	2204	Surveying II	4
PHYS	1024	General Physics I	4
MATH	2043	College Trigonometry	3
LITR	2603	Introduction to Literature	3
			<b>18</b>

**Third**

CIVL	3554	Comm. Bldg.	4
CIVL	4104	Structural Design	4
PHYS	2023	General Physics II	3
MATH	1063	Technical Calculus I	3
	xxx3	Gen. Education Elective - 1	3
			<b>17</b>

**Fourth**

CIVL	4143	Contracts/Spec./Estimat'g.	3
CIVL	4144	Construction Mgt.	4
CIVL	7104	Land Development	4
CIVL	6113	Environmental Engr. Tech.	3
	xxx3	Gen. Education Elective - 2	3
			<b>17</b>

**Fifth**

SPCH	1083	Effective Speaking - online	3
TMGT	7153	Prin. of Management - online	3
	xxx3	Gen. Education Elective - 4	3
	xxx3	Gen. Education Elective - 5	3
		May take additional GE or business course	12
			<b>18</b>

**Sixth**

CHEM	5013	Applied Chemical Principles	3
CIVL	6214	Advanced Estimating	4
CIVL	6212	Construction Safety	2
ACCT	5043	Accounting Perspectives	3
	xxx3	Gen. Education Elective - 6	3
CIVL	6123	Mechanical Systems	3
			<b>18</b>

**Seventh**

MATH	1123	Statistics I	3
CIVL	7223	Construction Project Planning	3
MATH	7113	Economic Analysis for Engineering Technology	3
ECON	2023	Microeconomics	3
CIVL	7213	Construction Systems	3
COMP	5703	Technical Writing II	3
			<b>18</b>

**Eighth**

	xxx3	Upper Business Elective	3
CIVL	5213	Foundations & Concrete Construction	3
CIVL	8123	Construction Project Administration	3
BUAD	3043	Business Law I	3
ECON	1013	Macroeconomics	3
		Gen. Ed. Elective - Upper if needed	3
			<b>18</b>

Also required: One unit of physical education.

General Education Electives:

- American History
- Social Sciences
- Western Civilization
- Other World Civilization
- Arts

**FINANCIAL PLANNING (BBA DEGREE)**

**Study Abroad Sixth Semester Option**

**First**

ACCT	1124	Financial Accounting	4
CISY	1103	Information Technology Mgt.	3
MKTG	2073	Principles of Marketing	3
MATH	1123	Statistics I or Statistical Methods	3
COMP	1503	Freshman Composition	3
HPED	xxx1	Physical Education Elective	1
			<b>17</b>

**Second**

ACCT	2224	Managerial Accounting	4
BUAD	2033	Business Communications	3
CISY	3023	Adv. Micro Spreadsheets	3
	xxx3	Literature Elective	3
SPCH	1083	Effective Speaking	3
MATH	1033	College Algebra	3
			<b>19</b>

**Third**

BUAD	3153	Fund. of Management	3
BUAD	3043	Business Law I	3
BUAD	4203	Intro. to Personal Financial Planning	3
ECON	1013	Macroeconomics	3
BUAD	4133	Investments	3
ACCT	3453	Tax Accounting I **	3
			<b>18</b>

**Fourth**

MKTG	1063	Principles of Sales *	3
ECON	2023	Microeconomics	3
BUAD	4193	Insurance & Risk Management *	3
FSMA	6003	Employee Benefit Planning *	3
FSMA	5003	Investment Planning *	3
	xxx3	Business Elective	3
			<b>18</b>

**Fifth**

BUAD	5003	Management Communications	3
BUAD	5023	Human Resource Management	3
FSMA	7023	Estate Planning **	3
	xxx3	General Education Elective	3
COMP	5703	Technical Writing II	3
TMGT	5001	Professional Business Seminar **	1
	xxx3	(General Education Elective)	3
			<b>19</b>

**Sixth**

BUAD	6213	Business in the European Union	3
BUAD	8013	International Business	3
	xxx3	Management Elective - Upper	3
	xxx3	General Education Elective	3
	xxx3	General Education Elective	3
			<b>15</b>

**Seventh**

FSMA	7123	Personal Fin. Planning Capstone **	3
BUAD	5033	Retirement Planning **	3
FSMA	5103	Tax Planning **	3
FSMA	7103	Money and Banking **	3
	xxx3	General Education Elective	3
BUAD	xxx3	Management Elective Upper Level	3
			<b>18</b>

**Eighth**

FSMA	8112	Internship	12
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\*offered in spring only    \*\*offered in fall only

## PROGRAMS AT ALFRED STATE

### FORENSIC SCIENCE TECHNOLOGY (BS DEGREE)

Study Abroad during Summer Session

General Education Electives

#### First

FRSC	1001	Intro. to Forensic Science I	1
CHEM	1984	Chemical Principles I	4
BIOL	1104	General Biology I	4
COMP	1503	Freshman Composition	3
MATH	1033	College Algebra	3
		OR	
MATH	2124	Statistical Methods and Analysis	4
			15-16

#### Second

FRSC	2001	Intro. to Forensic Science II	1
CHEM	2984	Chemical Principles II	4
BIOL	2204	General Biology II	4
SPCH	1083	Effective Speaking	3
MATH	1054	Pre-Calculus	4
		OR	
MATH	1084	Calculus I	4
		OR	
MATH	2043	College Trigonometry	3
			15-16

#### Third

FRSC	3001	Topics in Forensic Science I	1
CHEM	3514	Organic Chemistry I	4
PHYS	1044	College Physics I	4
HPED	xxx1	Phys. Ed. Elective	1
MATH	1084	Calculus I	4
		OR	
MATH	2124	Statistical Methods & Analysis	4
HIST	xxx3	General Education History	3
			17

#### Fourth

FRSC	4001	Topics in Forensic Science II	1
CHEM	4524	Organic Chemistry II	4
PHYS	2044	College Physics II	4
GEN Ed	xxx3	General Education Elective	3
GEN Ed	xxx3	General Education Elective	3
		OR	
MATH	2094	Calculus II (Tech. Elective)	4
			15-16

#### Fifth

CHEM	5414	Analytical Principles (Chem. option)	4
		OR	
BIOL	5254	Principles of Microbiology (Bio. option)	4
CJUS	1003	Intro. to Criminal Justice	3
	xxx3	Technical Elective	3-4
LITR	xxx3	Literature Elective	3
GEN ED	xxx3	General Education Elective	3
			16-17

#### Sixth

	xxx3	Technical Elective (Chem. option)	3
		OR	
BIOL	6534	Genetics (Bio. option)	4
CHEM	6614	Instrumental Analysis	4
CJUS	6003	Law and Criminal Evidence	3
GEN ED	xxx3	General Education Elective	3
		OR	
	xxx3	Technical Elective	3-4
SOCI	5213	Science, Technology & Society	3
			16-18

#### Seventh

FRSC	7104	Criminalistics I	4
CHEM	7784	Biochemistry	4
	xxx3	Technical Elective	3-4
	xxx3	Upper Level Elective	3
COMP	5703	Technical Writing	3
			17-18

#### Eighth

FRSC	8104	Criminalistics II	4
FRSC	8111	Capstone Experience	1
FRSC	8113	Professional Preparation	3
FRSC	8803	Senior Research Project	3
		OR	
FRSC	8813	Internship	3
CHEM	6854	Physical Chemistry (Chem. option)	4
		OR	
	xxx3	Technical Elective (Bio. option)	3
			14-15

#### Approved Technical Electives

BIOL 1404 & 2504	Anatomy & Physiology I and II
BIOL 2633	Histotechniques
BIOL 4403	Pathophysiology
BIOL 5223	Genetic Engineering
CISY 3023	Advanced Computer Spreadsheets
CHEM 4900	Directed Study, Chemistry
FRSC 8900	Directed Study, Forensic
MATH 2094	Calculus II
MATH 6114	Differential Equations
MATH 5900	Directed Study, Mathematics
MEDR 1132	Essentials of Pharmacology

### HUMAN SERVICES MANAGEMENT (BS DEGREE)

Study Abroad Third or Fourth Semesters

Study Abroad Eight Semester Internship Option

#### First

COMP	1503	Freshman Composition	3
PSYC	1013	Gen. Psychology	3
SOCI	1163	Gen. Sociology	3
HUSR	2083	Intro. to Human Services	3
HIST	1143	Survey of American History I	3
HPED	xxx1	Physical Education	1
			16

#### Second

PSYC	1023	Human Development	3
PSYC	1063	Basic Helping Skills	3
HUSR	4033	Issues in Human Services	3
LITR	xxx3	Literature Elective	3
MATH	xxx3	Statistical Concepts OR Statistics I	3
			15

#### Third

	xxx3	Open Elective	3
	xxx3	Other World Civiliz. Elective *	3
	xxxx	Open Elective	3
	xxxx	Liberal Arts Elective	3
	xxxx	Fine Arts Elective	3
	xxxx	General Ed. Elective	3
			18

#### Fourth

SOCI	1183	Contemp. Soc. Problems	3
SOCI	1223	Minority Cultures	3
HUSR	1074	Practicum **	4
	xxx	Natural Science Elective	3-4
	xxx3	Open Elective	3
			15-16

Fifth			
ACCT	5043	Accounting Perspectives	3
BUAD	3153	Fundamentals of Management	3
SOCI	5023	Research Methods	3
PSYC	5013	Counseling Theory	3
HUSR	5003	Community Organization	3
			15

Sixth			
BUAD	5023	Human Resource Management	3
BUAD	5013	Principles of Leadership	3
BUAD	5003	Management Communication	3
	xxx3	Liberal Arts Elective	3
HUSR	5103	Social Policy & Human Services	3
			15

Seventh			
	xxx3	Liberal Arts Elective	3
BUAD	5043	Ethics & Leadership in Management	3
HUSR	5203	Grants, Contracts, Org. Adv. On HS	3
HUSR	5213	Case Management Systems	3
PSYC	5103	Industrial Psychology	3
			15

Eighth			
HUSR	5314	Field Practicum & Seminar ****	14

**Note:**

- \* One out of international relations or marriage and family across world civilizations
- \*\* 104 hours of field work and two-hour seminar
- \*\*\* One out of American history I, American history II, or American government
- \*\*\*\* Minimum 400 hours field work, three-hour weekly seminar

**LIBERAL ARTS AND SCIENCES: ADOLESCENT EDUCATION - BIOLOGY (AA DEGREE)**  
Study Abroad Fourth Semester Option

FIRST			
COMP	1503	Freshman Comp.	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American History	3
BIOL	1104	General Biology	4
MATH	1054	Pre-Calculus	4
			17

SECOND			
PSYC	2033	Adolescent Dev.	3
LITR	2603	Intro. to Lit.	3
HIST	1113	Western Civilization	3
BIOL	2204	General Biology II	4
EDUC	2163	Foundations of Education	3
			16

THIRD			
ITAL	1303	Italian I	3
HPED	1111	Health & Wellness	1
BIOL	4254	General Micro.	4
SOCI	1193	Marriage & Family Across World Civ.	3
SPCH	1083	Effective Speaking	3-4
XXXX	XXX	Liberal Arts Elective	3
			17-18

FOURTH			
ITAL	2203	Italian II	3
FNAT	xxx3	Fine Arts elective	3
BIOL	1114	Hum. A & P I	4
XXXX	XXX	Open Elective	3-4
XXXX	XXX	Open Elective	3-4
			16-18

**LIBERAL ARTS AND SCIENCES: ADOLESCENT EDUCATION - CHEMISTRY (AA DEGREE)**  
Study Abroad Summer Option

FIRST			
COMP	1503	Freshman Comp.	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American History	3
CHEM	1984	Chemical Principles	4
MATH	1054	Pre-Calculus	4
			17

SECOND			
PSYC	2033	Adolescent Dev.	3
LITR	2343	Children's Lit. OR	3
LITR	2603	Intro. to Lit.	3
HIST	1113	Western Civilization	3
CHEM	2984	Chemical Principles II	4
FNAT	XXX3	Fine Arts Elective	3
			16

SUMMER			
FNAT	xxx3	Fine Arts Elective	3
XXXX	xxxx	Open Elective	3-4
XXXX	xxxx	Open Elective	3-4
			9-11

THIRD			
PLSC	1053	Intl. Relations OR	3
SOCI	1193	Marriage & Family Across World Civ.	3
SPAN	1203	Spanish I	3
HPED	1111	Health & Wellness	1
XXXX	XXXX	Open Elective	3-4
XXXX	XXX3	Liberal Arts Elective	3
CHEM	3514	Organic Chemistry	5
			17-18

FOURTH			
EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3
SPAN	2203	Spanish II	3
CHEM	4524	Organic Chemistry II	4
XXXX	XXXX	Open Elective	3-4
			16-17

**LIBERAL ARTS AND SCIENCES: ADOLESCENT EDUCATION - MATH (AA DEGREE)**

Study Abroad after first year. Students must be qualified to be in Calculus I in first fall semester. Students must declare intent to do study abroad before first semester.

FIRST			
COMP	1503	Freshman Comp.	3
PSYC	1013	General Psychology	3
HIST	1143	Survey of American History I	3
SPAN	1203	Spanish I	3
MATH	1084	Calculus I	4
HPED	1111	Health & Wellness	1
			17

SECOND			
SPCH	1083	Effective Speaking	3
LITR	2343	Children's Lit. OR Intro. to Lit.	3
SPAN	2223	Spanish II	3
XXXX	xxxx	Liberal Arts Elective	3
XXXX	xxxx	Liberal Arts Elective	3
			15

## PROGRAMS AT ALFRED STATE

THIRD			
PLSC	1053	Intl. Relations OR	3
SOCI	1193	Marriage & Family Across World Civ.	3
HIST	1113	Western Civilization	3
MATH	2094	Calculus II	4
MATH	3003	Linear Algebra	3
FNAT	XXX3	Fine Arts Elective	3
			16

FOURTH			
EDUC	2163	Foundations of Education	3
XXXX	xxx4	Natural Science Elective with Lab	4
MATH	6104	Multivariate & Vector Calculus	4
PSYC	2033	Adolescent Development	3
MATH	2163	Discrete Mathematics	3
			17

### LIBERAL ARTS AND SCIENCES: ADOLESCENT EDUCATION - PHYSICS (AA DEGREE)

Study abroad after first year. Students must be qualified to be in Calculus I in first fall semester. Students must declare intent to do study abroad before first semester.

FIRST			
COMP	1503	Freshman Comp.	3
PSYC	1013	General Psychology	3
MATH	1044	College Physics I	3
SPAN	1203	Spanish I	3
MATH	1044	Calculus In	4
			17

SECOND			
PSYC	2033	Adolescent Development	3
LITR	2343	Children's Lit OR Intro to Lit	3
SPAN	2203	Spanish II	3
PHYS	2044	College Physics II	4
MATH	1084	Calculus II	4
			17

THIRD			
PLSC	1053	Intl. Relations or Marriage & Family Across World Civ.	3
HIST	1113	Western Civilization	3
XXXX	xxxx	Open Elective	3
HIST	1143	Survey of American History I	3
FNAT	XXX3	Fine Arts Elective	3
			15

FOURTH			
EDUC	2163	Foundations of Education	3
SPCH	1083	Effective Speaking	3
MATH	6104	Multivariate & Vector Calculus	4
XXXX	XXX3	Open Elective	3
HPED	1111	Health & Wellness	1
			14

### LIBERAL ARTS AND SCIENCES: SOCIAL SCIENCE (AA DEGREE)

Study Abroad Semester Third Option  
Math and Science 2 4-hr lab must be taken first and second semesters.  
Students must declare intent to study abroad before first semester.

First			
COMP	1503	Freshman Composition	3
PSYC	1013	General Psychology or Sociology	3
xxxx	xxxx	Gen. Education Elective	3
MATH	xxx3	Math Elective	3-4
	xxx	Science Elective	4
			16-17

Second			
XXXX	xxxx	Philosophy or Computer Language	3
LITR	2603	Introduction to Literature	3
SOCI	xxx3	Sociology Elective	3
MATH	xxx3	Math Elective	3
XXXX	xxxx	Science	4
XXXX	xxxx	General Education Elective	3
			16-17

Third			
XXXX	xxxx	Mathematics and/or Science	3-8
XXXX	xxxx	Gen. Education Elective	3
XXXX	xxxx	Free Electives	6-9
			12-17

Fourth			
	xxx3	Other World Civilization Elective	3
	xxxx	Natural Science Elective	3-4
	xxx3	Open Elective	3
	xxx3	Open Elective	3
SOCI	1223	Minority Cultures	3
			15-16

Also required: One credit hour of physical education.

### LIBERAL ARTS AND SCIENCES: MATH & SCIENCE (AA DEGREE)

Study Abroad Semester Third Option  
Math and Science 2 4-hr lab must be taken first and second semesters.  
Students must declare intent to study abroad before first semester.

First			
COMP	1503	Freshman Composition	3
PSYC	1013	General Psychology or Sociology	3
xxxx	xxxx	Gen. Education Elective	3
MATH	xxx3	Math Elective	3-4
	xxxx	Science Elective	4
			16-17

Second			
XXXX	xxxx	Philosophy or Computer Language	3
LITR	2603	Introduction to Literature	3
SOCI	xxx3	Sociology Elective	3
MATH	xxx3	Math Elective	3
XXXX	xxxx	Science	4
XXXX	xxxx	General Education Elective	3
			16-17

Third			
XXXX	xxxx	Mathematics and/or Science	3-8
XXXX	xxxx	Gen. Education Elective	3
XXXX	xxxx	Free Electives	6-9
			12-17

Fourth			
XXXX	xxxx	Mathematics and/or Science	6-12
XXXX	xxxx	Physical Education	1
XXXX	xxxx	Free Electives	6-12
			14-18

### SURVEYING ENGINEERING TECHNOLOGY (BS DEGREE) Study Abroad Sixth Semester Option

Fifth			
MATH	2074	Technical Calculus II	4
BUAD	3043	Business Law/CISY	3
COMP	5703	Technical Writing II	3
CIVL	5104	Geological Engr. Tech.	4
CIVL	5114	Land Surveying <b>OR</b>	4
CIVL	7114	Geographic Info Systems	4
			18

Sixth			
XXXX	xxx3	Gen. Ed. Elective 3	3
XXXX	xxx3	Gen. Ed. Elective 4	3
SPCH	1083	Effective Speaking - online	3
CIVL	6104	Anal. & Adj. of Surv. Meas.	4
			13

Seventh			
MATH	7113	Economic Analysis for Engr. Tech.	3
MATH	7123	Statistics for Engr. Tech.	3
CIVL	8104	Satellite & Geodetic Surv.	4
CIVL	5114	Land Surveying <b>OR</b>	
CIVL	7114	Geographic Info Systems	4
CIVL	7001	Senior Seminar & Proj. Design	1
CHEM	5013	App. Chem. Prin.	3
			18

Eighth			
BSET	8003	Senior Technical Project	3
PHYS	8013	Modern Physics	3
CIVL	7104	Land Develop & Design	4
CIVL	6113	Environmental Tech. Concepts	3
MATH	5014	Tech Calculus III	4
			17

Also required: One unit of physical education

General Education Electives: (maximum - one from each area)  
 American History      Social Sciences      Western Civilization  
 Other World              Arts  
 Civilization

**TECHNOLOGY MANAGEMENT (BBA DEGREE)**  
**Study Abroad Eight Semester Option**

Fifth			
BUAD	5003	Management Communications	3
ACCT	5043	Accounting Perspectives	3
BUAD	5053	Software Applications in Business**	3
TMGT	7153	Principles of Management **	3
ECON	1013	Macroeconomics	3
TMGT	5001	Professional Business Seminar **	1
			16

Sixth			
BUAD	7023	Legal Environment of Business	3
CISY	7003	Project Management*	3
BUAD	6113	Strategic & Creative Problem Solving*	3
COMP	5703	Technical Writing II	3
MKTG	6003	Strategic Marketing*	3
	XXX3	General Ed. or Business Elective	3
			18

Seventh			
BUAD	5043	Business Ethics	3
BUAD	5023	Human Resources Management	3
TMGT	7003	Managing Tech. and Innovation**	3
SPCH	1083	Effective Speaking (if needed) <b>OR</b>	
	xxx3	Gen. Education Elective	3
	xxx3	Gen. Education Elective	3
	xxx3	Gen. Education Elective	3
			18

Eighth			
TMGT	8112	Tech. Management Internship***	6
BUAD	xxx3	Busi. Elective Upper up to 6 credits	6
	xxx3	General Ed. up to 6 credits	6
			18

Also required: One unit of physical education.

\* Course offered spring semester only  
 \*\*Course offered fall semester only  
 \*\*\*Accommodations will be offered to students who are unable to fulfill internship requirements.

# Course Descriptions

**TABLE OF CONTENTS**

ACCT	Accounting
AGEC	Agriculture Economics Business
AGPS	Agronomy/Plant Science.....
AGRI	Agriculture .....
ANSC	Animal Husbandry Science .....
ANTH	Anthropology.....
ARCH	Architecture and Design
ASDC	Alfred Student Development Center.....
AUTO	Automotive.....
BIOL	Biology .....
BLCT	Building Construction.....
BSET	Bachelor of Science in Engineering Technology .....
BUAD	Business Administration .....
CHEM	Chemistry.....
CIAT	Computer Imaging/Architectural Engineering Technology .....
CISY	Computer Information Systems .....
CIVL	Civil Engineering Technology .....
CJUS	Criminal Justice .....
COMP	Composition.....
CTRP	Court Reporting .....
DCAD	Drafting/CAD
DGMA	Digital Media and Animation
DSGN	Interior Design .....
ECON	Economics .....
EDUC	Education
ELET	Electrical Engineering Technology .....
ELTR	Electrical/Electronic Service .....
EMET	Electromechanical Engineering Technology.....
ENGR	Engineering Science
ENVR	Environmental Technology.....
ESOL	English Second Language.....
FDSR	Food Services/Culinary Arts
FILM	Film Studies.....
FNAT	Fine Arts.....
FRSC	Forensic Science .....
FSMA	Financial Services
GEOL	Geology .....
HIST	History.....
HLTH	Health .....
HPED	Health & Physical Education
HUMN	Humanities
HUSR	Human Services .....
ITAL	Italian
JAPN	Japanese
LANG	Language .....
LITR	Literature .....
MATH	Mathematics.....
MATT	Machine Tool Technology.....
MECH	Mechanical Engineering Technology .....
MEDR	Medical Records.....
MKTG	Marketing.....
NASC	Natural Science.....
NURS	Nursing .....
PHIL	Philosophy .....
PHYS	Physics .....
PLSC	Political Science .....
PSYC	Psychology .....
READ	Reading
RELG	Religion .....
SOCI	Sociology.....
SPAN	Spanish.....
SPCH	Speech.....
SPMG	Sports Management.....
TMGT	Technology Management.....
VETS	Veterinary Technology Science .....
WELD	Welding.....



**NOTE:** An \* after the course title denotes development/remedial course. An \* found within the list of prerequisites denotes that the course and pre-requisite can be taken concurrently.

**COURSE DESCRIPTIONS****ACCOUNTING****ACCT 1124 - Financial Accounting, 4 Credits**

Level: Lower

Topics include: fundamental principles of accounting, the accounting cycle and basic procedures, statement of financial position, determination and reporting of periodic earnings, cash and accrual basis of accounting; accounting for a merchandising firm and inventory valuation, principles of internal control; and accounting for the acquisition, depreciation, and disposition of property, plant, and equipment.

**ACCT 2224 - Managerial Accounting, 4 Credits**

Prerequisite(s): ACCT 1124 with D or better

Level: Lower

Topics include: current liabilities; nature of corporations and related equity and income reporting issues; long-term liabilities; statement of cash flows; analysis of financial statements; nature and behavior of manufacturing costs; introduction to cost accounting concepts and systems; cost-volume-profit relationships; introduction to budgetary planning.

**ACCT 3423 - Intermediate Accounting I, 3 Credits**

Prerequisite(s): ACCT 2224 with C or better

Level: Lower

This course provides an in-depth examination of accounting theory in the treatment of assets, liabilities and stockholder's equity. The accounting cycle is reviewed in detail and a full examination and analysis of financial statement development and usage is undertaken. Continual focus will be on fundamental accounting concepts and principles with special emphasis on the contemporary theory and practice that applies to accounting statements. Topics covered include the foundations of accounting, the accounting process, accounting statements, and asset structure of the balance sheet.

**ACCT 3433 - Cost Accounting I, 3 Credits**

Prerequisite(s): ACCT 2224 with D or better

Level: Lower

Topics include: objectives of cost accounting, the role of cost accounting in relation to the performance of management functions with the emphasis on control and responsibility accounting; cost/benefit analysis; variable and fixed costs; period and product costs; cost-volume-profit relationships; The development and use of static and flexible budgets as managerial tools for planning and control; variance analysis for product costs under static and flexible budgeting; variable vs. absorption costing, and J.I.T. production.

**ACCT 3453 - Tax Accounting I, 3 Credits**

Prerequisite(s): ACCT 1124 with D or better

Level: Lower

Topics include: federal income taxation for the individual including filing requirements and status, exemptions, deductions, determination of taxable income, computation of tax, tax credits and tax payments; business or professional income from the sole proprietorship, self-employment tax, supplemental sources of income, and capital gains and losses.

**ACCT 4523 - Intermediate Accounting II, 3 Credits**

Prerequisite(s): ACCT 3423 with D or better

Level: Lower

Continuation of ACCT 3423. Topics include: long-term investments, fixed assets, current and long-term debt, and stockholder's equity. Special problems of income determination, statement of cash flow and statements from incomplete records.

**ACCT 4663 - Acctng Sys & Computer Appl, 3 Credits**

Prerequisite(s): ACCT 2224 with D or better

Level: Lower

This course will cover all aspects of accounting for payroll, including the requirements of the Fair Labor Standards Act, calculations relative to gross pay, statutory and non-statutory deductions, employee and employer payroll taxes, general journal entry work relative to payroll, the payroll register, and the individual earnings record. Determining the amount and

## COURSE DESCRIPTIONS

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timing of payroll deposits, and preparing required quarterly and annual reports will also be covered. The course will then apply payroll and other accounting activities to a contemporary accounting software product covering the following topics: creating a new business, establishing a chart of accounts, recording typical business transactions, creating related financial statements, closing the books and employing available business research and evaluation techniques.

### **ACCT 4900 - Directed Study, 1 to 3 Credits**

Level: Lower

A student may contract for one to three credit hours of independent study through an arrangement with an instructor who agrees to direct such a study or project. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the progress of the study.

### **ACCT 5043 - Accounting Perspectives, 3 Credits**

Level: Upper

This course is intended to examine and apply the basic assumptions, principles, concepts, and methods commonly used in the accounting profession. The course is intended more for the users of accounting information than for the originators of it. Debits and credits are virtually ignored. Thus, the student examines the whys" of accounting to a much greater degree than the "hows". The course is split into two major components. The first half examines financial accounting topics

## **AGRICULTURE ECON/BUS**

### **AGEC 3213 - Farm & Rural Bus Management, 3 Credits**

Level: Lower

Both the production management and financial management of a rural or farm business is studied in this course. The course emphasizes the skills needed to manage a profitable business including analysis of financial statements, record keeping, key production management areas, leadership and decision-making skills. The relationship between good management performance and financial success will be stressed. Basic management processes, financial records, and analysis required to manage a farm or rural business will be studied. The course emphasizes the skills needed to understand, analyze and operate a profitable business. Aspects and functions of management and types of decision making will be introduced. Acquiring organizing financial management information will be the primary emphasis of the course including constructing and analyzing financial statements and pertinent productions information. The importance of financial management to the success of the business will be stressed.

### **AGEC 4303 - Rural Business Finance, 3 Credits**

Prerequisite(s): AGEC 3213 with D or better

Level: Lower

Both the production management and financial management of a farm business are studied in this course. The course emphasizes the skills needed to manage a profitable business including analysis of financial statements, record keeping, key production management areas, and leadership and decision-making skills. The relationship between good management performance and financial success will be stressed.

## **AGRONOMY/PLANT SCIENCE**

### **AGPS 1103 - Soils, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

Fundamental principles of soil science are studied in an effort to relate soil characteristics to plant growth; plant growth as influenced by soil factors. Soil parent materials and soil formation, physical, chemical and colloidal properties of soils and soil surveys, life in the soil, soil water, and water conservation, plant nutrition, lime and liming practices are all covered in this course. Laboratory components complements lecture material.

### **AGPS 2113 - Field & Forage Crops, 3 Credits**

Level: Lower

The course will combine fundamental knowledge of field crop physiology with practical training in crop production. Crop interactions with other organisms, both beneficial and deleterious (pests), will be studied. Management of synthetic inputs will be included in this course. Emphasis will be given to cultural (or biological) crop management strategies that reduce input costs in crop production and reduce fluctuations (risks) to crop performance and the environment.

**AGPS 2203 - Plant Physiology, 3 Credits**

Prerequisite(s):

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

Application of basic plant science to understanding the principles of crop production. The course includes such topics as transpiration, water conduction, mineral nutrition, growth regulators, soil-plant relationship, carbohydrate metabolism, photosynthesis, growth and development, physiological disorders, dormancy and others. An opportunity to conduct study projects using the plant growth chambers and plant science greenhouse is available.

**AGPS 3004 - Soil Fertility, 4 Credits**

Prerequisite(s): AGPS 1103 with D or better

Level: Lower

This course is a comprehensive study of the management of plant nutrients in agronomic systems for economic response and environmental protection. Topics include diagnosis of nutrient availability and prediction of crop response to fertilizers, interactions between nutrient response and chemical, physical, and biological properties of soils.

**AGPS 5003 - Integrated Pest Management, 3 Credits**

Prerequisite(s): AGPS 1103 with D or better and BIOL 1304 with D or better

Level: Upper

This course is an introduction to Integrated Pest Management (IPM): the study of plant pest protection on an interdisciplinary basis. Ecological, biological and economic principles will be emphasized from each of the participating disciplines: entomology, nematology, plant pathology, weed science, engineering, and economics. Reasons and principles for establishing pest management programs will be discussed. Computer-aided instruction is used in portions of the course. The objectives of the course are to: introduce the student to the principles of pest management; develop an understanding of vocabulary and basic concepts; develop an understanding of tactics associated with pest management; and create an awareness of interdisciplinary complexity and necessity of systems approach in IPM.

**AGPS 5102 - Sustainable Vegetable Prod Tec, 2 Credits**

Prerequisite(s): AGPS 1103 with D or better

Level: Lower

Students will learn how to site, design, and manage a small-scale vegetable farm, using organic or other sustainable practices that support niche-marketing strategies. Particular attention will be paid to crop sequences appropriate for the climates and soils of the Northeastern United States. Students will gain hands-on experience in building soil quality, starting transplants, identifying and managing pests, harvesting and marketing of vegetables. Later in the course, students will work with sustainable winter-production technologies, including passively-heated high tunnels and intensive vegetable production using hydroponic techniques.

**AGPS 5103 - Sustainable Vegetb Prodtn Tech, 3 Credits**

Prerequisite(s): AGPS 1103 with D or better

Level: Upper

Students will learn how to site, design, and manage a small-scale vegetable farm using organic and/or other sustainable practices that support niche-marketing strategies. Particular attention will be paid to crop sequences appropriate for the climates and soils of the Northeastern United States. Students will gain hands-on experience in building soil quality, starting transplants, identifying and managing pests, harvesting and marketing of vegetables. Later in the course students will work with sustainable winter-production technologies, including passively-heated high tunnels and intensive vegetable production using hydroponic techniques.

**AGPS 5900 - Directed Study, 1 to 4 Credits**

Level: Upper

A student may contract for one to four credit hours of independent study through an

## COURSE DESCRIPTIONS

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arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

### AGRICULTURE

#### **AGRI 1002 - Introduction to Agriculture, 2 Credits**

Level: Lower

The introduction to Agriculture will give students the opportunity to learn and practice a variety of agriculture skills. Skills will include care and management of dairy animals, machinery and equipment safety and operation, crop, fruit and vegetable production.

#### **AGRI 2012 - Organic & Sustainable Agr Tech, 2 Credits**

Level: Lower

This course will introduce students to environmentally sound methods of agriculture. The goal is to help students understand methods and technologies for using water, soil, pasture and manure resources in ways that create a biologically healthy landscape for animals and for society. This course will introduce students to a more natural approach to animal agriculture as well as to explore the synergy of an integrated organic cropping and animal agricultural systems.

#### **AGRI 2022 - Dairy Cattle Evaluation, 2 Credits**

Level: Lower

The course will focus on the phenotypic evaluation of dairy cattle in relation to the productive life of the animals as well as efficiency, and the economic impact on dairy producers. Labs consist of students spending time cow-side evaluating animals via knowledge retained during lecture. Anatomy of the cow will be mastered, value of type traits will be learned, differentiation of the dairy breeds will be understood, and oral presentation skills will be honed.

#### **AGRI 3351 - Live Animal Evaluation, 1 Credit**

Level: Lower

The efficiency of animal husbandry depends on the ability of an individual to evaluate, judge and select animals based on their productive and reproductive abilities. Communication, both oral and written, makes the judges reasons much more effective.

#### **AGRI 4002 - Senior Seminar/Capstone Proj, 2 Credits**

Level: Lower

This course enables the student to develop career professionalism, job finding techniques and the personal and social skills necessary for success in the world of work. A job search is organized, resumes prepared with cover letters, and practice interviews are conducted. Many types of jobs are studied using successful graduates. Professional and personal goals are discussed.

#### **AGRI 4103 - Constructn Technqs for Agrict, 3 Credits**

Level: Lower

This course is designed for students planning for careers requiring general knowledge and basic skills in agricultural building construction and maintenance. The course content consists of proper and safe hand tool and power tool utilization. Safe utilization of these tools in lab will be a hands-on experience. Various building materials will be explained and demonstrated throughout this course. Construction techniques and methods will be presented in lecture and performed in each lab.

#### **AGRI 4116 - Sustainable Agrict Internship, 6 Credits**

Level: Lower

This internship is offered to provide students with an experiential learning opportunity in sustainable agriculture practices. Projects may involve vegetable or other crop production, farm animal management, cover crop/green manure trials, vermicomposting, woodlot improvement and other integrative initiatives appropriate to small farms. A planned program of education experiences will then be completed by the student under the supervision of an owner, manager or supervisor in their technical field or professional area. The interns will also be supervised by a faculty member who serves as Internship Coordinator. Written and/or oral reports, along with a journal and/or blog of work activities and experiences, will

be required. Evaluation will be based on the quality of experiences gained from the internship and student work performance.

**AGRI 4900 - Directed Study, 1 to 4 Credits**

Level: Lower

A survey of microorganisms, their structures, physiology, and identification, with the various medical and non-medical implications in our daily lives. Topics include prokaryotic cell structure and function, biochemical processes, physical and chemical factors that affect cell growth, classification and identification, and physical and chemical methods of control. A major portion of the course deals with the pathogenic properties of microorganisms and the body's defense mechanisms including the functions of the immune systems. Laboratory topics include bacterial culture and staining, metabolism and biochemical reactions, physiological characteristics, patient specimen collection and processing as done in a microbiology laboratory and pathogen identification and antibiotic sensitivity determination.

**AGRI 5103 - Sustain Vegetable Prod Tech, 3 Credits**

Prerequisite(s): AGPS 1103 with D or better

Level: Upper

Students will learn how to site, design, and manage a small-scale vegetable farm, using organic or other sustainable practices that support niche-marketing strategies. Particular attention will be paid to crop sequences appropriate for the climates and soils of the Northeastern United States. Students will gain hands-on experience in building soil quality, starting transplants, identifying and managing pests, harvesting and marketing of vegetables. Later in the course, students will work with sustainable winter-production technologies, including passively-heated high tunnels and intensive vegetable production using hydroponic techniques.

**AGRI 6103 - Precision Agriculture, 3 Credits**

Level: Upper

A course designed for students who desire to understand the acquisition and analysis of geographically referenced data for the management of crop production systems. Topics include: mapping, map projections, implementation of global positioning systems, data formats, geographic information systems, grid sampling, soil fertility and physical properties, yield monitoring, variable-rate application, and economics.

**AGRI 7001 - Senior Project Design, 1 Credit**

Prerequisite(s): AGRI 4002 with D or better

Level: Upper

First of a two-semester sequence required for all students earning a Bachelor of Technology in Organic and Sustainable Agriculture. Students will develop a detailed project proposal, including strategic justification, project plan, risk management, resource and costs, and evaluation plans.

**AGRI 8003 - Senior Technical Project, 3 Credits**

Prerequisite(s): AGRI 7001 with D or better

Level: Upper

Students gather and synthesize data according to a project design developed in AGRI 7001. Each student must do library research, a formal oral presentation, project demonstration, and submit a written project report.

**ANIMAL HUSBANDRY/SCIENCE****ANSC 1101 - Calf Management Practices, 1 Credit**

Level: Lower

Replacement rearing is an important enterprise on the modern dairy farm, with the greatest investment of time and money occurring during the first three months of the heifer calf's life. This course will provide the student with a basic understanding of the nutritional, environmental and health challenges a calf must go through during this period. Lab sessions will focus on mastering basic calf care skills including care for the newborn calf, feeding neo-natal calves, weaning practices, diagnostic procedures and biosecurity protocols to address calf health as well as economic comparisons for alternative feeding and housing systems.

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### **ANSC 1201 - Computer Dairy Herd Recrd Mgmt, 1 Credit**

Level: Lower

Using computers to manage dairy herds is essential to maintain and improve herd production and profitability. Today's dairy farmer needs to understand and utilize the powerful computer programs available to organize herd information. This course takes the student through the commonly used computer programs and utilizes actual herd information to allow students to practice using the management tools.

### **ANSC 1204 - Introduction to Animal Science, 4 Credits**

Level: Lower

Course Attributes: Liberal Arts and Science

Survey of the dairy cattle and livestock industry, including beef, sheep, swine, and horses. Topics include breeding and feeding systems, disease control measures, housing and basic management practices; selection of animals for production, market, and breeding; characteristics of the major breeds, economic importance and marketing trends.

### **ANSC 1301 - Manage of the Transition Cow, 1 Credit**

Level: Lower

Management of the transition dairy cow involves care of the pregnant cow from approximately one month pre-partum until about 60 days post-partum when the cow is at or near peak production in the lactation cycle. This course addresses management and monitoring at the herd level as well as at the individual cow level. Recognizing dystocias and abnormalities, calving procedures, fresh cow physical examinations and post calving metabolic disorders and infectious diseases will be discussed. Labs will allow students to perform routine tasks including physical exams, body condition scoring, udder evaluations, collection of milk and blood samples, administration of supportive medications via oral, intramuscular, subcutaneous and intravenous routes. The use of record-keeping systems, protocols and tracking tools will also be included in lectures and labs.

### **ANSC 1402 - Biol & Manag of Prod Qual Milk, 2 Credits**

Level: Lower

This course provides theoretical and hands-on experiences related to the production of quality milk. Emphasis will be placed on the basics of milk production by the cow, assessment of udder health, milking routines and parlor supplies, mastitis and mastitis treatment protocols, milking equipment operation and maintenance, milk inspections, and milk pricing.

### **ANSC 1501 - Herd Health & Lameness, 1 Credit**

Level: Lower

This module will provide students both theory and practical skills in herdsmanhip core competencies. Competencies will include cow handling techniques, lameness detection and treatment, herd health, recognizing diseases, nutrition basics, and cow comfort.

### **ANSC 1601 - Dairy Cow Reproduction Mgmt, 1 Credit**

Level: Lower

This course will provide the student with a basic understanding of reproduction and artificial insemination (A.I.) techniques in dairy cattle. The student will gain an understanding of the anatomy of the bovine reproductive tract through examination and palpation of both slaughterhouse specimens and live palpations. The student will learn to read sire summaries, use linear scoring, apply recordkeeping approaches and analyze herd reproductive performance. Common reproductive diseases will be discussed as well as the latest information on heat detection and synchronization programs. The labs and two required field trips provide individual student A.I. training and practice sessions needed for the National Association of Animal Breeders (NAAB) certification.

### **ANSC 1901 - Introduction to Dairy Science, 1 Credit**

Level: Lower

This one week module was developed to provide workforce development opportunities for the dairy industry in Western New York. This module will provide students both theory and practical skills in dairy industry core competencies.

### **ANSC 2102 - Dairy Cattle Reprod & A.I Tech, 2 Credits**

Prerequisite(s): ANSC 1204 with D+ or better or VETS 3204 with C or better

Level: Lower

This course will provide the student with a basic understanding of reproduction and artificial insemination (A.I.) techniques in dairy cattle. The student will gain an understanding of the anatomy of the bovine reproductive tract through examination and palpation of both slaughterhouse specimens and live animal palpations. The student will learn to read sire summaries, use linear scoring, apply recordkeeping approaches and analysis of herd reproductive performance. Common reproductive diseases will be discussed as well as the latest information on heat detection and synchronization programs. The labs and two required field trips provide individual student A.I. training and practice sessions needed for the National Association of Animal Breeders (NAAB) certification.

**ANSC 2114 - Dom Animal Anat & Phys, 4 Credits**

Level: Lower

Course Attributes: Liberal Arts and Science

This course is a systems approach to the study of anatomy and physiology of common domestic animals, emphasizing Ruminant, Equine, Swine, Canine and Feline as the animal models. The on-line course materials will provide the student with a complete overview of how each body system functions in the maintenance of a normal healthy animal. The on-line course materials will be reinforced in the laboratory where skeletons, models and prosected specimen will allow the student to gain applied perspectives of the gross anatomy and normal physiology. Histologic slides, kodachromes, radiographs and live animals will also be used to enhance student understanding. Computer simulated dissection materials will also be used to provide the opportunity for the students to refine their understanding of the required information.

**ANSC 3003 - Feeds and Nutrition, 3 Credits**

Level: Lower

This course provides the student with an understanding of animal nutrition. Students will learn feeding farm animals for growth, production, and profit, nutrient content and physiological value of feeds; nutrient requirements of farm livestock; physiology of digestion and developing and evaluating rations.

**ANSC 3013 - Animal Disease Control, 3 Credits**

Prerequisite(s): ANSC 1204 with D or better or VETS 3204 with D or better

Level: Lower

Fundamental information on the nature of disease and its control and prevention are studied. Students are introduced to the causes, symptoms, prevention and treatment of common diseases as well as to the life cycles, damage, diagnosis, control and treatment of various internal and external parasites.

**ANSC 3103 - Livestock Mgmt & Production, 3 Credits**

Level: Lower

The course introduces the student to the management and production of assorted species of livestock. Breeds of sheep, beef, and swine will be studied as well as the skills in selecting and judging these species. Feeding and management of each of these species, as well as housing and equipment requirements for animals in specific types of operations will be examined. Students will be introduced to diseases and parasites that may be encountered when managing a species-specific livestock operation. Students will also gain insight into different types of marketing used in livestock production.

**ANSC 3202 - Dairy Management Analysis, 2 Credits**

Prerequisite(s): ANSC 3203 with D or better

Level: Lower

Dairy Management Analysis is an overview of specific subject matter which influences dairy cattle production units today. Subject matter includes dairy records analysis, fresh cow management, heifer and calf management, housing and ventilation, economics, profitability and employee management. Participation in the Northeast Dairy Challenge interscholastic competition or an assigned farm assessment is required.

**ANSC 3203 - Dairy Cattle Production I, 3 Credits**

Prerequisite(s): ANSC 1204 with D or better or VETS 3204 with D or better

Level: Lower

Dairy Cattle Production I is an introduction to specific subject matter which influences cattle production units today. Subject matter includes: on-farm disease control and biosecurity, calf and heifer management, milk letdown and physiology of lactation, udder health, basic herdsman skills and introduction to Dairy Comp 305 record keeping software.

## COURSE DESCRIPTIONS

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### **ANSC 3204 - Dairy Cattle Production III, 4 Credits**

Prerequisite(s): ANSC 1204 with D or better or VETS 3204 with D or better

Level: Lower

Dairy Cattle Production III focuses on dairy farm management analysis to troubleshoot and prioritize production and profitability opportunities. The course includes: developing on-farm observation skills, production records analysis using Dairy Comp 305, monitoring cow and rumen health, nutrition and feeding management and employee management.

### **ANSC 3222 - Dairy Calf Management, 2 Credits**

Prerequisite(s): VETS 1214 with D or better or ANSC 2114 with D or better

Level: Lower

This course will provide the student with a basic understanding of the nutritional, environmental and health challenges a calf must go through from birth to yearling stage. Lab sessions will focus on mastering basic calf care skills. Field trips will be incorporated into the laboratories to expose students to different management approaches including custom calf raisers, and large and small herd replacement enterprises. Students will spend two hours per week practicing calf care procedures.

### **ANSC 3223 - Dairy Calf Management, 3 Credits**

Prerequisite(s): ANSC 2114 with D or better or ANSC 1204 with D or better

Level: Lower

This course will provide the student with a basic understanding of the nutritional, environmental and health challenges a calf must go through from birth to yearling stage. Lab sessions will focus on mastering basic calf care skills. Field trips will be incorporated into the laboratories to expose students to different management approaches including custom calf raisers, and large and small herd replacement enterprises. Students will spend two hours per week practicing calf care procedures.

### **ANSC 4900 - Directed Study, 1 to 4 Credits**

Level: Lower

A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

## **ANTHROPOLOGY**

### **ANTH 1013 - Cultural Anthropology, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

This course promotes understanding of the world's cultures by providing an introduction to cultural anthropology, the study of contemporary cultures worldwide. Case studies are selected for specific ethnographic focus, through which to explore different approaches to life, considering questions of power and inequality, gender, personhood, and religion. The experiences of colonial encounters and internal domination are examined. Issues of development and cultural survival are addressed, as is the relationship of ecology to the social world, including one of the most pressing issues of our time: the management of resources that are held in common and utilized by a group. The aim of this course, ultimately, is to assist students in developing the ability to start thinking like an anthropologist; that is, to approach questions that interest them from an anthropological perspective.

### **ANTH 1113 - Anthropology of Europe, 3 Credits**

Level: Lower

Course Attributes: Liberal Arts and Science

This course will examine diversity in contemporary Europe as the continent struggles to find a collective identity in an evolving global environment. Students will explore the development of the European Union and cultural issues relating to gender, migration, religion, nationalism, crime, and social innovation. Specific attention will be paid to foods associated with different European cultures and to issues related to food allocation.



**ANTH 5113 - Cross-Cultural Encounters, 3 Credits**

Level: Upper

Course Attributes: Gen Ed - Other World Civ

This course develops a framework for cross-cultural literacy - understanding different cultural contexts and the dynamics of cross-cultural communication. Attention is paid to the challenges that might be encountered in multi-cultural environments and how they might be resolved. Leading social, economic, and political institutions of several specific cultures will be examined. The course is writing-intensive and a project is required.

**ANTH 5223 - Archaeology - Cities of Fire, 3 Credits**

Level: Upper

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

The discovery of the buried city of Pompeii in the 18th century gave birth to the modern science of archaeology, and at the same time added greatly to our understanding of Roman civilization. "Cities of Fire" is offered to students enrolled in the study abroad program in Sorrento

**ANTH 5333 - Medical Anthropology, 3 Credits**

Level: Upper

Course Attributes: Liberal Arts and Science

This course will introduce students to the diversity in health seeking practices and beliefs across the globe. Students will learn how to analyze medical practices including biomedicine, as a cultural institution. We will explore how culture shapes our perceptions of what it means to be sick or healthy. This course will provide a context for understanding the way in which culture plays an integral role in understanding, maintaining and restoring health. We will also examine how social structures and cultural misunderstandings can lead to inequalities in health outcomes and healthcare experiences.

**ARCHITECTURE AND DESIGN****ARCH 1013 - Introduction to Design, 3 Credits**

Prerequisite(s): COMP 1503 with D or better \*

Level: Lower

Introductory course designed to acquaint students with how design evolved through the ages as a vehicle for comprehending the world, giving order to it, improving life, and endowing it with symbolic meaning. It studies comparatively many modes of design operations geared toward creating such order and conditioning our experience of the world around us. It introduces the major disciplines that evolved over time and probes their distinct modes of inquiry and underlying bodies of theory as well as their differences and shared concerns. The design fields considered include industrial design, product, furniture, graphic, information design, architecture, landscape architecture, urban and interior design, theater, stage, film, costume, and fashion design, electronic design and the now prevalent digital media. It also touches on design fields with negative associations (such as weapons design), on utopian strands of design, and introduces the recently evolved 'design thinking' with its increasing impact on fields beyond design.

**ARCH 1023 - Construction Technology 1, 3 Credits**

Prerequisite(s): COMP 1503 with D or better and ( MATH 1033 with D or better or MATH 1034 with D or better or MATH 1054 with D or better or MATH 1063 with D or better )

Level: Lower

This course introduces students to the materials, methods and systems commonly used in residential construction. Students will study the inherent qualities of materials and develop an understanding of their use and integration within a residential structure. Students will study the physical properties of the materials as well as how the materials are manufactured to produce a satisfactory product for the construction process.

**ARCH 1184 - Design Fundamentals 1, 4 Credits**

Prerequisite(s): COMP 1503 with D or better \* and ( MATH 1033 with D or better \* or MATH 1034 with D or better \* or MATH 1054 with D or better \* or MATH 1063 with D or better \* )

Level: Lower

An introduction to fundamental design, architectural design drawing and applied drawing techniques. Students are introduced in lecture to design and drawing principles, techniques and conventions used to develop and communicate architectural ideas. Lab assignments

## COURSE DESCRIPTIONS

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emphasize the relationship between drawing and three-dimensional form and space, and include exercises in basic design and model-making. Topics include principles of design and architectural theory, observational sketching, depicting light, texture and depth, analytical drawing, orthographic and paraline projection systems, and professional standards for layout, lettering, use of line weights, and dimensioning of architectural drawings.

### **ARCH 1433 - Furniture & Finishes, 3 Credits**

Prerequisite(s): ( ARCH 1184 with C or better or CIAT 1184 with C or better ) and ( ARCH 1023 with D or better or CIAT 1023 with D or better )

Level: Lower

This survey course examines the selection, specification, composition, manufacture, and application of finishes and materials in interior design and presents an overview of furniture construction, types, planning and selection.

### **ARCH 1443 - Color, Lighting and Acoustics, 3 Credits**

Prerequisite(s): ( ARCH 1433 with C or better or CIAT 1433 with C or better ) and ( ARCH 2394 with C or better or CIAT 2394 with C or better )

Level: Lower

This course is a fundamental course that investigates the properties and principles of basic color theory and its interrelationship with lighting. The focus is on the psychological and physiological effects of color and lighting as they apply to the form, texture, and finish of interior spaces. It also provides a basic understanding of lighting calculations, types of lamps and their uses. Additionally, there will be a segment on calculations related to acoustical performance.

### **ARCH 2014 - Computer Visualization, 4 Credits**

Level: Lower

This is an introductory course that examines the practical and theoretical issues of the computer as a tool for the production of architectural presentations. Technical skills in SketchUp, Revit and Photoshop are learned through tutorials and projects. Students learn to create and execute projects utilizing the computer as an architectural tool through the application of technical skills.

### **ARCH 2123 - Environmental Controls 1, 3 Credits**

Prerequisite(s): MATH 1033 with C or better or MATH 1034 with C or better or MATH 1054 with D or better or MATH 1063 with D or better

Level: Lower

This course introduces the student to the fundamental principles of mechanical, electrical and plumbing (MEP) systems for residential and commercial buildings. MEP system components, their integration into the building, and energy conservation are discussed and illustrated. Students will design various residential systems and will solve problems related to heat loss, fuel usage, fixture quantity, and supply and drain, waste, and vent piping. Evaluation of a student's achievement will be based on examinations, participation in class discussion, homework assignments, and a home heating project.

### **ARCH 2201 - Architectural Comp Graphic App, 1 Credit**

Level: Lower

This course is designed to introduce students to two-dimensional and three-dimensional programs used in the architectural and interior design industries today. It intends to walk students through the basics of Revit and establish a foundation for the future learning of computer applied design. Once a basic understanding of the software environment is established, students will produce a series of architectural documents. These drawings will incorporate Revit as a design, drafting and analytical tool.

### **ARCH 2204 - Interior Design I, 4 Credits**

Prerequisite(s): CIAT 2394 with C or better or ARCH 2394 with C or better

Level: Lower

This studio course emphasizes the design process and space planning for modest size facilities. The students will apply color rendering techniques to present interior design solutions. Students will select appropriate materials for various spaces in accordance with accepted design standards. Design issues such as furniture planning and layouts, application of color, and building code and ADA (American with Disabilities Act)

considerations are included.

**ARCH 2223 - History of Interior Design, 3 Credits**

Prerequisite(s): FNAT 1303 with C or better or COMP 1503 with C or better

Level: Lower

This course is a survey of major historical design periods in interior design from prehistoric to the present. Emphasis is placed on styles and furniture and their relationship to social and political settings, and technological evolution.

**ARCH 2304 - Interior Design II, 4 Credits**

Prerequisite(s): ARCH 2204 with C or better or CIAT 2204 with C or better

Level: Lower

This design course focuses on the development of complex interior space planning for large commercial/public facilities. Problem solving for both individual and collaborative projects are accomplished through various research methods and programming of client needs. Students will refine both manual and computer generated drawing and rendering techniques. An integrative approach to the design process will include technical issues, budgetary concerns, and code compliance. There is a final project in this course.

**ARCH 2394 - Design Fundamentals 2, 4 Credits**

Prerequisite(s): ARCH 1184 with C or better or CIAT 1184 with C or better

Level: Lower

Introductory course designed to expose students to fundamental design skills, 3D problem solving, color theory, perspective drawing and rendering. The course examines specific issues such as format, figure/ground, rhythm, contrast, datum, value, space definition, color theory/rendering, one and two point perspective methods and basic model building.

**ARCH 2433 - Urban Sketching and Journaling, 3 Credits**

Level: Lower

Urban sketching and Journaling is offered to students enrolled at Sant' Anna Institute as part of the study abroad program in Sorrento, Italy. The course is designed to augment the architecture students' experience of their semester abroad, but is also intended for students of the arts, and for any student wishing to develop drawing skills and observational acuity. Emphasis is placed on the fundamentals of drawing as an invaluable tool for seeing, learning, thinking, and communicating. Lectures are centered on the basics of line drawing, perspective, shade and shadow, observational sketching, and note-taking. Lab exercises will capitalize on the unique urban environments of Sorrento and southern Italy. Students are required to keep a running journal of their thoughts and experiences throughout the semester.

**ARCH 3104 - Design Studio 1, 4 Credits**

Prerequisite(s): ARCH 2394 with C or better or CIAT 2394 with C or better

Level: Lower

This is a course that presents students with a systematic approach to architectural design methods. Methods of graphic thinking are introduced as a means of exploring and evaluating issues related to the design process. Architectural form and style are investigated relative to human factors and environmental context. Verbal and graphic communication skills are also refined in the development of student design presentations.

**ARCH 3304 - Construction Technology 2, 4 Credits**

Prerequisite(s): CIAT 1023 with D or better or ARCH 1023 with D or better

Level: Lower

This course is a study of methods, systems, and materials used in the design and construction of commercial buildings. An emphasis is placed on the integration of materials and systems used for foundations, envelope construction, and roof systems. A general study of the International Building Code is included with respect to public commercial structures. Various two-dimensional and three-dimensional computer applications are used throughout the course.

**ARCH 4003 - Professional Practice 1, 3 Credits**

Prerequisite(s): ARCH 3304 with D or better or CIAT 3304 with D or better

Level: Lower

This course is designed to provide the future practitioner with a comprehensive study of the business and practice of architecture and design. Emphasis will be placed on practical skills and usable information that will enhance the students' ability to function within the modern

## COURSE DESCRIPTIONS

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office environment. The study of construction contract documents and estimating techniques will provide the platform for more in-depth discussion of the design professions and/or related disciplines.

### **ARCH 4013 - Municipal Codes & Regulations, 3 Credits**

Prerequisite(s): ARCH 3014 with C or better or CIAT 3014 with C or better

Level: Lower

This course covers the municipal code review process and definition of model building and zoning codes. The course emphasizes use and occupancy, special use and occupancy, building heights and areas, types of construction, fire-resistive construction, interior finishes, fire-protection systems, means of egress, accessibility, interior environment, energy efficiency, exterior walls, roof assemblies, structural provisions, building materials and systems and existing structures as described in the Building Code of New York State.

### **ARCH 4101 - History of Italian Architectur, 1 Credit**

Level: Lower

This course is a survey of the history of Italian architecture. It is in conjunction with the Department of Architecture and Design trip to Italy. Emphasis is placed on buildings and cities they will see on the trip.

### **ARCH 4304 - Design Studio 2, 4 Credits**

Prerequisite(s): ARCH 3104 with C or better or CIAT 3104 with C or better

Level: Lower

The course concentrates on architectural problem-solving methods for a variety of project types and sizes. Students working individually and in teams explore and document their work through sketches, study models and preliminary working drawings. The students are encouraged to develop a professional approach to investigating, analyzing and solving architectural problems. This is the culminating course of the two-year degree program as well as a stepping-stone to the upper level studio courses in the four-year degree program.

### **ARCH 4403 - Computer Visualization, 3 Credits**

Prerequisite(s): ARCH 2201 with D or better or CIAT 2201 with D or better

Level: Lower

This is an advanced course that examines the practical and theoretical issues of the computer as a tool for the production of architectural presentations. Technical skills in SketchUp, Revit and Photoshop are learned through tutorials and projects. Students learn to create and execute projects utilizing the computer as an architectural tool through the application of technical skills.

### **ARCH 4433 - Architectural Photography, 3 Credits**

Level: Lower

Architectural Photography is a course taught in conjunction with the Junior Year Study Abroad Program in Sorrento, Italy. It is designed for the novice photographer and is intended to give the students the knowledge and skills necessary to effectively document the architecture seen while traveling throughout the semester. The course will introduce the student to the fundamentals of digital photography and digital imaging. Students enrolled in the course will need a reasonably good digital camera, a laptop computer and image-editing software.

### **ARCH 4900 - Directed Study, 1 to 4 Credits**

Level: Lower

A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

### **ARCH 5001 - Hist of Arch & Urb Fm-Sty Abrd, 1 Credit**

Level: Upper

This course is a survey of the history of trends in western architecture and urban form. It is in conjunction with an Architecture and Design department trip. Emphasis is placed on buildings and cities they will see and visit on the trip.

### **ARCH 5306 - Design Studio 3, 6 Credits**

Prerequisite(s): ( ARCH 1184 with B or better or CIAT 1184 with B or better ) and ( ARCH 2394 with B or better or CIAT 2394 with B or better ) and ( ARCH 3104 with B or better or CIAT 3104 with B or better ) and ( ARCH 4304 with B or better or CIAT 4304 with B or better )

Level: Upper

This studio is designed to develop the student's ability to apply and integrate architectural principles and methods to design of buildings and spaces. The exploration and study of architectural design and technology makes connections between theory and practice through the design of buildings and environments that explore the relationship between architecture, building systems, and human experience. Students will be expected to progress through the schematic design and design development phases of short-term and extended design projects.

**ARCH 5503 - Sustainable Building Design, 3 Credits**

Prerequisite(s): ( ARCH 2123 with D or better or CIAT 2123 with D or better ) and ( ARCH 3304 with D or better or CIAT 3304 with D or better )

Level: Upper

Sustainable Building Design is a relatively new approach to architectural design which evolved from solar design solutions of the past three decades. In this field, architects attempt to design structures that have a minimum negative impact on the natural world. In this course students concentrate on five major area of sustainability including energy, air, water, materials, and site planning. Students will produce a final design project that integrates the five major areas discussed.

**ARCH 5900 - Directed Study, 1 to 6 Credits**

Level: Upper

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**ARCH 6306 - Design Studio 4, 6 Credits**

Prerequisite(s): ARCH 5306 with C or better or CIAT 5306 with C or better

Level: Upper

This studio course concentrates on developing the problem solving skills associated with the design of adaptive reuse and historic preservation building projects. Projects will involve the gathering of information about the historical evolution of the building, the documentation and analysis of the building's structural and material conditions, the understanding of the building's relationship to its wider physical and cultural environment and making appropriate design decisions in respect to new uses. Over the course of the semester, students will creatively synthesize their research, building and site with new program requirements into schematics and design development proposals. Sustainability, standards for documentation of as-built conditions, architectural styles, identifying architectural character, historic construction technology and materials will be addressed.

**ARCH 6406 - Studio Sorrento, 6 Credits**

Prerequisite(s): ARCH 5306 with C or better or CIAT 5306 with C or better

Level: Upper

Studio Sorrento is intended solely for students enrolled in the Junior Year Study Abroad Program in Sorrento, Italy. The course will be structured around the experiences, field trips and other learning opportunities during the semester of study in Italy. Particular attention will focus on elements of traditional town design, sustainable building strategies, historic building analysis, and adaptive/sustainable re-use of historic structures. Student work for the semester will include: the development of a journal of site visits and analyses, photographic and metric documentation, reflective writing, and small design projects within the Sorrento environment.

**ARCH 7001 - Studio Thesis Research, 1 Credit**

Prerequisite(s): ARCH 6306 with D or better or CIAT 6306 with D or better

Level: Upper

This course will consist of lectures and associated exercises intended to provide the student with a framework that will support and guide them through the beginning stage of their senior thesis project exploration. Emphasis will be placed on developing research and writing skills that will enhance the student's ability to select an acceptable thesis project and site, and develop a program based on a given set of requirements.

**ARCH 7306 - Design Studio 5, 6 Credits**

Prerequisite(s): ARCH 6306 with C or better or CIAT 6306 with C or better

Level: Upper

## COURSE DESCRIPTIONS

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This studio focuses on the design of buildings and places in an urban setting that require an intense concentration of support systems. The course exploration and study of architectural design, technology and planning principles is designed to bridge the gap between architectural theory and practice through the design of structures and places for human use and inspiration. Students will be expected to progress through the schematic design and design development phases of short-term and extended design projects. Conventional medial and three-dimensional computer modeling will be used to define, analyze and present solutions to complex architectural problems. Assignments and in-class exercises related to design, theory, technology and criticism will also be used to reinforce topics discussed in class.

### **ARCH 8003 - Professional Practice 2, 3 Credits**

Prerequisite(s): ARCH 3304 with D or better or CIAT 3304 with D or better

Level: Upper

The context within which buildings and spaces are created is rapidly evolving as is the way in which architecture and design is practiced. This advanced course is designed to provide the future practitioner with a comprehensive study of the business and practice of architecture and design. Emphasis will be placed on practical skills and usable information that will enhance the student's ability to function within the design professions and/or related disciplines.

### **ARCH 8306 - Design Studio 6, 6 Credits**

Prerequisite(s): ( ARCH 7306 with C or better or CIAT 7306 with C or better ) and ( ARCH 7001 with S or better or CIAT 7001 with S or better )

Level: Upper

This course is the capstone of the six semester sequence of architectural design studios. Building upon the thesis research completed during the previous semester, students will finalize a design program for their chosen thesis project. They will carry out a comprehensive design development study, present their design solution to a jury of faculty and visiting professionals, and defend the decision making process that gave rise to their design. The student is expected to show competence and care in their technological solutions and in the creation of a livable, efficient, and contextually appropriate structure.

### **ARCH 8716 - Design Studio 7-Thesis Defn'tn, 6 Credits**

Prerequisite(s): ARCH 8306 with B or better or CIAT 8306 with B or better

Level: Upper

This course will consist of lectures and associated projects intended to provide the student with a framework that will support and guide them through the beginning stage of their Bachelor of Architecture thesis project exploration. Emphasis will be placed on developing research and writing skills that will enhance the student's ability to define an acceptable thesis project, develop a program based on a given set of requirements, and select an appropriate project site. The student will complete the Schematic Design of the thesis project for review and approval by the department faculty.

### **ARCH 8733 - Modern Architectural Theory, 3 Credits**

Prerequisite(s): FNAT 5303 with C or better and ( ARCH 8306 with B or better or CIAT 8306 with B or better )

Level: Upper

This seminar introduces the student to theories and criticisms of contemporary architecture from the beginnings of the Bauhaus to the issues of contemporary practice. The course is designed to be interactive and will consist of discussion, writing assignments, in class exercises and presentations. Students, singularly and in groups of two, will have the responsibility of initiating weekly discussion of the assigned readings. In class discourse includes discussion and analysis of the central arguments and conclusions of the theoretical constructs presented in the piece. Students will prepare a term paper from selected readings analyzing the author's position and prepare a response that either supports or opposes the stance. A brief oral presentation will accompany the term paper to engage classmates and invited guests in critical commentary.

### **ARCH 8753 - Advanced Structural Concepts, 3 Credits**

Prerequisite(s): CIVL 5213 with C or better

Level: Upper

This course addresses advanced architectural structures, exterior building envelopes and

production technologies. It explores structural elements and expands to include more complex determinate, indeterminate, long-span, thin shells and tensile systems. Materials covered are; reinforced concrete, steel and contemporary composites. Material performance and detailing of the exterior envelope are emphasized.

**ARCH 8776 - Design Studio 8-Thesis Develop, 6 Credits**

Prerequisite(s): ARCH 8716 with B or better or CIAT 8716 with B or better

Level: Upper

This course is the capstone of the eight semester sequence of architectural design studios. Building upon the thesis research completed during the previous semester in Design Studio 7 - Studio Definition, students will finalize a design program for their chosen thesis project. They will carry out a comprehensive design development study, present their design solution to a jury of faculty and visiting professionals, and defend the decision making process that gave rise to their design. The student is expected to show competence and care in their technological solutions and in the creation of a livable, efficient, and contextually appropriate structure.

**ARCH 8793 - Professional Development, 3 Credits**

Prerequisite(s): ARCH 8003 with C or better or CIAT 8003 with C or better

Level: Upper

This course, offered in the final year, provides the students with practical application of skills developed in their specific major. This directed study provides valuable real-life experience while extending the skills and good-will of the students towards the college and/or local community. The student will be responsible for all aspects of the project for a college or community organization while under the guidance of the curriculum faculty. Internships outside the Alfred community are also an option and will be discussed prior to the student registering for the course.

**ALFRED STUDENT DEV CTR****ASDC 1012 - College and Life Skills\*, 2 Credits**

Level: Lower-Developmental/Remedial Course

Course Attributes: Remedial

This course will assist students in making the transition to college and in completing collegiate work successfully. In this course the student will learn strategies for: making use of campus resources; self-awareness and exploration; academic success; effective communication on a college campus; and management of time, health, and financial resources. Students will read and respond to articles, participate in class discussions, summarize topics verbally or in writing, and complete a short research project.

**ASDC 2011 - Career Exploration & Planning\*, 1 Credit**

Level: Lower-Developmental/Remedial Course

Course Attributes: Remedial

This course will assist students with exploring and selecting a college major and/or career goal. The students will learn a decision making model designed to make appropriate, well-informed career/life choices. The students will engage in a variety of assessments using software programs and self-directed career searches. Students will complete out of class assignments designed to integrate self-awareness with career options and will develop their own marketing materials such as resumes, cover letters, and career portfolios. This is a pass/fail course.

**ASDC 2193 - Intro to Academic Literacy, 3 Credits**

Level: Lower

This course focuses on the continued improvement of literacy skills - reading comprehension skills, reading efficiency and flexibility, critical thinking, development of a college-level vocabulary, and the grammar, writing, and study skills needed for success with college course work. Students may be placed in this course on the basis of their placement test scores or may take it as an elective to expand their basic literacy skill levels.

**AUTOMOTIVE****AUTO 1003 - Introductn to Parts Management, 3 Credits**

Level: Lower

## COURSE DESCRIPTIONS

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The course is designed to teach students the general function and importance of the automotive aftermarket and aftermarket parts supply network.

### **AUTO 1013 - Auto Parts Familiarization I, 3 Credits**

Level: Lower

This course will teach the students to identify components sold in the automotive parts industry. Major automotive systems covered include brake, exhaust, fuel, ignition, and heating and air conditioning.

### **AUTO 1109 - Brakes, Steering & Susp Sys, 9 Credits**

Level: Lower

This course provides a practical understanding of the principles, operation, diagnosis, and repair of suspension, steering, and brake systems. Vehicle alignment, tire balancing, and vibration diagnosis are included. Students will be trained to operate a variety of brake, suspension, and alignment equipment while performing actual repairs, adjustments, and diagnosis. This training will supplement the students' auto education in preparation for entry-level employment.

### **AUTO 1124 - Automotive Welding, 4 Credits**

Level: Lower

This course covers all facets of welding as they apply to the servicing of cars and light trucks. Some methods covered are: stick, oxy-acetylene, MIG, and TIG. The safe use of the cutting torch and plasma cutter and booth time is supplemented by the use of various processes in the actual repair of vehicles and equipment.

### **AUTO 1135 - Bsc Elctrn & Compnt Overhaul, 5 Credits**

Level: Lower

This course is designed to provide instruction in the diagnosis and repair of electrical circuits, charging systems, and starting systems. OHMS law, alternators, and starters will be investigated.

### **AUTO 1149 - Inspec, Main, AC Htng & Cng, 9 Credits**

Level: Lower

This course includes lab application of vehicle exhaust, tires, preventive maintenance, and annual safety inspection checks. Repair techniques to insure driver comfort and engine efficiency through the control of heat are studied as they apply to auto cooling, heating, and air conditioning systems.

### **AUTO 1169 - Tune-Up Elec Controls & Diag, 9 Credits**

Level: Lower

The students will become proficient in diagnostics and repair of ignition systems, fuel systems, charging and starting systems, electrical & computer applications, emission systems, and complete engine diagnostics.

### **AUTO 1219 - Truck Brake, Steer & Sus Sys, 9 Credits**

Level: Lower

This unit of instruction is designed to train high school graduates and adult learners in the service and diagnosis of light truck brake, steering, and suspension systems. Vehicle alignment, tire balancing, and vibration diagnosis are included. Students will be trained to operate a variety of brake, suspension, and alignment equipment while performing actual repairs, adjustments, and diagnosis. This training will supplement the students' truck education in preparation for entry-level employment.

### **AUTO 1224 - Welding, 4 Credits**

Level: Lower

The application of several common welding methods in use in the heavy repair field is covered in this course. Actual welding using arc, gas, MIG, TIG, and spot are practiced in the lab. The safe use of the cutting torch and plasma cutter and booth time" is supplemented by the use of various processes in the actual repair of vehicles and equipment."

### **AUTO 1239 - Trk Insp, Maint, AC, Cng/Htng, 9 Credits**

Level: Lower

This course includes lab application of vehicle preventive maintenance and mandated annual safety inspection. Repair techniques to insure driver comfort and engine efficiency through the control of heat are studied as they apply to the truck cooling, heating and air conditioning



systems. Analyzing how refrigerated cargo is maintained is a part of this course.

**AUTO 1245 - Trk Bsc Elctrns & Cmpnt Ovrhal, 5 Credits**

Level: Lower

This course is designed to provide instruction in the diagnosis and repair of electrical circuits, alternators, distributors, starters, and fuel systems. Basic wrecker operation and the use of manuals and computer information services are also included.

**AUTO 1306 - Rust Repair, 6 Credits**

Level: Lower

Encompasses the causes, repair, and prevention of rust formation and develops an awareness in the student that it is his/her ethical duty to make rust repairs properly and economically.

**AUTO 1313 - Wrecker Operation & Estimating, 3 Credits**

Level: Lower

This course provides instruction and practical experience in wrecker operation including hook-ups, winching, dolly use, wheel lifts, and safety. It includes instruction and practical experience in auto body damage estimate writing and analysis.

**AUTO 1326 - Body Welding, 6 Credits**

Level: Lower

This course covers welding methods used for securing body sheet metal including the thinner, high-strength, low alloy steels. Some of the methods covered in depth are: arc, oxy-acetylene, MIG, and TIG welding. Emphasis is placed on proficiency in repairing steels found in panels and vehicle frames, the use of heat as a straightening medium is investigated, and choosing welding equipment for a body shop, sheet metal fabrication and fuel tank repairs are included.

**AUTO 1343 - Refinishing Basics, 3 Credits**

Level: Lower

Develops in the student the basic skills of the refinishing industry and provides the technical knowledge of different types of finishes as well as the sequence of foundation coats.

**AUTO 1344 - Recondtngg & Mechncl Componts, 4 Credits**

Level: Lower

Designed to acquaint trainee with the proper process of reconditioning a vehicle before customer delivery. Students will learn how to remove and install seat upholstery as well as interior trim panels and hardware.

**AUTO 2003 - Auto Parts Familiarization II, 3 Credits**

Level: Lower

This course will teach the students to identify components sold in the automotive parts industry. Major automotive systems covered include engine components and transmissions.

**AUTO 2013 - Cataloging and Pricing, 3 Credits**

Level: Lower

The course is designed to teach students the basic format components in most aftermarket catalogs including the contents, application sections and illustrations. The course will also teach students how to obtain correct information from a customer, and as economically as possible, provide assistance.

**AUTO 2169 - Truck Gasoline Engine Tune-up, 9 Credits**

Level: Lower

The students will become proficient in diagnostics and repair of ignition systems, fuel systems, charging and starting systems, electrical & computer applications, emission systems, and complete engine diagnostics.

**AUTO 2309 - Brakes, Susp & Structrl Anlys, 9 Credits**

Level: Lower

This unit of instruction is designed to train high school graduates and adult learners in the service and diagnosis of automotive brake and suspension systems as they relate to collision repair. Vehicle alignment, tire balancing, and vibration diagnosis are included. Students will be trained to operate a variety of brake, suspension, and alignment equipment while performing actual repairs, adjustments, and diagnosis. In addition, identification and analysis of structural damage, as well as frame and body measuring techniques are covered. This training will supplement the students' autobody education in preparation for entry-level

## COURSE DESCRIPTIONS

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employment.

### **AUTO 2365 - Chassis Electrical, 5 Credits**

Level: Lower

This unit of instruction is designed to enable trainees to become proficient in chassis electrical testing, repair, and component replacement.

### **AUTO 2503 - Prev Maint for Hvy Tk & Diesel, 3 Credits**

Level: Lower

This course is designed to teach scheduled preventive maintenance procedures as they apply to trucks and heavy equipment. Vehicle system checks include air brakes, tires, critical fluids and lubrication points. Training is focused on ensuring safety and reliability between scheduled Preventive Maintenance checks.

### **AUTO 3003 - Auto Body & Related Parts, 3 Credits**

Level: Lower

This course familiarizes students with auto body parts, construction, nomenclature, paint and materials. Students also learn about body panels, interior trim, and other dealer items in the auto body field. Safety issues will also be addressed.

### **AUTO 3013 - Auto Parts Management I, 3 Credits**

Level: Lower

This course provides instruction and practical application of the various aspects of managing an auto parts sales business. Students will learn how to obtain the current information from technicians and retail customers in dealership operations. Students will also develop an insight into employers' expectations of a salesperson and expert counterperson.

### **AUTO 3023 - Computer Appltn in Parts Mgmt, 3 Credits**

Level: Lower

In this course the students will define and demonstrate the functions of computer hardware, printer and software used in automotive parts management. Students will apply this knowledge both in a simulated classroom environment and in the campus auto parts store.

### **AUTO 3409 - Engine Service, 9 Credits**

Level: Lower

Theory of operation and repair procedures of gasoline engine valve systems, crankshaft and bearings, connecting rods, cylinders, and pistons, diagnosis of engine malfunctions repair procedures, cooling system repairs and diagnosis, cylinder boring, piston pin fitting, connecting rod reconditioning, valve guide resizing and replacement, valve seat replacement, and other machine work and service procedures.

### **AUTO 3429 - Adv Elctrn & Engine Perfmnc, 9 Credits**

Level: Lower

Lecture sessions cover most areas of the automobile except engine and drive train repairs. Designed to update and bring together earlier training with emphasis on diagnosing sophisticated automotive electrical, drivability and emission-related problems. This is an extremely critical area with enhanced inspection programs and OBDII systems.

### **AUTO 3504 - Motorsport Fabrication I, 4 Credits**

Level: Lower

This course is designed to teach the student the fundamental skills of complete chassis and roll cage fabrication. Major topics include principles of layout, bending, bead rolling, riveting and welding processes. Laboratory exercises emphasize technique and skill development to build race cars.

### **AUTO 3506 - Introduction to Motorsports, 6 Credits**

Level: Lower

This course is designed to teach the student the fundamental skills of team organization and management. Major topics include introduction to motor sports, team structure, budgeting and finance. Laboratory exercises emphasize technique and skill development for success at the track. A sponsorship proposal is developed by each student.

### **AUTO 3514 - Racing Suspension Dynamics, 4 Credits**

Level: Lower

This course is designed to teach the student advanced skills in race car chassis. Major topics include principles of suspension set-up, development and weight transfer. Laboratory

exercises emphasize technique and skill development in modified suspension and steering geometry to build race cars to meet different track demands.

**AUTO 3524 - Hgh Prfrmnce Tune-up/Electrnics, 4 Credits**

Level: Lower

This course is designed to teach the student the advanced skills of tuning the race car for optimum performance at the track. Major topics include principles of handling modified race fuels and modified delivery. Laboratory exercises emphasize techniques and skills to modify fuel and ignition systems.

**AUTO 3534 - Hgh Permnce Sterng/Bks/Chasis, 4 Credits**

Level: Lower

This course is designed to teach the student the formulas and concepts of race car brakes and steering. Major topics include the principles of modifying chassis, brakes, and steering. Laboratory exercises emphasize technique and skill development in the different modified demands.

**AUTO 3535 - Hgh Prfrmnce Engine Building, 5 Credits**

Level: Lower

This course is designed to teach the student the advanced skills for reconstruction of high performance engines. Major topics include modified engine building and dynamometer testing. Laboratory exercises emphasize technique and skill development in engine assembly and dynamometer testing.

**AUTO 3544 - Motorsports Aerodynamics, 4 Credits**

Level: Lower

This course is designed to teach the student the fundamental principles of aerodynamics for racing and performance cars. Major topics include principles of aerodynamic effects on braking, handling, lift and drag coefficient. Laboratory exercises emphasize technique and skill development to build race cars.

**AUTO 3545 - Motorsport Fabrication II, 5 Credits**

Level: Lower

This course is designed to teach the student the advanced skills of complete chassis, cage, and suspension fabrication. This course and its laboratory exercises evaluate the actual process of fabricating a complete racecar.

**AUTO 3609 - Heavy Duty Drive Train, 9 Credits**

Level: Lower

This course consists of the service and repair of heavy duty clutches, transmissions, drive line and rear axle, leaf, torsion bar, and air suspensions, the alignment of front and rear axle, also alignment of trailer suspension and on-vehicle tire balancing. This will include Eaton and Meritor clutches, Mack and Eaton transmissions, and Meritor, Eaton and Mack rear axles. Also covered are Road Ranger auto shift transmissions.

**AUTO 3623 - Air Brake Service, 3 Credits**

Level: Lower

This course consists of maintenance and repair of air brake systems including compressors, valves, tubing, and circuitry. This course will also include troubleshooting of foundation brakes and related components. Also covered is air ABS brake components, operation and troubleshooting.

**AUTO 3649 - Diesel Engine Service, 9 Credits**

Level: Lower

This nine credit hour course covers the procedures needed to understand, test, repair, and overhaul diesel engines and their related components. Major emphasis is placed on the mid-range and heavy duty diesels of the following makes: Cummins, Caterpillar, Detroit Diesel, Mack, John Deere, and Navistar. Covered is the use of special tools and equipment necessary to troubleshoot, maintain, and overhaul these engines and their related components.

**AUTO 3809 - Inspec, Gen Alignment & AC, 9 Credits**

Level: Lower

Includes lab application of body panel alignment and mandated annual safety inspection, repair techniques to insure customer satisfaction with component fit and operation, keeping customer safety in mind when components are replaced, and techniques to insure customer

## COURSE DESCRIPTIONS

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comfort and engine efficiency through control of heat as they apply to auto cooling, heating and air conditioning systems.

### **AUTO 3819 - Auto Body Skls/Computrzed Est, 9 Credits**

Level: Lower

Includes the different states of repair: metal analysis, metal straightening, filling and metal finishing, glass replacement, alignment problems, fender and door replacement, any and all small, quick, one or two day jobs. Also includes how to make manual and computerized estimates.

### **AUTO 4013 - Auto Parts Inventory Control, 3 Credits**

Level: Lower

In this course the student will learn about the various types of inventory controls available to the automotive and related parts replacement fields. These controls include balance versus acquisition costs, computerized management systems, and inventory balance.

### **AUTO 4023 - Manufacturer Catalog & Pricing, 3 Credits**

Level: Lower

The course is designed to teach students the basic format components in most manufacturer's catalogs, including the cover, contents, applications, sections, and illustrations. The course will introduce students to the process of obtaining correct information from a customer, as economically as possible, and provide assistance.

### **AUTO 4033 - Auto Parts Management, 3 Credits**

Level: Lower

This course familiarizes the student with the many aspects of managing a parts store. Areas covered are management responsibilities, individual development, steps in building a successful team and objectives of the management team.

### **AUTO 4363 - Heavy Duty Elec/Hydr Special, 3 Credits**

Level: Lower

This three credit hour course consists of the service and troubleshooting of electrical systems as they pertain to heavy equipment, truck and diesel. This will include series parallel circuits including 12 and 24 volt systems. Included in this course is the service and troubleshooting of hydraulic systems as found in heavy equipment, truck and diesel. This will include pumps, valves, actuators, accumulators and other related components in today's hydraulic systems.

### **AUTO 4439 - Shop Management & Enhanced Sys, 9 Credits**

Level: Lower

This course will provide insight into other aspects of the automotive trade. Covered in shop management is repair order writing, duties of a shop adviser, customer relations, customer communications, questioning and follow-up, estimating repair costs, checking for recalls, searching for technician service bulletins, researching new product information, motorist's bill of rights, lemon laws and understanding the nature of the automotive business and reviewing Hybrid vehicles information. The lab portion allows the student to perform as a service manager in one of our many automotive shops. Work scheduling, quality control, maintenance, and record keeping are stressed as part of this program.

### **AUTO 4449 - Drive Train Service, 9 Credits**

Level: Lower

Study and actual repair of standard, automatic, and automatic transmissions and transaxles with emphasis on overdrives and electronically controlled units. Full coverage of clutches, axles, drivelines, C-V joints, and 4 x 4 transfer cases, as well as open, limited-slip, and front drive differentials. Extensive hands-on work in a busy line shop" situation. This is a seven and one-half (7 1/2) week course."

### **AUTO 4629 - Major Refinishing, 9 Credits**

Level: Lower

This course is designed to further the student's knowledge and practical experience in the use of painting and refinishing equipment, blending paints, metallic finishes, and hard to match colors, correcting paint failures, custom refinishing and how to solve their problems.

### **AUTO 4639 - Major Collision Repair, 9 Credits**

Level: Lower

Provides instruction in the repair procedures of vehicles considered by appraisers to be totals, or near totals. Study and repair of frame and uni-body damage, suspension repairs.

This includes computerized measuring systems, plastic welding, use of structural adhesives, and complete vehicle refinishing.

**AUTO 4669 - Diesel Fuel System Service, 9 Credits**

Level: Lower

This nine credit hour course is intended for heavy equipment, truck and diesel mechanic majors. Coverage will include the fundamentals of diesel fuel systems, both mechanical and computer-controlled will be covered. Engine tune-up procedures, and diesel fuel system troubleshooting and computer usage will be included. Injection pumps, governors, injectors, emission control devices, automatic advance units and transfer pumps of the following systems will be covered: American Bosch, Caterpillar, Detroit Diesel, Cummins and Navistar.

**AUTO 4900 - Directed Study, 3 to 9 Credits**

Level: Lower

A capstone course which provides an integrative experience in applying the knowledge and skills of earlier course work, with particular emphasis on furthering their in depth skills in the contracted area. The student may contract for three to nine hours of independent study through an arrangement with the instructor and approval of the department chairman. The chairperson shall be kept informed of the progress of study by the instructor and student. Enrollment is limited in order to allow each student the opportunity to pursue his/her field of special interest.

**BIOLOGY****BIOL 1101 - Topics in General Biology, 1 Credit**

Corequisite(s): BIOL 1104

Level: Lower

A one-credit hour course to supplement the General Biology (BIOL 1104) course for biology majors. The focus of this course is to expand on topics discussed during the lecture/laboratory portions of BIOL 1104 and to discuss current topics of interest to biology students. The format of the course is reading and discussion. Each participant will be responsible for being a discussion leader at least once during the semester. The discussion leader's role is to introduce the topic, provide background information about the subject, and encourage the group to offer comments and ask questions. Topics for discussion may be directly related to lecture material or may originate from current media sources, as long as that topic was already introduced in the BIOL 1104 class lecture or lab and the students have some familiarity with the subjects.

**BIOL 1104 - General Biology I, 4 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course incorporates a survey of molecular, cellular, and hereditary principles. Topics include the chemistry and physics of cellular activities; the ultra-structure of cells, photosynthesis and cellular metabolism; the structure and function of DNA; recent developments in DNA bio-technology; and hereditary aspects of early embryonic development of plants and animals into complex structures (organogenesis).

**BIOL 1114 - Human Anat & Physiology I, 4 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This is a lecture- and lab-based online course that is the first in a two-semester sequence, including laboratory components, that covers the structure and function of the human body. General study covers the organization, covering, support, and movement of the body. Topics include an orientation to the human body, chemistry of life, cells and tissues, and the integumentary, musculoskeletal, nervous, and sensory systems.

**BIOL 1133 - Marine Biology, 3 Credits**

Level: Lower

Course Attributes: Liberal Arts and Science

This course focuses on the biology of organisms residing in the sea, from the diversity of planktonic communities to marine megafauna, taking into consideration the ecological principles that govern marine life. The course aims to provide a solid educational background in basic and applied marine biology. Emphasis will be placed on marine environment issues and the adaptive and evolutionary mechanisms of organisms that allow them to occupy

## COURSE DESCRIPTIONS

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marine habitats. In particular, the Mediterranean Sea will play a central role in the course subjects, profiting from the availability of unique ecosystems and a nearby renowned marine research institute to conduct thematic field trips and practical tutorials.

### **BIOL 1223 - Introduction to Forestry, 3 Credits**

Level: Lower

Course Attributes: Liberal Arts and Science

This course is designed to familiarize students with the sustainable management of New York hardwood forests. Students are introduced to the history of forests and forestry practices in North America and New York State, as well as basic tree biology, silvicultural systems, and forest management. Major emphases are placed on practical management strategies for maintaining and developing wood lots and farm forests for a variety of desired outcomes, including lumber, fuel, aesthetics, erosion control, and wildlife habitat. The financial aspects of various forestry strategies also are discussed. As part of the practical component of the course, students will be required to complete a detailed forest management plan.

### **BIOL 1304 - Botany, 4 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

Each of us is intimately involved with plants. We wear them, ingest them, exchange gas molecules with them, live under them, etc. In this course students will develop knowledge of plant morphology (form) and function that later enhances their lives. Topics include the study of human food, ornamental plants, feed, forestry, and any other use of plants to sustain life on the planet Earth or provide other ecosystem services. The laboratory portion of the course includes field ecology and classification of important plant groups in addition to morphological and anatomical study of the major plant organs. Use of the laboratory, the college farm, field trips, and the plant science greenhouse integrates various teaching methods for the above subjects.

### **BIOL 1404 - Anatomy and Physiology I, 4 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is the study of the gross and microscopic anatomy of various human systems, emphasizing how structure facilitates function. The areas emphasized are; cells, tissues, and the integumentary, skeletal, muscular, and nervous systems and their organs. Various sense organs are investigated in connection with the nervous system.

### **BIOL 2111 - Biological Sciences Seminar, 1 Credit**

Prerequisite(s): ( BIOL 2204 with C or better and BIOL 1104 with C or better and CHEM 1984 with C or better ) or ( CHEM 1114 with C or better and CHEM 2124 with C or better )

Level: Lower

This course is intended for students typically in their fourth semester of the two-year Biological Sciences curriculum. The course is designed to prepare the student for transfer to a four-year institution and/or enter the workforce. Students are introduced to the theoretical and practical aspects of preparing and delivering a full-feature (40-45 minute length) presentation on a given topic within the realm of a biological discipline.

### **BIOL 2204 - General Biology II, 4 Credits**

Prerequisite(s): BIOL 1104 with D or better

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

A continuation of BIOL 1104 (General Biology I), with emphasis on animal and plant systematics, evolution and ecology. Laboratory topics include the study of the following mammalian organ systems: digestion, respiration, circulation, homeostasis, reproduction, chemical and nervous control, and musculoskeletal structure and function. Lecture topics include systematics, evolution, ecosystems, and bioenergetics, including human impacts on the environment.

### **BIOL 2214 - Human Anat & Physiology II, 4 Credits**

Prerequisite(s): BIOL 1114 with C or better or BIOL 1404 with C or better

Corequisite(s):

Level: Lower

Course Attributes: Liberal Arts and Science

The second in a two-semester Internet-based course sequence, including laboratory

components, that covers the structure and function of the human body. General issues include the maintenance of the human body, pregnancy, human development and heredity. Topics include the endocrine, blood, cardiovascular, lymphatic, immunity, respiratory, digestive, urinary, and reproductive body systems.

**BIOL 2301 - Human Biology Laboratory, 1 Credit**

Prerequisite(s): BIOL 2303 with D or better \*

Level: Lower

Course Attributes: Liberal Arts and Science

This course is a group of laboratory exercises to aid in the study of human systems and their physiology. The laboratory sessions are designed to provide students with a basic understanding of the structure and functions of cells, tissues and organ systems. The goals of the course are to promote an appreciation for the remarkable complexity of our bodies; to develop a proficiency in the use of laboratory equipment and the proper handling of materials, and to foster the development of self-sufficiency in the conduct of laboratory experiments and observations.

**BIOL 2303 - Human Biology, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

An introduction study of human systems and their physiology. Included in the course are examination of how the body normally functions at the cellular, tissue, organ system levels. Topics will include basic chemistry, cell structure and biochemistry, digestion, circulation and blood, immunity, respiration, excretion, nervous integration, senses, endocrine system, and reproduction. Sexually transmitted diseases also will be discussed. Students cannot receive credit for BIOL 2303 if BIOL 1404 or BIOL 1114 is concurrently or previously taken.

**BIOL 2504 - Anatomy & Physiology II, 4 Credits**

Prerequisite(s): BIOL 1404 with D or better

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is a continuation of BIOL 1404. It is a study of the gross and microscopic anatomy of various human systems, emphasizing how structure facilitates function. The areas emphasized are the endocrine, respiratory, reproductive, cardiovascular, urinary, lymphatic, immune, and digestive systems.

**BIOL 2633 - Histotechniques, 3 Credits**

Prerequisite(s): BIOL 1104 with D or better or BIOL 1404 with D or better or BIOL 1114 with D or better or ANSC 1214 with D or better or VETS 2014 with D or better

Level: Lower

An applied and theoretical technology course which provides instruction and hands-on experiences in the preparation of tissues for microscopic examination by paraffin, and frozen section and smear techniques. Normal and diseased animal and plant tissues will be used to provide the students an opportunity to use a variety of techniques involved in processing tissues. Tissue identification and classification will be discussed as it relates to preparation procedures. Care, maintenance, and use of instrumentation in tissue preparation will be stressed. One-hour lecture and 2 two-hour laboratories per week with significant additional supervised time spent in the lab by students.

**BIOL 2703 - Topics in Tropical Ecology, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

An introduction to the natural and human ecology of Central American rainforests, coastal habitats, and near-shore environments. Major topics of study include rainforest, mangrove, and coral reef structure and biodiversity, ethnobotany, environmental impacts of plantation monoculture, and models of sustainable agriculture. Ecological principles will be observed in a variety of settings in the highland and lowland forests and coastal environments of Costa Rica.

**BIOL 2801 - Environmental Science Lab, 1 Credit**

Level: Lower

Course Attributes: Liberal Arts and Science

A series of field-oriented laboratory experiences involving analyses of various local ecosystems. Topics to be stressed include identification of organisms, use of environmental monitoring equipment, and collection and interpretation of field data.

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### **BIOL 2803 - Environmental Science, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is an introduction to the science of ecology and the interrelationship between humans and their environment. The physical environment of the Earth's climate, geographic and geologic systems, and the cycling of minerals and water are described. The biology of populations, species, ecosystems and biomes section deals with organisms and their interactions with one another and their environment is discussed. The world's human populations, and their role in the ecosystems is investigated including the history of human populations, current demographic trends, and projected future population parameters. The impacts of human populations on the environment are covered as well.

### **BIOL 4254 - General Microbiology, 4 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

Bacteria and their related infections are emphasized along with viruses, rickettsia, fungi, and other disease causing agents. The primary emphasis is the terminology related to microbial agents, clinical diagnosis, laboratory detection, disease and control of microorganisms. Other topics include bacterial reproduction, morphology, structures, nomenclatures, physiology, genetics, diagnostic bacteriologic media and the immune system.

### **BIOL 4401 - First Aid, 1 Credit**

Level: Lower

An introductory course dealing with the ways to handle first aid situations. Included are measures to be taken in treating shock, bleeding, fractures, poisonings, and drug overdoses. Emphasis is placed on preparing individuals to handle common household emergencies, and recognizing and treating cardiac arrest and choking victims. Completion of the course leads to certification in standard first aid and cardiopulmonary resuscitation.

### **BIOL 4403 - Pathophysiology, 3 Credits**

Prerequisite(s): ( BIOL 2504 with C or better \* or BIOL 2214 with C or better \* ) and MEDR 1132 with C or better \*

Corequisite(s):

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This is a lecture-based online course that includes the study of disruptions of normal physiology, processes that bring about these disruptions, and various ways in which the disruptions manifest themselves as symptoms, signs, physical findings, and laboratory findings. The course will explore the pathophysiology of genetic diseases, hypersensitivity and autoimmune diseases, infectious diseases, neoplasia, diseases due to physical and chemical agents, disturbances of fluid and electrolyte balance, and endocrine dysfunction.

### **BIOL 4404 - Emergency Medical Technology, 4 Credits**

Level: Lower

This course requires active participation in the field of Emergency Medical Services (ambulance, rescue squad, hospital, etc.) and permission of the instructor. The fundamentals of emergency medical care are presented in accordance with the New York State EMS Code. Emphasis is placed on the theory and practice of pre-hospital emergency care. Successful completion of the course requires attendance at all sessions and achievement of a passing grade in all evaluation phases as required by the New York State Department of Health. Learning experiences are acquired in both the classroom and hospital emergency departments. Satisfactory completion of all requirements will lead to certification as an Emergency Medical Technician."

### **BIOL 4900 - Directed Study, 1 to 4 Credits**

Level: Lower

Elective courses for students interested in advanced work in the biological sciences on problems in their special field of interest. Enrollment limited in order to allow each student the opportunity to pursue his/her field of special interest.

### **BIOL 5223 - Ecology, 3 Credits**

Prerequisite(s): ( BIOL 1104 with D or better and BIOL 2204 with D or better ) or ( BIOL 1304 with D or better and BIOL 2204 with D or better )

Level: Upper



Course Attributes: Liberal Arts and Science

The course will analyze the biotic and abiotic factors that influence or limit distributions of organisms. Emphasis will be placed on population and community biology, including evolution, genetics, behavior, models of population growth, species interactions and community structure. Metabolic and energy relationships at the ecosystem level also will be explored. Examples will be drawn from all Domains and Kingdoms of organisms. Students will be required to evaluate the role of a specific "Keystone" species in an ecosystem and how the loss of that species impacts biodiversity in the ecosystem."

**BIOL 5254 - Principles of Microbiology, 4 Credits**

Prerequisite(s): ( BIOL 2204 with C or better or BIOL 2504 with C or better ) or ( VETS 2013 with C or better or VETS 2014 with C or better or VETS 1203 with C or better or VETS 1214 with D or better ) or ( BIOL 1104 with C or better or BIOL 1404 with C or better )

Level: Upper

Course Attributes: Liberal Arts and Science

A survey of microorganisms, their structures, physiology, and identification, with the various medical and non-medical implications in our daily lives. Topics include prokaryotic cell structure and function, biochemical processes, physical and chemical factors that affect cell growth, classification and identification, and physical and chemical methods of control. A major portion of the course deals with the pathogenic properties of microorganisms and the body's defense mechanisms including the functions of the immune systems. Laboratory topics include bacterial culture and staining, metabolism and biochemical reactions, physiological characteristics, patient specimen collection and processing as done in a microbiology laboratory and pathogen identification and antibiotic sensitivity determination.

**BIOL 6403 - Advanced Pathophysiology, 3 Credits**

Prerequisite(s): BIOL 2504 with D or better or BIOL 2214 with D or better

Level: Upper

Course Attributes: Liberal Arts and Science

This internet-based course examines abnormal human physiology in a clinical context, with intent to develop specific intellectual skills related to nursing and other allied health professions. Pathophysiology is considered from a systemic perspective, with emphasis given to cellular abnormalities, disruptions of homeostasis, infectious disease, inflammation, and disorders of the blood, immune, cardiovascular, respiratory, digestive, endocrine, neurological, musculoskeletal, integumentary, renal, genitourinary, and reproductive systems. The course concludes with case study presentations to allow students to derive and discuss correlations among clinical healthcare or other related disciplinary settings.

**BIOL 6534 - Genetics, 4 Credits**

Prerequisite(s): BIOL 1104 with C or better or BIOL 1304 with C or better or BIOL 1404 with C or better or VETS 1214 with C or better

Level: Upper

A study of heredity and the gene from the perspective of the individual, the cell, and the population. The human species will be emphasized along with recent advances in biotechnology. Laboratory work includes Drosophila breeding, polymerase chain reaction, and DNA electrophoresis.

**BUILDING CONSTRUCTION****BLCT 1012 - Blueprint Reading - Part I, 2 Credits**

Level: Lower

This course is an introduction to the different types of plans and how they represent a finished building. Shows the parts of blueprints in detail including symbols, the title block, and grid lines. Introduction to site plans.

**BLCT 1016 - Operations - Part I, 6 Credits**

Level: Lower

This course covers the use and maintenance of the most commonly used machines on a construction site. The course emphasizes safe operation as well as basic operating techniques for each machine. This will include safe setup of machines as well as excavating foundations, septic systems, driveways, etc.

**BLCT 1021 - College & Life Skills, 1 Credit**

Level: Lower

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This course is designed to help the student be successful at college and beyond. General topics will be presented to aid in student success and familiarization with campus life, such as career exploration, work habits, study habits, and critical thinking.

### **BLCT 1022 - Wood Fabrication Technology I, 2 Credits**

Level: Lower

This course introduces hand and power tools. Skills are developed through practical experience in tool usage through a series of required projects. Students will learn hand tool skills by completing a series of wood joints using chisels, planes, handsaws, and layout tools. Students will expand on these skills while building two shop projects. One project using only hand tools and the other project introducing them to stationary power tools, usage, setup and safety. Power tools used include: table saws, radial arm saws, jointers, planers, band saws, drills, and sanders.

### **BLCT 1023 - Construction Essentials I, 3 Credits**

Level: Lower

This course provides the student with an introduction to foundation layout, to blueprints, and light commercial construction. Course content includes applicable terminology, reading construction drawings to interpret dimensions, building layout, foundation layout, and light commercial building techniques.

### **BLCT 1024 - Construction Essentials II, 4 Credits**

Level: Lower

This course provides students with a basic knowledge of residential floor and wall framing and introduces them to codes relevant to these systems. The course content includes applicable terminology, plan reading necessary for layout, and instruction in framing conventional floor and wall systems. Units also included are sheathing materials and installation, insulation products with reference to energy code and installation, roofing materials, and hand tool/power hand tool safety.

### **BLCT 1031 - Identification of Heavy Equip, 1 Credit**

Level: Lower

Introduces the ten most used pieces of heavy equipment such as dump trucks, backhoes, and bulldozers. Describes the functional operation and uses for each piece of equipment.

### **BLCT 1032 - Equipment Safety - Part I, 2 Credits**

Level: Lower

Provides a comprehensive overview of safety requirements on job sites with emphasis on OSHA and NIOSH requirements. Presents basic requirements for personal protection, safely driving equipment, and HazCom.

### **BLCT 1034 - Workplace Environment & Safety, 4 Credits**

Level: Lower

This course explores the opportunities provided by the various occupations associated with the construction trades and covers the insurance requirements, as well as the risk management and loss control issues in this industry. Much of this course will follow the training requirements set forth by the Occupational Safety & Health Administration (OSHA) Construction Safety Outreach Program including the use of personal protective equipment, electrical safety, fall protection and the safe use of scaffolding and ladders. Excavation safety and materials handling, proper record keeping requirements, and harassment policies will also be covered in this course.

### **BLCT 1043 - Introduction to Earth Moving, 3 Credits**

Level: Lower

Provides a broad introduction to the processes of planning and executing earth moving activities on various types of construction projects. Explains the uses of heavy equipment such as bulldozers, scrapers, excavators, and loaders.

### **BLCT 1044 - Blueprint Reading & Grades-Par, 4 Credits**

Level: Lower

This course is an introduction to different types of plans and how they represent finished grades of buildings. This course will present the parts of blueprints in detail including symbols, the title block, and grid lines. Students will be introduced to site plans and the concept of preparing graded surfaces using heavy equipment. Identification of construction stakes and interpretation of marks on each type of stake will be covered. The process for

grading slopes will also be discussed.

**BLCT 1052 - Soils - Part I, 2 Credits**

Level: Lower

This course provides an overview of soil composition and characteristics. The students will describe different types of soil classification methods and how to use them. The course introduces the concept of soil compaction in highway and building construction.

**BLCT 1053 - Safety & Ident of Hvy Equip, 3 Credits**

Level: Lower

This course introduces the most used pieces of heavy equipment. The course describes the functional operation for each piece of equipment while providing a comprehensive overview of safety requirements on job sites with emphasis on OSHA, and NIOSH requirements. Basic requirements for personal protection, safely operating equipment, and HazCom will be presented.

**BLCT 1054 - Wood Fabrication Technology, 4 Credits**

Level: Lower

This course introduces shop drawings, hand and stationary power tools, covering interpretation, usage, setup and safety. Skills are developed through practical experience in tool usage through a series of required projects. Each student will build projects that will require shop drawing interpretation, setup and safe use of tools and machines, along with the setup and use of jigs.

**BLCT 1062 - Grades - Part I, 2 Credits**

Level: Lower

Introduces the concept of preparing graded surfaces using heavy equipment. Covers identification of construction stakes and interpretation of marks on each type of stake. Describes process for grading slopes.

**BLCT 1104 - Intro to Superv & Management, 4 Credits**

Level: Lower

This course provides students with the necessary tools to pursue an entry level career in construction supervision/management. Topics include but are not limited to safety, contracts, estimating, blue print reading, planning, scheduling, human relations, quality control, cost awareness, documents, negotiations, and problem solving.

**BLCT 1119 - Plumbing Matr & Water Sources, 9 Credits**

Level: Lower

Study of the various materials used in the plumbing, heating, and air conditioning business, i.e., cast iron, steel pipe, copper tube, and pvc plastics plus the appropriate use of each one, and learning the use of basic hand tools and machines used in the plumbing trade.

**BLCT 1129 - Piping Layout & Fixture Instal, 9 Credits**

Level: Lower

Study of applications and pipe sizing of water supply, drains, and vents in residential and small commercial applications; instruction in design, use, and installation of plumbing fixtures and appliances; repair of plumbing components; business practices and blueprint reading.

**BLCT 1132 - Estimating I, 2 Credits**

Level: Lower

This course develops mathematical concepts and application skills necessary for the carpenter and mason to estimate building quantities and associated costs. Topics include arithmetic operations with whole numbers, decimals, and fractional numbers. Formulas for area, volume, board foot quantities, and basic geometry as it pertains to construction will be studied. The quantities estimated are in the framing/sheathing stages of enclosing a building including concrete, brick, and block calculations.

**BLCT 1142 - Masonry I, 2 Credits**

Level: Lower

This course covers basic block laying, sizes, uses, layout, bonding, and foundations. Mortar mixing is studied along with an introduction to concrete footers and footer forming. Foundation drainage and damp proofing are also covered in this course.

**BLCT 1523 - Appl Bsc Sevcman Prin II, 3 Credits**

Level: Lower

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This course is designed to teach students the basic serviceman skills. This is the second course in a three-section program. It is to be reinforced with practical on the job training. This course will be taught within a two-week period.

### **BLCT 2014 - Basic Masonry, 4 Credits**

Level: Lower

This course covers basic block laying, sizes, uses, layout, bonding, footers, and foundations. The various types of mortar mixes and the evolution of the masonry trade, its tools and materials will be studied. Foundation drainage and damp proofing and an introduction to bricklaying are also covered in this course.

### **BLCT 2023 - Equipment Safety - Part II, 3 Credits**

Level: Lower

This course presents safety requirements for operating heavy equipment, activities of the Occupational Safety and Health Administration relative to OSHA inspections and reporting requirements, and use of protective gear. This course will prepare students for the OSHA 10 hour certification exam.

### **BLCT 2032 - Wood Fabrication Technology II, 2 Credits**

Prerequisite(s): BLCT 1022 with D or better

Level: Lower

This course expands on BLCT 1022 Wood Fabrication Technology I, covering hand and power tools usage through practical experience with the tools. Each student will build projects that will require shop drawing interpretation and copying pieces from a jig or actual item. Compound bevells and cutting techniques are introduced that require advanced setups on the table saw and other power tools in the lab. Students are expected to produce a higher quality project. All tool usage is encouraged (hand and power).

### **BLCT 2033 - Equip Preventive Maintenance, 3 Credits**

Level: Lower

This course covers preventive maintenance responsibilities of the entry level heavy equipment operator. Course topics include specifying basic equipment subsystems and major mechanical systems, knowing how and when to complete routine inspections of equipment, and how and when to service equipment.

### **BLCT 2034 - Grades & Blueprint Reading II, 4 Credits**

Level: Lower

This course presents proper practices for setting grades off benchmarks and describes methods of setting grades using various types of levels. The trainee is taught how to read and interpret construction plans to determine grading requirements. It will review basic grading operations, and also cover site prep, U.F.P.O., contours, establishing grades, reading and understanding site plans.

### **BLCT 2036 - Operations Part II, 6 Credits**

Prerequisite(s): BLCT 2033 with D or better \*

Level: Lower

This course continues the study of tractors, dump trucks and front-end loaders. Safe operation practices as well as preventive maintenance requirements will be covered for each piece of equipment. Common uses of each piece of equipment and their attachments will also be discussed. Site training will also continue on the backhoe and bulldozer. Students will be introduced to advanced positioning systems and automated controls.

### **BLCT 2042 - Historic Roofing Materials, 2 Credits**

Level: Lower

This course will provide an overview of materials commonly used in historic roofing construction and how they differ from the materials commonly used today. We will look at the natural roofing materials of thatch, wood, slate, and shale processed into terra-cotta tiles, as well as metal roofing products. We will learn how to effectively deal with flashings in a variety of situations.

### **BLCT 2044 - Construction Essentials III, 4 Credits**

Level: Lower

This course is an introduction to drywall, plaster, steel buildings, and transits. An introduction to commercial construction is also included with a focus on apprenticeship training, energy insulated foam systems, and pre-fab concrete systems.

**BLCT 2052 - Measu & Docum a Timberframe, 2 Credits**

Level: Lower

In this course we will examine accepted methods used in the assessment, measuring, and documentation of a historic timber frame. We will study the systems historically used to layout timbers for fabrication, measurement systems used by the builders, and standardization of the surfaces used for reference.

**BLCT 2053 - Introduction to Earth Moving, 3 Credits**

Level: Lower

Provides a broad introduction to the processes of planning and executing earth moving activities on various types of construction projects. Explains the uses of heavy equipment such as bulldozers, scrapers, excavators, and loaders.

**BLCT 2054 - Construction Essentials IV, 4 Credits**

Level: Lower

This course provides the student with a basic knowledge of residential siding. Course content includes applicable terminology, comparisons of different siding types and installation instruction for several types of siding. A unit on cornice design and installation and a unit on windows are included, covering design criteria as specified by building and energy codes as well as installation.

**BLCT 2062 - Mech of Decay & Deter in Wood, 2 Credits**

Level: Lower

This course will examine many of the factors causing deterioration and decay in wood. We will explore means of prevention of this damage, costs, and hazards associated with deterioration and decay.

**BLCT 2064 - Structural Components, 4 Credits**

Prerequisite(s): BLCT 1024 with D or better

Level: Lower

This course explores a variety of structural components and building practices in frame construction. Major topics include manufactured building materials, span and load bearing requirements, floor systems, roof system, fastening techniques, and estimating, as well as common frame construction techniques. The lab exercises allow the student to practice the layout, assembly, and construction of a variety of structural components with concentration on common rafters and manufactured joists, trusses, and beams.

**BLCT 2074 - Historic Roofing Materials, 4 Credits**

Level: Lower

This course will provide an overview of materials commonly used in historic roofing construction and how they differ from the materials commonly used today. We will look at the natural materials of thatch, wood, slate, and shale processed into terra-cotta tiles, as well as metal roofing. We will learn how to effectively deal with flashings in a variety of situations.

**BLCT 2084 - Mech of Decay & Deter of Wood, 4 Credits**

Level: Lower

This course will examine many of the factors causing deterioration and decay in wood. We will also explore means of prevention of this damage, and the costs of and hazards associated with some of these means.

**BLCT 2092 - Soils Part II, 2 Credits**

Prerequisite(s): BLCT 1052 with D or better

Level: Lower

This course describes basic soil classification methods, details factors affecting classification, and presents soil density and compaction requirements. It also includes the requirements for handling and combining different types of materials.

**BLCT 2093 - Window & Door Restoration, 3 Credits**

Level: Lower

This course discusses the materials and techniques historically used in the construction of residential windows and doors, and methods commonly used in their restoration. We will cover maintenance issues, glazing options, hardware, wood sash restoration, sill replacement, painting, weather stripping, interior/exterior storm windows, and energy efficiency, as well as appropriate replacement of missing/damaged parts. Appropriate wood species and wood quality issues will be covered.

**BLCT 2119 - Forced Air Heating, 9 Credits**

## COURSE DESCRIPTIONS

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Level: Lower

Introduction to heating and air conditioning and factors which affect comfort requirements, forced air heating equipment and its various applications, installation of duct systems in residential structures, heat sources, combustion, and gas and oil burner systems.

### **BLCT 2129 - Sheet Metal, 9 Credits**

Level: Lower

Provides students with entry level knowledge and skills in sheet metal industry, sheet metal machines and tools, developing basic sheet metal skills, sheet pattern layout including edges, seams, assembly and installation, development of patterns for ducts, transitions, and components used in the heating industry.

### **BLCT 2132 - Estimating II, 2 Credits**

Level: Lower

The Estimating II course is a continuation of Estimating I. This course develops mathematical concepts and application skills necessary for the carpenter and mason to estimate building quantities and associated costs. Topics include formulas for area, lineal footage, board foot quantities, and basic geometry as it pertains to construction. The student will be required to figure material takeoffs for sidings, roof materials, and cornice. These are the exterior finish materials for building a house. Upon completion of this course the student will be able to estimate a structure to the point of trimming it out.

### **BLCT 2142 - Masonry II, 2 Credits**

Prerequisite(s):

Level: Lower

This course covers the various types of mortar mixes and their appropriate uses, reinforces and builds on trade aspects and skills introduced in BLCT 1142. The evolution of the masonry trade, tools, and materials used will be studied. We will develop the skills needed by those restoring or maintaining historic masonry structures. Bricklaying and stone vaneers will be introduced. The basics of plasterwork will be covered.

### **BLCT 3002 - Blueprint Reading Part III, 2 Credits**

Level: Lower

This course covers the equipment and supplies required to perform structural work. Discussions include the following topics: bridge types and materials, bridge substructures, bridge superstructures, structural concrete and structural steel. Reading and interpreting site plans will also be reinforced.

### **BLCT 3003 - Advanced Equipment Safety, 3 Credits**

Level: Lower

This course teaches advanced safety techniques and requirements for heavy equipment operators and emphasizes organizing and conducting safety meetings. Discussions include OSHA hazardous material requirements and safe operation of equipment. Course topics also include safety reporting, inspections and investigations.

### **BLCT 3005 - Operations Part III, 5 Credits**

Prerequisite(s): BLCT 1016 with D or better and BLCT 2036 with D or better

Level: Lower

This course presents the use, safe operation, and maintenance of excavators, trucks, and trailers. Students will explain and demonstrate the use of excavators in ditching, grading, and slope-finishing operations, describing various operating techniques. The course describes the types of trucks used in highway/heavy construction including rigid frame trucks, such as dump trucks, transit-mix trucks, and tractor trailer trucks. The trailers discussed include bulk haulers and flatbed trailers. Truck controls and components, preventive maintenance and operation, and required licensing are also covered. This course will continue to reinforce correct operation of backhoes, bulldozers, and front end loaders.

### **BLCT 3012 - Soils - Part III, 2 Credits**

Level: Lower

This course addresses problems associated with bridged areas and breakthroughs, as well as soil stabilization. It presents the proper use of geo-textile materials. Students will review soil compaction requirements, specific procedures for running moisture-density tests and methods of fixing compaction problems.

### **BLCT 3013 - Paving Part I, 3 Credits**

Level: Lower

This course includes the processing and preparation of asphalt and concrete, including quarrying, crushing, screening, and testing. The operation of concrete plants, hot mix asphalt plants, and pug mills is also explained. Students will be prepared for MSHA (Mine Safety Health Administration) certification.

**BLCT 3023 - Supervision Part I, 3 Credits**

Level: Lower

In this course students will learn the principles of project planning, scheduling, estimating, and management, and the basic skills required for supervising personnel.

**BLCT 3033 - Cabinet & Counter Top Const, 3 Credits**

Prerequisite(s): BLCT 1022 with D or better and BLCT 2032 with D or better

Level: Lower

This course covers the principles of cabinet construction and countertop fabrication. The students will build cabinets and work on fabricating laminate countertops in the laboratory.

**BLCT 3119 - Hot Water & Steam Heating, 9 Credits**

Level: Lower

Examination of all components and functions in residential hot water and steam heating systems including configurations encountered in common applications, hot water boiler ratings, piping layouts, pump performance, zoning, venting and ventilation principles, sizing, installation and troubleshooting, and energy conservation and equipment.

**BLCT 3123 - Constructn Drawings & Specifct, 3 Credits**

Prerequisite(s): BLCT 2054 with D or better

Level: Lower

The four major plan groups are architectural, structural, mechanical, and civil. The students will be able to identify major types of plans. Emphasis is placed on residential plan reading and development.

**BLCT 3129 - Electricity & Controls, 9 Credits**

Level: Lower

Principles of electricity, power sources, loads, switches, basic house wiring circuits, electrical test equipment, control wiring for forced air and hydronic heating system, fuels, and accessories including zoning.

**BLCT 3159 - Masonry III, 9 Credits**

Level: Lower

This course covers job supervision, foundations, material estimates, fireplace design and construction, stone masonry skills in these areas and to provide repetition to increase production and accuracy.

**BLCT 3169 - Masonry IV, 9 Credits**

Level: Lower

This course provides instruction in mortar types for specific applications, masonry repair and restoration, ornamental masonry and bonding patterns. Cold weather construction techniques relevant to concrete and masonry construction is studied. A unit on engineered brick masonry and prefabrication is included. Lab activities are provided to develop hands-on skills.

**BLCT 3203 - Estimating III, 3 Credits**

Level: Lower

This course involves material cost and quantity estimating, plus work units and labor cost for residential and light commercial construction. CSI Division specifications are applied in an estimate and bid project as part of the course requirements.

**BLCT 3212 - Intro to Resid Jobsite Mgmt II, 2 Credits**

Prerequisite(s): BLCT 3203 with D or better

Level: Lower

Course instruction provides basic management knowledge and skills for a residential jobsite lead carpenter or supervisor. A systematic approach to obtain and manage small projects successfully.

**BLCT 3213 - Exterior Construction Details, 3 Credits**

Prerequisite(s): BLCT 1023 with D or better

Level: Lower

## COURSE DESCRIPTIONS

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This course covers the methods used in the construction and installation of residential exterior elements. The course content includes the construction of porches, decks and breezeways. Students will learn about flooring and decking materials, different types of entrance doors and their installation, garage doors, footings and fasteners, railing systems and structural supports, and building code requirements.

### **BLCT 3223 - Home Remodeling, 3 Credits**

Prerequisite(s):

Level: Lower

This course covers the evaluation of overall conditions found in older buildings. Students will learn about the construction techniques used in remodeling and how they differ from new construction. This will include the process of identifying and handling hazardous materials, historical framing styles, and different styles of interior and exterior trim.

### **BLCT 3233 - Advanced Framing, 3 Credits**

Prerequisite(s): BLCT 2054 with D or better

Level: Lower

This course will teach roof design, including the cutting and fitting of hip and valley rafters. The course will also cover truss design and installation of trusses.

### **BLCT 3313 - Basic CAD for Resid Drawings, 3 Credits**

Prerequisite(s): BLCT 2054 with D or better

Level: Lower

Course instruction provides basic computer aided drafting (CAD) techniques. Eight initial projects incorporate the application of appropriate commands, including drawing file management and software settings. CAD basics introduced in lecture are then applied in a laboratory setting with emphasis on developing CAD preliminary residential prints.

### **BLCT 3323 - Interior Trim, 3 Credits**

Prerequisite(s): BLCT 1024 with D or better and BLCT 2044 with D or better

Level: Lower

This course covers hanging and trimming doors; trimming windows; and installing interior moldings in a laboratory setting.

### **BLCT 3413 - Blueprint Reading-Bldg Construct, 3 Credits**

Prerequisite(s):

Corequisite(s): BLCT 3453

Level: Lower

This course covers instruction in blueprint reading, concentrating on plumbing blueprints, building blueprints, and instruction in the use of the architect's scale for taking measurements. The course covers all components of a wood frame structure including foundations. Students will be taught the proper installation of piping and fixtures so as not to jeopardize the building's structural integrity.

### **BLCT 3423 - Pipe Fitting - Math Estimating, 3 Credits**

Prerequisite(s):

Corequisite(s): BLCT 3453

Level: Lower

This course covers basic math and materials estimating the plumbing trades. Pipe fitting math is practiced and applied to ensure proper plumbing drainage, as well as water and gas line pipe length installations. Material lists and job estimating is also taught as it pertains to various plumbing systems and fixtures. The students are given instruction on materials mark up for profit, proper customer billing, and required income and sales tax as it pertains to a self-run plumbing business.

### **BLCT 3433 - Cop Pipe & Tub, Water Sys Des, 3 Credits**

Prerequisite(s):

Corequisite(s): BLCT 3453

Level: Lower

This course covers the study and installation of various types of copper pipe & tubing and proper methods of joining. Also includes instruction on fitting use and proper code applications. The methods of testing potable water lines are also covered.

### **BLCT 3443 - Drainage Systems & Piping, 3 Credits**

Prerequisite(s):



Corequisite(s): BLCT 3453

Level: Lower

This course covers the instruction in the design, joining, installation, and proper application of various types of drainage piping used in drainage and venting systems. Also covered will be instruction and study of public and private sewage systems, their make-up, various aspects of troubleshooting and maintenance.

**BLCT 3453 - Plumb Trade History & Safety, 3 Credits**

Level: Lower

This course covers the study of safety practices and OSHA training related to the plumbing trades. All students obtain a 10-hour OSHA training card upon successful completion of the course. The history of plumbing and how plumbing systems and codes originated is covered. This course also covers the instruction in the proper care, use, and application of various hand and power tools used in the plumbing trade.

**BLCT 3463 - Water Heaters-Plumb Fix Inst/Rpr, 3 Credits**

Prerequisite(s):

Corequisite(s): BLCT 3453

Level: Lower

This course covers the instruction and study of selection and installation of water heaters for industry standards. Instruction is also given on gas and electric water heater troubleshooting and repairs. This course also covers the instruction of plumbing fixture specifications and installation. Fixture troubleshooting and repair is also covered in this course.

**BLCT 3473 - Heating Fuels-Comb Theo&Troubl, 3 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

This course is an introduction to the various fuels used in the heating trades and the methods of converting fuels for various applications. The theory of combustion and combustion troubleshooting is also covered in the course. Common forced air furnace parts and components are discussed and various manufactured retrofit products are applied. This course also includes basic wiring of conventional forced air furnaces and principles and troubleshooting of furnace electronic ignition.

**BLCT 3483 - Electrical Fundamentals, 3 Credits**

Prerequisite(s): BLCT 3453 with D or better \*

Level: Lower

The objective of this course is to develop knowledge of electricity and the units used to describe and measure it. The course will also show how different types of electrical circuits function and what different electrical components do in those circuits. Special emphasis is placed on temperature controls and switching. Elementary wiring diagrams are introduced.

**BLCT 3493 - Forced Air Furnace Controls, 3 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

The objective of this course is to develop skills in the installation and service of electrical components of gas and oil forced air furnaces. This includes gas standing pilot and electronic ignition systems. It applies to both 80% and 90% efficient furnaces including those with integrated circuit boards.

**BLCT 3503 - Hydro Comp, Circu Pump&Ht Emit, 3 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

The purpose of the course is to develop an understanding of piping materials, fittings and various components used in hydronic heating systems. This includes knowledge about types and performance of circulating pumps. Also included are heat emitters which have been used in the past and several new types which are currently gaining popularity.

**BLCT 3513 - Hydronic Controls and Motors, 3 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

This course covers electrical components as they apply to hydronic heating. Students will produce wiring diagrams for external boiler wiring as it applies to zone valves and pumps. Investigation into areas of multiple boiler controls, injection mixing controls and outdoor reset

## COURSE DESCRIPTIONS

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controls are pursued. The theory and application of different motors used in the HVAC industry are also presented.

### **BLCT 3523 - Hydronic Funda & Heat Sources, 3 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

This course will introduce students to basic thermodynamic principles. The course will explore the advantages of hot water and steam heating, as well as the various types of boilers used in the industry.

### **BLCT 3533 - Hydronic Piping Systems, 3 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

The objective of this course is to develop an understanding of various piping systems used in hydronic heating systems including series loop, one pipe two pipe (direct and reverse return) and primary/secondary piping. The course will also cover the applications and installations available for a variety of radiant heating types.

### **BLCT 4002 - Below Grade Const(Hvy Highway), 2 Credits**

Level: Lower

This course discusses the below grade construction processes that are necessary to perform highway/heavy construction. Excavation support systems, excavation safety, underground piping materials and fittings, joining methods for underground pipe, box culverts, and catch basins are covered.

### **BLCT 4003 - Paving Part II, 3 Credits**

Level: Lower

This course explains how to perform hot mix asphalt paving and concrete paving. The course covers the operation of asphalt pavers and all equipment required to perform paving. Discussions will include concrete paving equipment such as concrete pavers, slip-form pavers, and texture/curing machines.

### **BLCT 4004 - Operations Part IV, 4 Credits**

Level: Lower

This course presents information on the operation and maintenance of telescoping excavators. Students learn basic operation of equipment and apply this knowledge in performing earth work activities such as ditching, placing rip rap, and slope finishing. Included are safety issues and preventive maintenance activities.

### **BLCT 4012 - Earth Moving (Hvy Highway), 2 Credits**

Level: Lower

This course describes the necessary procedures for preparing ground for highway/heavy construction. It explains soil basics, including terminology, identification, and classification. Earthmoving operations, such as laying out slopes and grades, site excavation, and hauling, are addressed along with methods of stabilizing soils.

### **BLCT 4013 - Supervision Part II, 3 Credits**

Level: Lower

This course will build on Supervision - Part I. The student will learn about prevailing wage schedules used by DOL, professional ethics, customer focus, ability to listen, teamwork, communication, attitude, responsibility, and patience. Topics include project management, estimation, record keeping, planning, bidding and contract writing.

### **BLCT 4022 - Finish Operations, 2 Credits**

Level: Lower

This course contains information about the responsibilities of the finish operator. Discusses leadership abilities in relation to organizing and directing workers and operations, and how to understand and interpret production requirements and specifications. Also explains how to set up and adjust leveling instruments.

### **BLCT 4023 - Form Building, 3 Credits**

Level: Lower

This course provides the basics of building footer forms and installing concrete wall forms. It will also introduce students to SMAW (Shielded Metal Arc Welding) electric arc welding and cutting steel with an oxy-acetylene torch.

**BLCT 4032 - Finishing & Grading, 2 Credits**

Level: Lower

This course provides instruction in the use of various types of heavy equipment to finish and trim grades and slopes of roads, pads, ditches, and other structures. Specifications used for grading will be discussed as well as procedures for checking the final grade.

**BLCT 4033 - Historic Framing Techniques, 3 Credits**

Level: Lower

This course will look at the evolution of systems used in the construction of wooden house frames throughout the history of building in America. We will begin with an in-depth look at the centuries-old techniques employed in timber framing, and then follow the progression through braced-frame and balloon frame buildings. Students will apply these techniques to new and/or existing structures.

**BLCT 4042 - Construct Business Operation, 2 Credits**

Prerequisite(s): BLCT 3203 with D or better \*

Level: Lower

This course is an overview of the basic requirements of ownership and operation of a small construction business. The course also covers the building code sections that establish minimum standards for public safety and protect consumers from hazardous design and construction.

**BLCT 4043 - Masonry Sketching & Detailing, 3 Credits**

Prerequisite(s): BLCT 3169 with D or better

Level: Lower

This course will give students the knowledge and ability to use an architect's scale and basic drafting skills to produce shop drawing sketches of masonry wall systems, masonry details, shapes for architectural building stone and architectural pre-cast.

**BLCT 4053 - Blueprint Reading for Masonry, 3 Credits**

Prerequisite(s): BLCT 3169 with D or better

Level: Lower

Students will develop a working knowledge of blueprints and specifications for masonry projects. Topics will include masonry cost and material estimating, jobsite preparation and construction. Students will interpret and apply standards commonly used in masonry construction.

**BLCT 4104 - Comparison of Framing Tech, 4 Credits**

Level: Lower

This course will look at the evolution of systems used in the construction of wooden house frames throughout the history of building in America. We will begin with an in-depth look at the centuries-old techniques employed in timber framing, then follow the progression through braced-frame and balloon frame buildings.

**BLCT 4133 - Mechanicals, 3 Credits**

Level: Lower

This course is an overview of basic remodeling, plumbing, heating and electrical installation to develop jobsite coordination and cooperation among various trades working at a site. This includes hands on experience with electric, heating, and plumbing.

**BLCT 4143 - Basic House Wiring-Forced Air, 3 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

This course offers instruction and application of basic house wiring and theory. The student is also introduced to the heating trade and to the theory of proper furnace installation. Reasons for human comfort and discomfort as it pertains to forced air heat are discussed. Troubleshooting of disturbing and distressing noises and conditions as well as indoor air quality is also covered in this course.

**BLCT 4153 - Sheet Metal Fabrication, 3 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

This course covers the instruction and the application of various materials of the sheet metal trade. Students are also instructed in the forming and use of different seams and edges required for various applications. Instruction and proper application of methods of joining sheet metal such as riveting, welding, brazing, and soldering is also covered.

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### **BLCT 4163 - Mid & Hi Effy Furn-Alt Warm Ar, 3 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

This course covers the proper evaluation and installation of mid and high efficiency furnaces. Fuel oil burner breakdown, maintenance, and installations are covered in this course. Instruction is given on the proper sizing and installation of natural gas and propane gas distribution pipelines. Alternate warm air heat sources, types, and installations are also taught. Proper trade practices of the HVAC technician, heat system analysis, and maintenance are also covered in this course.

### **BLCT 4173 - Sheet Mtl Air Dist Systm &Vent, 3 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

This course covers the many types of furnace ductwork and proper application of various duct fittings. Proper application and installation of furnace air distribution systems is also covered. Instruction on Type B galvanized sheet metal vent pipe and components is given and the proper sizing and installation of this metal piping is covered. Sheet metal math such as perimeter, area, and volume is also included in this course.

### **BLCT 4176 - Masonry V, 6 Credits**

Level: Lower

To give the student a working knowledge of the concrete industry by showing form construction as well as various types of concrete and their uses. Stair building, brick and concrete are also included within this course. This is a five (5) week course.

### **BLCT 4183 - Sheet Metal Trade Safety, 3 Credits**

Prerequisite(s): BLCT 3453 with D or better

Level: Lower

This course covers instruction in the proper use and application of various hand and power tools used in the sheet metal trade. Sheet metal trade and tool safety is also covered in this unit. Students will be introduced to different sheet metal types and their proper applications as well as mechanical drawing. Students will develop and lay out patterns for sheet metal to be cut and formed.

### **BLCT 4186 - Masonry VI, 6 Credits**

Level: Lower

This course serves as an overview of contracting, applying for jobs, small business and structural details on commercial and heavy construction. This is a five-week course.

### **BLCT 4203 - Air Cond Components & Install, 3 Credits**

Prerequisite(s):

Level: Lower

Students will learn about air conditioning components and accessories. Students will learn how to install air conditioning including pressure testing, evacuation, and charging.

### **BLCT 4212 - Construction Safety, 2 Credits**

Prerequisite(s): BLCT 1034 with D or better

Level: Lower

Construction Safety is a comprehensive study of the requirements of an effective safety and health program that focuses on worker safety, improved productivity and accident risk management. This is done using an OSHA Outreach safety training format designed to provide students with a basic understanding and application of the OSHA standards relative to their field of study.

### **BLCT 4213 - Air Conditioning Fundamentals, 3 Credits**

Prerequisite(s):

Level: Lower

This course teaches the fundamentals of air conditioning and how the components of the system work together to perform the cooling process. This includes an examination of types of systems, and detailed look at the types and performance of evaporators and compressors.

### **BLCT 4223 - Air Cond Perf & Trou & Ht Pump, 3 Credits**

Prerequisite(s):

Level: Lower

This course teaches electrical and mechanical troubleshooting capabilities that are usable in

real life applications. Students will also study heat pumps and a variety of applications in which they are feasible.

**BLCT 4233 - Heat Loss & Heat Gain, 3 Credits**

Prerequisite(s): BLCT 3523 with D or better

Level: Lower

Students will determine the heat loss and heat gain in a residential or small commercial building, which would allow a technician to determine what size equipment and to select and size heating and cooling ductwork and diffusers.

**BLCT 4243 - Refrigeration Handling Cert, 3 Credits**

Prerequisite(s):

Level: Lower

This course prepares students to take the EPA Refrigerant Handling Certification test.

**BLCT 4253 - Residential Duct System Design, 3 Credits**

Prerequisite(s): BLCT 4233 with D or better \*

Level: Lower

Students will learn the fundamentals of duct system design as it applies to residential forced air heating and cooling systems. This includes an in-depth look at blower performance and equipment which affects airflow in ductwork.

**BLCT 4303 - Interior Surfaces, 3 Credits**

Prerequisite(s): BLCT 3323 with D or better

Level: Lower

This course covers the installation of finished ceiling, floor, and wall materials as well as the principles of stair building. The student will install floor and wall materials as well as calculate, cut and assemble stair parts in the laboratory.

**BLCT 4312 - Intro to Resid Jobsite Manage, 2 Credits**

Level: Lower

Course instruction provides basic management skills for a residential jobsite lead carpenter or supervisor. This course includes information on hiring workers, managing sub-contractors, material deliveries, scheduling, contracts, and documentation.

**BLCT 4900 - Directed Study, 1 to 5 Credits**

Level: Lower

Directed Study is a course structured to allow students to study construction related subjects in addition to the required curriculum. This allows for selected projects for senior students. This program will include research and written reports in a student's major field under the supervision of faculty. This is a one to five credit course.

**ACHELOR OF SCI ENGR TECH****BSET 1003 - Intro to Engineering Tech, 3 Credits**

Level: Lower

This course prepares students who are new to the engineering technology field for success at the college level. Topics covered include engineering technology as a career, engineering library usage, problem solving techniques, measurement systems, right triangle geometry, dimensional analysis, significant figures, unit conversion, and data collection and analysis. Career options and opportunities will be presented using guest speakers from industry.

**BSET 3004 - Electromechanical Controls, 4 Credits**

Prerequisite(s): BSET 1003 with D or better

Level: Lower

BSET 3004 solves machine and process control applications using relay, solid-state and fluid logic control. Safety rules will be taught and adhered to. The principles of dc and ac rotating machines are studied and applied in the laboratory. Real and reactive power are analyzed in ac systems. Programmable Logic Controllers are used to solve a wide variety of simulated systems in design projects and to provide control system trouble-shooting experience.

**BSET 5393 - Engineering Technology Appl, 3 Credits**

Prerequisite(s): MATH 1063 with D or better \* or MATH 2094 with D or better \* or MATH 2074 with D or better \* or MATH 1084 with D or better \*

Level: Upper

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The engineering technology student will be presented with engineering-oriented problems to solve using programming concepts. The students will learn the logical sequence of steps to obtain their solutions to the various technical problems. The problems will be applied to static dynamics, numerical methods, thermodynamics, and fluid applications.

### **BSET 5900 - Directed Study, 1 to 4 Credits**

Level: Upper

A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

### **BSET 7001 - Senior Seminar & Project Des, 1 Credit**

Corequisite(s):

Level: Upper

First of two-semester sequence Bachelor of Science seniors. Students design technical project for completion in BSET 8003. Project proposal and design oral reports are presented. Weekly seminar deals with various aspects of post-graduation professional employment.

### **BSET 8003 - Senior Technical Project, 3 Credits**

Level: Upper

Students build and test a technical project designed in BSET 7001. Each student must do library research, a formal oral presentation, project demonstration and submit a written project report.

### **BSET 8006 - Senior Internship, 6 Credits**

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 2 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. At the end of the internship students will be required to give an oral presentation to the faculty about their internship experience.

### **BSET 8712 - Senior Internship, 12 Credits**

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. At the end of the internship students will be required to give an oral presentation to the faculty about their internship experience.

## **BUSINESS ADMINISTRATION**

### **BUAD 1043 - Occupational Experience, 3 Credits**

Level: Lower

This is a semester-long experience where a business student can gain hands-on work experience in a sponsor company. Students benefit from this employer-employee relationship as an extension of classroom theory/applications and learn to work within corporate rules/regulations as expected of a newly hired worker. Satisfactory completion of this training, as well as related assignments, is required.

**BUAD 1103 - Keyboarding, 3 Credits**

Level: Lower

Three lectures per week. When this course serves as the prerequisite for another course, the student must receive a grade of C or better. Learning to locate and operate the keys by touch; improving techniques and keyboarding speed and accuracy; and application activities to help to improve related language arts skills.

**BUAD 1201 - Leadership & Military Science, 1 Credit**

Level: Lower

Leadership and Military Science introduces students to the personal challenges and competencies that are critical for effective leadership and communication. Students learn how the personal development of life skills such as cultural understanding, goal setting, time management, mental/physical resiliency, and stress management relate to leadership, officership, and the Army profession. The focus is on developing basic knowledge and comprehension of Army leadership dimensions, attributes and core leader competencies while gaining an understanding of the ROTC program, its purpose in the Army, and its advantages for the student.

**BUAD 1543 - Grammar, 3 Credits**

Prerequisite(s):

Level: Lower

In this course students will develop a high-level ability in spelling, vocabulary, sentence structure, word choice, capitalization, and punctuation with direct application to business writing and speaking. This course encourages application of this knowledge through editing activities. Attention is given to diagnosing fragments, run-ons, comma splices and parallelism errors. Emphasis is placed upon mastery of grammatical structure needed for effective writing of sentences, paragraphs, and essays. When this course serves as the prerequisite for another course, the student must receive a grade of C" or better in this course."

**BUAD 2033 - Business Communications, 3 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - BC-COMP1503/BUAD2033, Gen Ed - BC-COMP3503/BUAD2033  
Students will develop skills in communication within business activities. In addition to learning fundamentals of communication theory and principles, special attention is given to preparation of letters, researching techniques, written and oral reports. Emphasis is also given to preparing students for the job search process including preparation of application letters, resumes, interviews, and the follow-up activity.

**BUAD 2203 - Intro to Comp Appl & Speed Dev, 3 Credits**

Prerequisite(s): BUAD 1103 with C or better

Level: Lower

BUAD 1103 Pre-requisite preferred. An introduction to Windows XP and the Internet with coverage of Microsoft Word. Instruction and immediate practice in using software to solve contemporary computer applications such as letters, reports, and tables. Presentation of introductory concepts of micro-computer applications using current Word programs. This course affords the student the opportunity to learn word processing for employment, personal, and home use utilizing a microcomputer. An individualized diagnostic and prescriptive method of developing accuracy and speed at the keyboard. Students must demonstrate the ability to key at a minimum keyboarding speed of 40 words per minute.

**BUAD 3043 - Business Law I, 3 Credits**

Level: Lower

This course offers a general inquiry into the nature of law and the legal system in the United States. Areas covered include, but are not limited to, the different schools of jurisprudential thought, the Common Law tradition, Alternative Dispute Resolution, court procedures, legal research and case citations. Special attention is given to Constitutional Law and business, Torts and Crimes, Intellectual Property and the Common Law of Contracts.

**BUAD 3114 - Intl Tourism: Ital Food & Geog, 4 Credits**

Level: Lower

The course presents concepts of tourism relating to food and geography, using Italy as its example. The course is relevant to students of all backgrounds but was designed specifically for students of hospitality, business, and culinary arts. Students will study international

## COURSE DESCRIPTIONS

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organizations operating in tourism (i.e. WTO) and the different types of tourism, with particular attention paid to sustainable tourism. Students will be asked to investigate the tourism geography of Italy, becoming familiar with the most important tourist sites in Italy and Campania (through several excursions). The third module of the course will be dedicated to a very important kind of tourism in Italy and of the Campania: Food and Wine Tourism. Students are expected to actively participate and contribute to class discussion. Students will learn about marketing and/or sales activities connected with the promotion of tourism in Italy and Campania. These activities will introduce marketing research and advertising, promotional campaign organization, and media relations.

### **BUAD 3153 - Fundamentals of Management, 3 Credits**

Level: Lower

The course will develop an understanding of management theories and management skills through an examination of the basic functions of management. The concepts of planning, organizing, leading, and controlling are enhanced to show how these basic principles can be used to create a healthy and thriving organization in today's global environment. Special attention will be given to decision making, problem solving, and leadership in an environment where productivity improvements is a major concern.

### **BUAD 4004 - Ess of Entrepr & Sm Bus Mgmt, 4 Credits**

Level: Lower

This course offers the student a step-by-step approach to starting a business. The course covers the fundamental principles of marketing, law, management, and office administration as applied to beginning a new venture. The class will be divided into teams that will prepare a comprehensive individualized business plan to include a market profile, site analysis, competitive analysis, financials, goals and objectives, pricing and marketing strategies, and executive summary. A major focus of this course is to explore each step necessary in structuring and launching a new venture, and discussing ways of recruiting the necessary resources to accomplish this venture.

### **BUAD 4053 - Business Law II, 3 Credits**

Level: Lower

An examination of the law of sales, commercial paper, agency-employment relationships, business organizations and government regulation of same. Article 2 of the UCC is used in the sales area with special attention paid to contract formation, title and risk of loss, performance and product liability. In examining commercial paper, Article 3 of the UCC is referenced with emphasis on function and form, holders in due course and liability and discharge. Attention is also given to employer/employee relationships, and distinguishing between sole proprietorships, partnerships, limited liability companies and corporations. Finally, government regulation of business is examined, especially in the areas of anti-trust and restraint of trade.

### **BUAD 4133 - Investments, 3 Credits**

Level: Lower

This course is designed to be an introductory course in investments. Topics covered are sources of information, establishing investment goals, investment returns and risks, time value of money, investing in common stocks, bonds, and mutual funds, tax aspects of investing, analysis of financial statements, portfolio management techniques, and introduction to futures and options.

### **BUAD 4193 - Insurance and Risk Management, 3 Credits**

Level: Lower

This course covers one of the six components of financial planning. This course will describe the techniques a financial planning/risk manager will use to analyze risk and assess alternate strategies. The course begins by examining the pervasive nature of risk and its impact on both the individual and society. It also demonstrates the ways in which insurance can be used to deal with the problems posed by such risk. Insurance is an integral part of the personal financial planning process; therefore the course is designed to be consumer oriented. The course can also be useful in preparation for a career in the fields of life, health and disability, and property and casualty insurance.

### **BUAD 4203 - Intro Personal Financial Plan, 3 Credits**

Level: Lower

This course is an introduction to personal finance covering those areas which are necessary



for an individual to make better financial decisions throughout one's lifetime. Topics include: developing financial statements, plans, budgets, time value of money, money management, credit management, tax planning, insurance, investments, retirement planning, and estate planning. Computer, business calculator applications, and case studies will be used throughout the course.

**BUAD 4403 - Business Computer Applications, 3 Credits**

Prerequisite(s):

Level: Lower

Review of business applications used in general office environments. Continuation of advanced theories and applications in microcomputer applications are stressed using the current computer software packages. Students must demonstrate the ability to keyboard at a minimum keyboarding speed of 30 gross words per minute. (Prerequisite BUAD 1103 is minimum 30 wpm).

**BUAD 4503 - Intro to Desktop Publishing, 3 Credits**

Prerequisite(s):

Level: Lower

Three lectures per week. Prerequisite: BUAD 1103 (Keyboarding) or Cisy 1003 (Intro to Microcomputer Apps). The preparation of business documents using Word 2007 processing software. The course includes study of basic page layout and design structure and computer graphics to produce professional looking business documents, such as letters, resumes, memoranda, and reports, as well as the creative production of flyers, advertisements, and newsletters.

**BUAD 4900 - Directed Study, 1 to 6 Credits**

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**BUAD 5003 - Management Communications, 3 Credits**

Prerequisite(s): COMP 1503 with D or better or BUAD 2033 with D or better and BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

This course is designed to provide the student with the range of communication issues a manager will face in the future. Enduring issues on how to write and speak effectively and devise a successful communications strategy as well as how to make the best use of telecommunications technology will be explored. Through lecture and application, the student will study such areas as handling feedback, managing meetings, communicating change, communicating with diverse populations and external audiences. Special emphasis will focus on how to use communications to achieve organizational missions, how to adapt their communications to the specific needs of their audiences, and how to prepare for intercultural communications challenges.

**BUAD 5013 - Principles of Leadership, 3 Credits**

Prerequisite(s): BUAD 3153 with C or better or TMGT 7153 with C or better

Level: Upper

This course is an examination of the theory, practice, and principles of leadership within the realm of management. Major topics include the evolution of leadership theory, an examination of the major leadership theories operating in modern organizations, and the impact of each on organizational effectiveness. The development, refinement, and application of effective leadership principles and skills are also examined. Students will be expected to analyze the spectrum of leadership theories and formulate opinions as to the most effective and efficient forms of leadership given a specific situation or organizational context.

**BUAD 5023 - Human Resource Management, 3 Credits**

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

This course is designed to provide the students with an understanding of human resource management, and how they can improve their use of human resources through management tactics. It will discuss what human resource management contributes to the organization in terms of effectiveness and competitiveness. Discussion and research will take place on

## COURSE DESCRIPTIONS

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some of the challenges and workforce issues being faced in this area. Some of the topics covered include strategic human resource planning, staffing, training and development, compensation, employee and labor relations, and workplace safety.

### **BUAD 5033 - Retirement Planning, 3 Credits**

Prerequisite(s): BUAD 4203 with D or better

Level: Upper

This course provides an overview of the retirement planning process. It will describe the ongoing, systematic procedures a financial planner will utilize to assist a client in establishing meaningful retirement objectives and creating appropriate strategies. Topics will include employer sponsored retirement plans, Social Security, Medicaid, Medicare, post retirement health and quality of life issues, as well as investment, estate, and tax planning strategies.

### **BUAD 5043 - Business Ethics, 3 Credits**

Prerequisite(s): ( BUAD 3043 with D or better or BUAD 7023 with D or better ) and ( BUAD 3153 with D or better or TMGT 7153 with D or better )

Level: Upper

This course explores the complex nature of ethical issues confronted by modern business leaders and managers. It integrates perspectives from a variety of disciplines, including, but not limited to, philosophy, law, management, economics, marketing, and public policy. Course work is designed to illustrate the ethical principles applicable in a business setting while considering policies concerning employees, customers, and the general public, and while building trust, commitment, and effort within the business organization.

### **BUAD 5053 - Software Applications in Business, 3 Credits**

Prerequisite(s):

Level: Upper

Software Applications in Business prepares students to analyze and solve real-life business problems using spreadsheet, database, word processing, and Web tools. It challenges students to use critical thinking, research, and analysis to find efficient and effective solutions to typical business situations. Students will be assigned case problems in accounting and finance, marketing, manufacturing, and human resources, and they will present the solutions in class.

### **BUAD 5900 - Directed Study - Upper Level, 1 to 6 Credits**

Level: Upper

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

### **BUAD 6003 - Managerial Finance, 3 Credits**

Prerequisite(s): ACCT 1124 with D or better and ACCT 2224 with D or better

Level: Upper

This course is a comprehensive examination of the theoretical and practical approaches to financial management. Analyzing, planning, controlling investment and short and long term financing are examined for decision-making purposes. Topics include: the financial environment, risk and rates of return, capital budgeting techniques, the cost of capital and capital structure, analysis of financial statements, financial planning and control, and ethics in finance.

### **BUAD 6113 - Strategic & Creative Prob Solv, 3 Credits**

Prerequisite(s): TMGT 7153 with D or better or BUAD 3153 with D or better

Level: Upper

This course is intended to provide the student with a basis for the analysis and application of creative problem techniques for issues that managers typically address in technology-based environments. Emphasis is on fostering creative thinking as a way to approach and solve problems, and analyze our thinking styles. Preparation and presentation of written and oral reports is required. The course offers an opportunity for students to practice communication of ideas and accomplishments through informal discussion, formal presentation, team decision-making and written case analysis. The applied case study problems explored in this course are based upon real and current industry problems.

### **BUAD 6213 - Business in the European Union, 3 Credits**

Level: Upper

The course describes how economic, political and social factors interrelate, and influence business in the European Union. Students will research sustainable business practices from different European Union member state's perspective. Guest lecturers and field trips are planned for students enrolled in the study abroad program.

**BUAD 6303 - Mktg & Commtng thru Socl Media, 3 Credits**

Prerequisite(s): ( CISY 1103 with D or better or CISY 1003 with D or better or CISY 1023 with D or better ) and ( BUAD 3153 with D or better or TMGT 7153 with D or better )

Level: Upper

Upon completion of this course, the student will understand the key concepts of social media and their application in today's business environment. This course is designed specifically to address business needs related to the design, development, and implementation of social media projects in areas such as customer relationship management (CRM), marketing and public relations, and internal organizational communication. In addition to the presentation of key concepts via lectures, this course will use case studies to illustrate business applications of social media, and hands-on projects in which students will create their personal social brand" online. Students will also work on a larger team project that involves the development of a social media project for a not for profit organization that is selected and approved in coordination with the faculty."

**BUAD 6403 - Proj Mgmt for Busi Profssnls, 3 Credits**

Prerequisite(s): ( CISY 1103 with D or better or CISY 1003 with D or better or CISY 1023 with D or better or BUAD 5053 with D or better ) and ( BUAD 3153 with D or better or TMGT 7153 with D or better )

Level: Upper

This course provides a comprehensive approach to project management tools and applications in an interdisciplinary and global environment. Emphasizing concepts, techniques, and principles associated with project management, this course is vital to students entering the management field. Students will be able to plan, schedule, budget, estimate, control, and monitor projects. In addition, they will become familiar with resource allocation, resource loading, CPM, CMM, GANTT, and PERT. The use of project management software to manage a personal case study project selected by the student will be a major component of the course.

**BUAD 7003 - Systems Thinking for Busi Prof, 3 Credits**

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

This course is an introduction to the key concepts of systems thinking applied to complex business challenges. The Systems Thinking course focuses on the interrelationships of elements within economic, social, political, technological, environmental, and other types of systems. This course is designed to help students understand and apply the principles of systems thinking in a business context to resolve complex issues and difficult problems.

**BUAD 7004 - Small Business Planning & Mgmt, 4 Credits**

Prerequisite(s): MKTG 2073 with D or better or BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

This course offers the student a step-by-step approach to starting and managing a small business. The course covers the fundamental principles of marketing, law, management, and office administration as applied to beginning a new venture. Each student will prepare a comprehensive individualized business plan to include a market profile, site analysis, competitive analysis, financials, goals and objectives, pricing and marketing strategies, and executive summary. A major focus of this course is to explore each step necessary in structuring and launching a new venture, and discussing ways of recruiting the necessary resources to accomplish this venture.

**BUAD 7013 - Business Succession Planning, 3 Credits**

Prerequisite(s): BUAD 5003 with D or better

Level: Upper

This course will explore the unique financial planning needs of small to medium size business owners. Special emphasis will be given to their common retirement, business succession, business valuation, and estate planning problems as well as the appropriate strategies and techniques utilized by planners to assist these clients in reaching their objectives.

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### **BUAD 7023 - Legal Environment of Business, 3 Credits**

Level: Upper

This course is designed to expose students to the legal environment within which businesses operate. It focuses on business' relationship with government agencies (public law issues) as well as with other businesses, consumers, suppliers, etc., (private law issues). The course specifically addresses the global, political, social, environmental and regulatory legal issues confronting businesses, with a special emphasis on the law of technology. It is intended to better equip the business manager for decision making by exploring the legal issues involved in contracts, torts, business organizations, employment law, the Uniform Commercial Code, intellectual property law and Constitutional Law. A variety of specific problems for business found within the law will be examined and analyzed through case briefs and studies, research projects and advocacy exercises. Students will have an opportunity to explore law related topics of particular interest to themselves with oral presentations to the class.

### **BUAD 7033 - Operations Management, 3 Credits**

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

Upon completion of this course, the student will understand modern (quantitative and qualitative) concepts in production management and their application to problems relevant to today's workplace, for both industrial and service organizations. This course specifically addresses the impact of operational decisions on the firm and emphasizes cross-functional decision making. The course essentially deals with the process design, delivery systems, quality management, ERP, inventory control, scheduling and management of transformation processes to create and deliver value to customers by identifying opportunities and direction for change. This course will cover the terminology, problems, concepts and tools associated with managing operations. Special topics include: supply chain management, e-operations, service blueprinting, competency-based strategy, Six Sigma, lean systems, and mass customization.

### **BUAD 7043 - Quantitative Prob Solvng Mthds, 3 Credits**

Prerequisite(s): MATH 1123 with D or better or MATH 2124 with D or better or MATH 1014 with D or better or MATH 1033 with D or better

Level: Upper

This course is an introduction to quantitative problem solving methods used in business applications. Topics include General Linear Programming and Sensitivity Analysis; Transportation, Assignment, and Transshipment Problems; Network Flow Algorithms; Project Scheduling; PERT/CPM; Inventory Models; Waiting Line Models; and Markov Processes. Software applications will be utilized whenever possible to aid students in the problem solving process.

### **BUAD 7273 - Organizational Behavior, 3 Credits**

Prerequisite(s): TMGT 7153 with C or better or BUAD 3153 with C or better

Level: Upper

This course is designed to create an understanding of the behavior of people in organizations. The purpose of this course is to improve the effectiveness of human resources, both at the individual's level and organizational level. Students will integrate their learning through active participation in experiential exercises, personal experiences, case analysis, and general behavior experiments and study. The course will also focus on personal growth and development.

### **BUAD 8003 - Management Info Systems - MIS, 3 Credits**

Prerequisite(s): ( CISY 1003 with D or better or CISY 1103 with D or better or CISY 1023 with D or better ) and ( BUAD 3153 with D or better or TMGT 7153 with D or better )

Level: Upper

This course focuses on a management perspective of information systems activity from development through implementation. The goal of this course is to help business students learn how to use and manage information technologies to revitalize business processes, improve business decision making, and gain competitive advantage. This course places major emphasis on up-to-date coverage of the essential role of Internet technologies in providing a platform for business, commerce, and collaboration processes among all business stakeholders in today's networked enterprises and global markets. This course places a major emphasis on the strategic role of information technology in providing business

professionals with tools and resources for managing business operations, supporting decision making, and gaining competitive advantage.

**BUAD 8013 - International Business, 3 Credits**

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

This course is an application of theoretical approaches to the globalization of business. Major concepts, tools, and processes will be explored through lecture, readings, team activities, and case study applications. Major topics include the examination of how businesses and managers focus and succeed in the global economy including an overview of the economic, political, legal, social, and cultural systems involved. Emphasis is given to the scope and theories of international business, the framework for international transactions, relations with host countries and host cultures, global business strategies, and the contrasting international management and ethical issues managers may face.

**BUAD 8023 - Strategic Management, 3 Credits**

Prerequisite(s): BUAD 3153 with D or better or TMGT 7153 with D or better

Level: Upper

This course is an application of theoretical approaches to Strategic Management. Major concepts, tools, and processes will be explored through lecture, readings, team activities, and case study applications. Major topics include: creating a competitive advantage; analyzing the external and internal environment of an organization; recognizing an organization's intellectual assets; developing business, corporate, and international level strategies; strategic control and corporate governance; creating organizational designs; creating a learning organization and an ethical organization; and managing innovation and fostering corporate entrepreneurship.

**CHEMISTRY**

**CHEM 1013 - Introductory Chemistry, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This non-laboratory course is designed for students who need to understand the basic concepts of chemistry. Students taking this course do not intend to pursue further courses in chemistry. Students will explore mathematical relationships using the factor labeling (conversion factor method), atomic and molecular structures (with emphasis on the special nature of carbon), pH, essential building block molecules, water, ions and ionization, and other topics of interest to those who live in our chemical world. Students cannot receive credit for CHEM 1013 if CHEM 1114 or CHEM 1984 is concurrently or previously taken.

**CHEM 1114 - General Chemistry I, 4 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is designed for science majors particularly focused in the health or agricultural areas who have had high school chemistry. It can be a terminal course in chemistry for those seeking an AAS in veterinary technology. Topical coverage includes: metric units and conversions, atomic theory, periodicity, electronic bonding models (Lewis, Pauling, Gillespie VSEPR), inorganic nomenclature, inorganic reactions (metathesis, acid-base, redox), stoichiometry and the mole concept, gas laws, phase transitions (phase diagrams, cooling curves, critical phenomena, heat capacities, intermolecular interactions), equilibrium (calculations involving K, Le Chatelier's principle) and elementary kinetics (Arrhenius model).

**CHEM 1984 - Chemical Principles I, 4 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is intended for physical science and engineering majors. While providing a general overview of modern chemistry, the course emphasizes the development of chemical concepts and problem-solving techniques that are essential in science. General topics include atomic structure of matter, chemical reactions, thermochemistry, electronic structure of the atom and chemical bonding.

**CHEM 2124 - General Chemistry II, 4 Credits**

Prerequisite(s): CHEM 1114 with D or better or CHEM 1984 with D or better

Corequisite(s):

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Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is a continuation of General Chemistry I and is intended for science majors. It completes the presentation of topics started in General Chemistry I by surveying the topics of: Acids & Bases, Electrochemistry and Nuclear Chemistry. After these foundations are laid, the course will then explore two broad chemical themes: 1) Organic Chemistry, where the language and chemistry of selected functional groups (alkanes, alkenes, aromatics, alcohols, aldehydes, ketones, amines, and carboxylic acids), along with an exploration of chirality will be covered and 2) Biochemistry, where the chemistry and structure of carbohydrates, lipids and proteins will be surveyed.

### **CHEM 2984 - Chemical Principles II, 4 Credits**

Prerequisite(s): CHEM 1984 with D or better or CHEM 1114 with D or better

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is a continuation of Chemical Principles I and is intended for physical science and engineering majors. Those basic concepts from the first semester are applied to more complex aspects of chemistry which include the states of matter, solutions, thermodynamics, equilibrium, electrochemistry and nuclear chemistry. In addition, the course is designed to have more out-of-class activities related to these topical areas which are completed by a team of students.

### **CHEM 3514 - Organic Chemistry I, 4 Credits**

Prerequisite(s): CHEM 2124 with D or better or CHEM 2984 with D or better

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is the first semester of a two semester sequence in organic chemistry and is a thorough introduction to the language, mechanisms, materials and concepts fundamental to organic chemistry. Lecture topics include: VSEPR and atomic orbital models; basic valence hybrid and molecular orbital theory; the language of stereochemistry; the basic 'activated complex' model of Eyring and Polanyi; free radical reactions, notably as they occur in alkanes; alkene preparation and synthesis; SN1 and SN2 substitution reaction pathways notably as they occur in alkyl halides and alcohols; E1 and E2 elimination pathways, notably as they occur for alcohols and alkyl halides; the stereochemistry and energetics of cycloalkanes, and an introduction to retrograde, multi-step synthesis. Lab skills taught include: principles and practice of simple, fractional and steam distillation; recrystallization, solvent extraction, melting point, refractive index determination, IR and GC instrumental characterizations of compounds. Students are also required to synthesize three different compounds, including a multi-step Grignard synthesis to 2-methyl-2 hexene starting from 2-propanone and 1-bromobutane.

### **CHEM 4524 - Organic Chemistry II, 4 Credits**

Prerequisite(s): CHEM 3514 with D or better

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is the second semester of a two semester sequence in organic chemistry starting with Organic Chemistry I. Lecture topics include: synthetic routes to and from unsaturated aliphatics, notably: alkenes, alkynes, allylic and alkadienes with emphasis on accompanying mechanistic pictures notably: radical and carbocation additions, concerted additions, radical substitutions; synthetic routes to and from substituted aromatic compounds with emphasis on the electrophilic substitution mechanism; synthetic routes to and from carbonyl compounds including: aldehydes, ketones, carboxylic acids and their derivatives with particular focus on the special role played by the beta hydrogen; a brief survey of reactions and properties of amines, ester enolates, and a survey of carbohydrate structure and chemistry. A thorough introduction to stereochemical language not covered in the first semester is also carried out. Lab topics include mastery of organic techniques not covered in the first semester, e.g. NMR and polarimetry, mass spectroscopy and, hands-on experience with the various reactions discussed in lecture, notably: ring substitution, cycloaddition, stereoaddition, carbonyl condensations, and esterification.

**CHEM 4800 - Selected Topics, 1 to 4 Credits**

Level: Lower

A program designed to provide an opportunity for pursuit of topics of chemistry beyond the scope of traditional courses. Investigations may be theoretical or experimental and may be pursued by individuals or groups of students. Instruction may be by independent study or formal lectures and/or laboratory sessions. Course may be repeated for a maximum of four hours credit.

**CHEM 4900 - Directed Study, 1 to 4 Credits**

Level: Lower

A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

**CHEM 5013 - Applied Chemical Principles, 3 Credits**

Prerequisite(s): MATH 1033 with C or better or MATH 1054 with D or better or MATH 1063 with D or better or MATH 1084 with D or better

Level: Upper

Course Attributes: Liberal Arts and Science

A one-semester course with lab intended to provide engineering students the background chemical knowledge needed to communicate effectively with colleagues, develop manufacturing methods, and solve industrial problems related to chemistry. Topics include: atomic theory, bonding, stoichiometry, acid-base chemistry, oxidation-reduction, gases, and nuclear chemistry.

**CHEM 5414 - Analytical Principles, 4 Credits**

Prerequisite(s): CHEM 2124 with C or better or CHEM 2984 with C or better

Level: Upper

This course is an in-depth examination of the chemistry and mathematical underpinnings connected to classical chemical calculations and wet chemical methods that form the foundation of modern quantitative chemistry. Using only a balance, buret and various classical volumetric devices, students will develop skills and understanding of gravimetric, titrimetric, complexometric, argentometric and redox methodologies. The course contains a thorough coverage of the manifold concentration systems and conversions as well as complete treatment of the details of equilibrium equations connected to precipitation, acid-base reactions, buffers, complexation and redox. Non-ideal corrections, notably Debye-Huckel theory, will also be covered.

**CHEM 6614 - Instrumental Analysis, 4 Credits**

Prerequisite(s): CHEM 4524 with D or better

Level: Upper

A rigorous and hands-on exposure to the fundamental thinking, hardware, and techniques common to instrumental analysis as performed in a modern chemical laboratory. The following methods are emphasized: visible, ultraviolet, and infrared spectroscopy, atomic absorption methods, nuclear magnetic resonance spectroscopy, mass spectroscopy, and gas and high pressure liquid chromatography. A survey of microscopy, calorimetry, and selected electronic and electrical concepts to instrumentation will also be included.

**CHEM 6854 - Physical Chemistry, 4 Credits**

Prerequisite(s): CHEM 2984 with C or better and PHYS 1064 with C or better and MATH 6114 with C or better

Level: Upper

This course provides students who plan future studies in forensic science technology, chemical sciences or chemical engineering a firm grounding in the quantum mechanical description of molecules, as well as a critical set of insights into thermochemical reasoning. The quantum mechanical focus will be on key model systems, notably the 1- and 2D particle-in-a box, the rigid rotor, the harmonic oscillator and hydrogen atom. Selected approximation methods applicable to multi-electron atomic systems and applications of

## COURSE DESCRIPTIONS

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infrared and visible spectroscopy will be explored, and students will be given experience in using current quantum calculation software to estimate optimal structures, predict IR spectra and estimate activated complex geometries. It is expected that students taking this course will have already taken a course of ordinary differential equations, but some of the course will also include mathematical excursions developing necessary mathematical tools, notably eigenvalue problems, series solutions of differentials and various matrix algebraic methods. The thermodynamic focus will be on efficiently developing the 4 laws of thermodynamics into useful forms whereby chemical equilibria and phase change of chemical systems can be predicted and described. A strong emphasis will be laid on using the practical chemical results of thermodynamic reasoning (K and Q predictions, Clausius-Clapeyron, Gibbs-Helmholtz and Nernst equation, phase rules and Gibbs-Duhem equations) rather than deriving the abstracted expressions of the several thermodynamic laws.

### **CHEM 7784 - Biochemistry, 4 Credits**

Prerequisite(s): CHEM 4524 with C or better and BIOL 2204 with C or better

Level: Upper

This course is a comprehensive course intended for science majors. Topics covered include the basic structure and reactions of biological compounds (carbohydrates, lipids, proteins, enzymes, and nucleic acids), the digestion and absorption of nutrients, bioenergetic principles, and catabolic and anabolic metabolism of major biochemicals in the human body. The laboratory exercises include classic techniques in isolation, purification and assay of proteins, enzymes (and kinetics), carbohydrates, lipids, and nucleic acids as well as polypeptide and polynucleotide sequencing and synthesis.

## **COMPUTER INFORM SYSTEMS**

### **CISY 1001 - Word Processing, 1 Credit**

Level: Lower

This course provides comprehensive exposure to contemporary word processing software, and will develop critical word processing skills. Emphasis will be on creating, editing, saving and printing written documents using current word processing applications software.

### **CISY 1003 - Intro to Microcomputer Appl, 3 Credits**

Level: Lower

An introductory course in business computing, focusing on microcomputer technology utilizing operating system commands, word processing, spreadsheets, and database software used in business organizations.

### **CISY 1011 - Spreadsheets, 1 Credit**

Level: Lower

This course provides comprehensive exposure to contemporary spreadsheet software, and will develop critical spreadsheet skills. Emphasis will be on creating, editing, saving and printing electronic spreadsheets.

### **CISY 1023 - Intro to Information Tech, 3 Credits**

Level: Lower

An introductory course in computer applications, focusing on microcomputer technology emphasizing file management utilizing various operating systems, operating system commands, spreadsheets, database, and other internet applications used in business and scientific environments. Students cannot earn credit for both CISY 1003 and CISY 1023.

### **CISY 1031 - Database, 1 Credit**

Level: Lower

This course provides comprehensive exposure to contemporary database software. Topics include: creating tables, sorting, queries, reports, and forms.



**CISY 1041 - Internet & The Electr Highways, 1 Credit**

Level: Lower

This course provides a comprehensive exposure to contemporary electronic communications. Emphasis will be on accessing the various networks and searching for relevant information using specific network programs and tools.

**CISY 1051 - Presentation Technologies, 1 Credit**

Level: Lower

This course provides comprehensive exposure to contemporary presentation graphics technology. Topics include: creating slides, changing text attributes, tables, charts, special effects, effective presentation techniques. This is a five week course.

**CISY 1061 - Office Integration, 1 Credit**

Prerequisite(s): CISY 1003 with D or better or CISY 1023 with D or better

Level: Lower

A comprehensive approach to the use of word-processing, spreadsheet, database and presentation software. Integrating office applications, internet tools in projects, and use more advanced features, techniques, and data format. Office applications are the products students are most likely to encounter in their careers. Integration feature helps students understand how different applications work together.

**CISY 1081 - Microcomputer Applications, 1 Credit**

Level: Lower

An introductory course in computer applications utilizing current software/network packages. Students will create documents to support traditional and electronic forms of communication. Major topics include: operating system/network commands, word processing, spreadsheets, and presentation software.

**CISY 1103 - Info Technology Management, 3 Credits**

Level: Lower

This course will introduce the student to multiple aspects of information technology management including: representing, storing, manipulating, and using digital information. Topics include: computer hardware and software fundamentals, essential applications, networking and the Internet, and computer user security and risks. Students will develop skills in collecting, analyzing, and using information from a variety of resources in order to complete class projects.

**CISY 1111 - IT Freshman Seminar, 1 Credit**

Level: Lower

Students will be introduced to and implement strategies for future employment. Students will be introduced to critical thinking and other skills that will make them successful in Computer Science, Computer Information Systems, and Information Technology programs. Students will complete a series of written assignments and classroom activities in career exploration, goals determination and evaluation, diversity in school and the workplace, professionalism, and critical thinking. Basics of library skills and internet-based research will be covered.

**CISY 1113 - Intro to Computer Programming, 3 Credits**

Corequisite(s):

Level: Lower

An introduction to and application of algorithmic processes. The development of solutions through a set of logical steps, including structured design and techniques will be emphasized. A high-level language will be used to implement these solutions on a computer. Students will write, debug, and execute programs in the business or scientific areas.

**CISY 1123 - Intro to Programming for IT, 3 Credits**

Corequisite(s):

## COURSE DESCRIPTIONS

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Level: Lower

An introductory programming course for information technology or CIS majors. The development of solutions through a set of logical steps and basic control structures (including selection and iteration) will be introduced. Students will write, debug and execute programs using a high level visual programming language.

### **CISY 1213 - Prob Sol Appr for Programmers, 3 Credits**

Level: Lower

This course is designed to enhance and develop problem-solving skills. It concentrates on creative problem solving by: (1) studying the process of problem-solving (2) solving a wide and progressively more difficult set of problems and (3) translating the manual solutions to computer programming or application software solutions. Both procedural and object-oriented problem solving methods will be used.

### **CISY 2023 - Desng Integrated MS Office Appl, 3 Credits**

Prerequisite(s): CISY 1123 with D or better and ( CISY 1023 with D or better or CISY 1003 with D or better )

Level: Lower

In this course, students will integrate Microsoft Office applications using VB.Net and Visual Basic for Applications. Topics addressed include object-oriented programming concepts using VB.NET and VBA as they pertain to the MS Office applications (including Word, Excel, Access, Outlook, and PowerPoint), creation of applets and toolbar objects within the applications, integration of MS Office applications (including Word, Excel, Access, Outlook and PowerPoint), distribution of applications using intranets and web pages, and design/testing/modifying/maintaining VB.NET forms used as front end interfaces that support user needs in small offices or businesses.

### **CISY 2063 - Microcomputer Database, 3 Credits**

Prerequisite(s): CISY 1003 with D or better or CISY 1023 with D or better

Level: Lower

A comprehensive exposure to the use of microcomputer database software concepts, capabilities and application; focusing on relational database techniques, database programming, and developing business application systems.

### **CISY 2143 - Microcomputer Systems I, 3 Credits**

Prerequisite(s): CISY 1003 with D or better or CISY 1023 with D or better

Level: Lower

This course provides an exposure to microcomputer operating systems and hardware. Topics include hardware, trouble- shooting, operating system commands, system utilities, memory managers, and graphical user interface (GUI) software.

### **CISY 2153 - Database Appl and Programng I, 3 Credits**

Prerequisite(s): CISY 1023 with D or better

Level: Lower

A comprehensive exposure to the use of database software concepts, capabilities and application; focusing on relational database techniques, SQL, normalization, database programming and developing application systems. A final/comprehensive project will be required.

### **CISY 2203 - Web Page Dev for Non-Majors, 3 Credits**

Prerequisite(s): CISY 1003 with D or better

Level: Lower

Students will be introduced to and implement web development strategies and technologies for college and future employment success. Designed for the non-IT major, the course will provide students with a broad overview of the Internet and the World Wide Web (WWW) focusing on general understanding of development themes, web design, and terminology. Students will develop client side software using Hypertext Markup Language (HTML) and industry standard composing software (such as Dreamweaver).

**CISY 3023 - Advanced Microcmpr Spreadshs, 3 Credits**

Prerequisite(s): CISY 1003 with D or better or CISY 1023 with D or better or CISY 1103 with D or better

Level: Lower

A comprehensive exposure to the use of microcomputer spreadsheet: concepts, capabilities and applications beyond the introductory level focusing on developing expertise in using a contemporary spreadsheet software package and companion products to develop business systems.

**CISY 3223 - Intro to Web Page Development, 3 Credits**

Prerequisite(s): CISY 1023 with D or better

Level: Lower

An introductory course in web page development with HTML and XHTML. Also included will be various software packages that automate the web page design process. These may include Dreamweaver, Front Page, and others. This course is suitable for anyone who would like to create simple, but useful web pages. Topics include: the internet, tables, frames, forms, scripting language(s), multi-media.

**CISY 3283 - Internetworking I, 3 Credits**

Prerequisite(s): CISY 1023 with D or better

Level: Lower

This is the first of two courses in a series to be offered covering the Cisco Academy semesters 1 and 2. Students will develop skills and knowledge in network media installation and testing, router and switch installation and configuration, and concepts of Local Area Networks (LANs) and Wide Area Networks (WANs). Instruction will be completed through on-line resources, lecture, and hands-on skills development. Students will be prepared for Cisco Certified Network Associate certification exams upon completion of both courses.

**CISY 4003 - Introductn to Data Structures, 3 Credits**

Prerequisite(s): CISY 4103 with D or better or CISY 1113 with D or better

Level: Lower

An introduction to the concepts and use of data structures and associated algorithms. Emphasis on algorithm comparison, design of data organization, and a matrix of issues involving running time and space limitations inherent in data structure and algorithm implementation. Techniques of analysis and design of algorithms involving searching, sorting recursion, and machine/memory management.

**CISY 4023 - Computer Programming in C, 3 Credits**

Prerequisite(s): CISY 1113 with D or better or CISY 1123 with D or better

Level: Lower

Introduction to the C programming language and the use of the computer to solve business, scientific, and hardware control problems. Development of problem-solving skills using C will be emphasized. Topics include: functions, input-output functions, operating system interface, control structures, arrays, strings, pointers, storage classes, and structures.

**CISY 4033 - Networking I, 3 Credits**

Prerequisite(s): ( CISY 1113 with D or better or CISY 1123 with D or better ) or ELET 1102 with D or better or ELET 1003 with D or better

Level: Lower

This is an introductory course in networking with a survey and evaluation of network media, access methods, topologies, and terminology. Topics will include end user perspective, network cabling, hardware and software protocols, internetworking, network operating systems, and system administration. Included will be basic server installation, configuration, and management. A variety of workstation and server operating systems will be explored through extensive hands-on labs.

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### **CISY 4053 - Linux/Unix Admin and Scripting, 3 Credits**

Prerequisite(s): CISY 4033 with D or better or ELET 4114 with D or better or ELET 2012 with D or better

Level: Lower

This course will take a more in depth look at Linux and Unix-like system administration. This will include console and graphical interfaces. Major topics include file systems, text processing, installation, system configuration, software packages, network configuration, backup, and kernel management. A significant portion of the course will concentrate on script analysis and creation. Laboratory exercises will provide hands-on exercise in each of these topics.

### **CISY 4063 - Systems Analysis & Design, 3 Credits**

Prerequisite(s): CISY 1113 with D or better or CISY 1123 with D or better

Level: Lower

This course is designed to identify and apply the fundamental concepts underlying all information systems. Emphasis is on the structured life-cycle development approach in the design of computer-based information systems. Current tools and techniques are applied to a case study project.

### **CISY 4103 - Visual Programming & Developmt, 3 Credits**

Prerequisite(s): CISY 1113 with D or better or CISY 1123 with D or better

Level: Lower

A visual programming environment will be used in a continuation of Computer Programming I. Emphasis will be placed on advanced algorithms, program design and development. Topics included will be sub-programs, arrays, files, and data abstraction. Debugging and proper program design and documentation will be stressed.

### **CISY 4283 - Internetworking II, 3 Credits**

Prerequisite(s): CISY 3283 with D or better

Level: Lower

Students will develop skills and knowledge in network media installation and testing, router and switch installation, and concepts of Local Area Networks (LANs) and Wide Area Networks (WANs). Instruction will be completed through on-line resources, lecture, and hands-on skill development. Students will be prepared for Cisco Certified Network Associate certification exams upon completion of CISY 3283 and this course.

### **CISY 4900 - Directed Study, 1 to 4 Credits**

Level: Lower

A capstone course which provides an integrative experience in applying the knowledge and skills of earlier course work, with particular emphasis on computer science management information systems, and communications skills in an integrated/internship setting; requires student to present and defend, orally and in writing, solutions to experienced real-world problems encountered.

### **CISY 5123 - Scientific Prog in C and C++, 3 Credits**

Prerequisite(s): or MATH 1033 with D or better

Level: Upper

Students will learn structured and object-oriented programming techniques to solve scientific and engineering applications using the C and C++ programming languages. Topics include data types and structures, control structures, I/O pointers, program design and maintenance, and programming techniques.

### **CISY 5133 - Sec Policies, Recov & Risk Man, 3 Credits**

Prerequisite(s): CISY 1113 with D or better or CISY 1123 with D or better

Level: Upper

Students will be introduced to security policies, the tools and techniques used in security management, and risk management procedures. They will analyze risk and security threats in the organization as well as manage, test, and establish security policy. Topics such as

information protection, code of practice for information security, risk management, security awareness and security evaluations will be explored. A final project in security assessment will be required.

**CISY 5203 - Network Administration, 3 Credits**

Prerequisite(s): CISY 4033 with D or better or ELET 2012 with D or better

Level: Upper

Students will use a variety of network management tools to manage, monitor, support and troubleshoot network operations. Topics will include performance issues, end-user accounts, data security, disaster recovery, supporting applications, and documentation.

**CISY 5233 - Human Computer Interaction, 3 Credits**

Prerequisite(s): CISY 4103 with D or better and CISY 3223 with D or better

Level: Upper

This course will cover the design, prototyping, and evaluation of user interface to computers. This will include the implementation of interactive computing systems for human use and the study of major phenomena surrounding them. In addition, the course will stress the importance of good interfaces and the relationship of user interface design to human-computer interaction within multi-disciplinary dynamics. Example systems, case studies, methodologies and models will be used to demonstrate the concepts and the importance of human computer interaction.

**CISY 5303 - Web Programming I, 3 Credits**

Prerequisite(s): CISY 1113 with D or better or CISY 1123 with D or better and CISY 2153 with D or better

Level: Upper

A comprehensive survey of HTML and web publishing software to create robust, functional web pages. This course will examine HTML standards, browser capabilities, information architecture, bandwidth considerations, image format, maps, frames, forms, and server/client side scripting. Topics of current interest will be included, such as: JavaScript, VBScript, ActiveX, Active Server Pages, Dynamic HTML, and Cascading Style Sheets.

**CISY 5313 - Surv in Web Pg Dev for Non-Maj, 3 Credits**

Prerequisite(s): CISY 1003 with D or better

Level: Upper

Students will be introduced to and implement web development strategies and technologies for college and future employment success. Designed for the non-IT major, the course will provide students with a broad overview of the Internet and the World Wide Web (WWW) focusing on general understanding of development themes, web design, and terminology. Students will develop client side software using Hypertext Markup Language (HTML) and industry standard composing software (such as Dreamweaver).

**CISY 5403 - Database Concepts, 3 Credits**

Prerequisite(s): CISY 2153 with D or better

Level: Upper

This course is a study of the terminology, design, implementation and software associated with database systems. Topics include the need for database management systems, file organization, sequential and direct access methods and physical implementation. Other topics covered are relational database design, entity and semantic models, hierarchical and network models, SQL, database applications using the internet, and sharing enterprise data. Students will design, implement, test, and debug database management systems according to industry standards.

**CISY 5603 - Database Administration, 3 Credits**

Prerequisite(s): CISY 4053 with D or better and CISY 5403 with D or better

Level: Upper

This course introduces tools and techniques used in Database Administration. Students will be introduced to the Client/Server Database environment. Students will utilize database implementation and administration tools. Students will manage, test, and establish

## COURSE DESCRIPTIONS

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client-server communication and server-server communication with single or multiple database servers. Topics such as schema implementation, storage allocation and management, user creation and access security, backup and recovery, and performance measurement and enhancement will be explored.

### **CISY 5613 - UNIX/Linux Server Admin, 3 Credits**

Prerequisite(s): CISY 4053 with D or better

Level: Upper

This course will introduce students to the techniques and practices associated with the installation, configuration, troubleshooting, and maintenance of a UNIX/Linux based network. Students will create an operational UNIX/Linux server within a network domain to support DNS, DHCP, gateway, file, print, and other services. Applications will be installed and supported for network users. Operational practices including security, user and group management, backups, logging, script use, and documentation will be addressed as a final project.

### **CISY 5723 - Essentials of Info Security, 3 Credits**

Prerequisite(s): CISY 4033 with D or better or ELET 2012 with D or better

Level: Upper

This is a comprehensive survey of all aspects of computer security. This will include local host, network, web, database security as well as other objects that are prone to attack. The student will focus on the identification of security threats and countermeasures that can be taken to make these systems more secure. Students will develop a security plan for a small to mid-size company.

### **CISY 5900 - Directed Study, 1 to 6 Credits**

Level: Upper

A capstone course which provides an integrative experience in applying the knowledge and skills of earlier course work, with particular emphasis on computer science management information systems, and communications skills in an integrated/internship setting; requires student to present and defend, orally and in writing, solutions to experienced real-world problems encountered.

### **CISY 6103 - Web Server Administration, 3 Credits**

Prerequisite(s): CISY 4053 with D or better and CISY 3223 with D or better

Level: Upper

This is a comprehensive survey of all aspects of web server administration. Students will gain hands-on experience by actually installing and administering their own web servers. Topics include: server installation and configuration, site planning, supporting dynamic content, security, and maintenance.

### **CISY 6123 - Adv Pro wth Vid Game Des & Dev, 3 Credits**

Prerequisite(s): CISY 4003 with D or better or CISY 6503 with D or better

Level: Upper

This course is an advanced study of programming using current tools to create video games. Topics covered include higher-level programming techniques, writing programs that use the windows user interface, and creating and using graphic objects. The gaming topics of data structures and algorithms, artificial intelligence, physics modeling, and mathematics will also be covered. A final project will be required incorporating AI and physics.

### **CISY 6503 - Object-Oriented Programming, 3 Credits**

Prerequisite(s): CISY 4103 with D or better

Level: Upper

Object-oriented analysis (OOA) and object-oriented design (OOD) concepts will be covered using an object-oriented programming (OOP) language such as Java. Topics include: objects, messages, classes, encapsulation, inheritance, polymorphism, code reuse, and method-driven and model-driven object-oriented approaches, methodologies and tools. Students will formulate object solutions to practical problems in the business and scientific

areas.

**CISY 6603 - Intro to Software Engineering, 3 Credits**

Prerequisite(s): CISY 6503 with D or better

Level: Upper

This course will give students both a theoretical and a practical foundation in software engineering. In the theoretical part, students will learn about the principles and methods of software engineering, including current and emerging software engineering practices and support tools. In the practical part, students will become familiar with the development of software products from an industry perspective, including generation of appropriate documents, under tight schedules and limited resources. A final project is required.

**CISY 6703 - Network Design Concepts, 3 Credits**

Prerequisite(s): CISY 4033 with D or better \*

Level: Upper

In this course students will design and implement network systems, utilizing various topologies, media, and protocols. Students will control network hardware such as bridges, switches, hubs, and routers. Design concepts will be implemented through a variety of laboratory exercises. Students will be required to create and defend a network design plan.

**CISY 7003 - Project Management, 3 Credits**

Prerequisite(s): CISY 1003 with D or better or CISY 1023 with D or better or CISY 1113 with D or better or CISY 1123 with D or better or BUAD 5053 with D or better

Level: Upper

A comprehensive approach to project management tools and applications in an interdisciplinary and global environment. Emphasizing concepts, techniques, and principles associated with project management, this course is vital to students entering the IT management field. The course will focus on the changes in the computing environment including hardware, software, and networking. Students will be able to plan, schedule, budget, estimate, control, and monitor projects. In addition, they will become familiar with resource allocation, resource loading, CPM, CMM, GANTT, and PERT. The use of project management software will be a major component of the course.

**CISY 7013 - Network & Host Security, 3 Credits**

Prerequisite(s): CISY 5723 with D or better and ( CISY 4043 with D or better or CISY 4053 with D or better )

Level: Upper

This course will provide a practical, hands-on approach to the securing of both hosts and networks. It includes host and network hardening techniques, as well as planning and implementation for wireless network security. A variety of client and network operating systems will be used. This course assumes a prerequisite knowledge of network operating systems and introductory security concepts. A major network security project is a requirement of the course and will be presented in written and oral formats.

**CISY 7023 - Compu Forensics & Legal Issues, 3 Credits**

Prerequisite(s): CISY 5203 with D or better or CISY 4053 with D or better

Level: Upper

This course will provide a practical, hands-on approach to the process of scientifically retrieving, examining and analyzing data from computer storage media so that data can be used as evidence in court. The course assumes a prerequisite knowledge of network operating systems and security concepts. A final project will be required.

**CISY 7033 - Security Tools, 3 Credits**

Prerequisite(s): CISY 5203 with D or better or CISY 4043 with D or better or CISY 4053 with D or better

Level: Upper

This course will emphasize deploying secure wireless networks and protecting them from unauthorized intrusions. The course provides a practical, hands-on approach to a myriad of security tools employed in wired and wireless networks. These security tools will include

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Industry Standard Firewalls, Virtual Private Networks (VPNs), wired network vulnerability scanners, wireless security probes, wireless intrusion detectors, wireless scanners and wireless encryption cracking utilities. Firewall advanced concepts and technologies will be covered in depth and include design considerations for enterprise networks, large company networks and medium business networks. The course will include VPN concepts, technologies, and configurations for site to site VPNs as well as configurations for client remote access VPNs. The course will cover various vulnerability scanners for networks with heterogeneous operating systems and advanced firewall configurations. Students, in a laboratory environment, will attack and defend networks and submit a project paper detailing lessons learned and how to best defend both wired and wireless networks. The course assumes a prerequisite knowledge of network operating system and security concepts.

### **CISY 7103 - Multi-Media Computing, 3 Credits**

Prerequisite(s): CISY 5303 with D or better

Level: Upper

This course is a study of the simultaneous control of media elements within a Web-based environment including graphic, hypertext, digital audio, CD audio, MIDI, digital video and animation. Students will learn and apply the process of creating participant interactive and self-running computer presentations. Focus will be on building web applications with multi-media content, while considering HCI (human computer interaction) issues. Various software packages will be used, such as: Dreamweaver, Flash, Pro Tools and Fireworks. A major web application project with multi-media content is a requirement of the course.

### **CISY 7203 - Web Programming II, 3 Credits**

Prerequisite(s): CISY 5303 with D or better

Level: Upper

A survey of programming languages and techniques for Web development. Topics include CGI'S (Common Gateway Interface), client side programming with JavaScript, dynamic content using Java and ActiveX, server side programming using Active Server Pages and VBScript, creating dynamic database driven content, and developing web based client/server database applications.

### **CISY 8303 - Sftw Intgtn & Interoperability, 3 Credits**

Prerequisite(s): CISY 6703 with D or better and CISY 5723 with D or better

Level: Upper

In this course, students will integrate network system components to construct a working enterprise network. Topics addressed include integration of different network topologies, interoperability between network operating systems, integration of client-server applications, web based information systems, other support systems and support of end-user needs.

### **CISY 8403 - Web Applications, 3 Credits**

Prerequisite(s): CISY 7203 with D or better

Level: Upper

In this capstone course, students will create web based multi-media applications for companies and/or organizations. These applications will demonstrate client and server side design, programming and maintenance. Additional topics include: systems development life cycle, web-site hosting and administration, e-commerce, integrated software applications, and server administration aspect of their applications. These applications will include at a minimum a fully functional e-commerce site and an integrated software application site. Students will also be exposed to creating these applications within both individual and group settings and utilize the skills they have developed in earlier course work. The applications will involve projects from outside the academic classroom in which the students experience both a management and employee role as well as consulting role. This course will help meet the growing demands of companies seeking professionally trained demands of companies seeking professionally trained employees with a full complement of web development skills.

### **CISY 8503 - Appl Database Management, 3 Credits**

Prerequisite(s): CISY 5403 with D or better and CISY 6503 with D or better



Level: Upper

In this capstone course, students will create and maintain Database Applications in a commercial and/or academic setting. This course provides an integrative experience in applying the knowledge and skills of earlier course work, focusing on multi-user database systems. A major portion of this course will be design, implementation, and documentation of an enterprise data system. Additional topics include: systems development life cycle, web applications, and application reliability and security.

**CISY 8603 - Seminar Critical Issues in IT, 3 Credits**

Prerequisite(s): CISY 4103 with D or better

Level: Upper

This is a research-oriented and performance-oriented course. The course addresses critical (both theoretical and pragmatic) issues in information technology (IT). Issues of concern may include, but are not limited to, IT systems security, ethics of using IT systems, human-IT systems interface, and data analysis requirements at different organizational levels. Students are expected to conduct research, present their findings, accept feedback on their presentations, and document their knowledge of their topics. Students will also complete a project working with a cross-disciplinary team and prepare strategies/materials for an effective job search. Every student is expected to attend all class presentations and guest speaker sessions.

**CISY 8703 - Information Security Capstone, 3 Credits**

Prerequisite(s): CISY 5133 with D or better

Level: Upper

In this course, students will integrate, configure and analyze network system components, security tools and procedures necessary to create enterprise class network security perimeters. Topics addressed include a combination of open source and proprietary security applications covering the fundamental components of an effective network security perimeter. These components include: firewalls, Intrusion Detection Systems (IDSs), Intrusion Prevention Systems (IPS) Virtual Private Networks (VPN), authentication systems, port scanning, vulnerability scanning penetration testing, disaster recovery systems and security management systems. An in-depth analysis of the security risks associated with the TCP/IP protocol and associated sub-protocols will also be included as part of a final project.

**CISY 8706 - Info Technology Internship, 6 Credits**

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of information technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. Two papers will be completed in each of the 6 hour internships. These courses are offered as a two-part alternative to CISY 8712. 8706 and 8716 are to be taken in sequence as two 6 credit hour classes. These 12 hours will be equivalent of CISY 8712. Students may not enroll in CISY 8712 and CISY 8706 / 8716.

**CISY 8712 - Info Technology Internship, 12 Credits**

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of information technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship

## **COURSE DESCRIPTIONS**

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in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends.

### **CISY 8716 - Info Technology Internship, 6 Credits**

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of information technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. Two papers will be completed in each of the 6 hour internships. These courses are offered as a two-part alternative to CISY 8712. 8706 and 8716 are to be taken in sequence as two 6 credit hour classes. These 12 hours will be equivalent to CISY 8712. Students may not enroll in CISY 8712 and CISY 8706 / 8716.

## **CIVIL ENGINEERING TECH**

### **CIVL 1011 - Civil AutoCAD, 1 Credit**

Level: Lower

This course will give the student the basic skills necessary to complete dimensioned drawings in AutoCAD. Topics include: setting up a drawing, basic lines and coordinates, geometric shapes, layering, editing commands, dimensioning, creating text, hatching and plotting to scale.

### **CIVL 1013 - Portland Cement Concrete, 3 Credits**

Level: Lower

This course is an introduction to aggregates and concrete as construction materials. Standard techniques of measurements and computation are presented, and then applied to testing materials. Portland Cement Concrete is studied with emphasis on quality control in the field and preparing the student to reach the level of Concrete Field Testing Technician Grade 1, by the American Concrete Institute. Concrete masonry block is also reviewed as a product of cement.

### **CIVL 1023 - Construction Materials & Appli, 3 Credits**

Level: Lower

This course is designed to introduce the student to construction materials commonly used in the construction of commercial and residential structures. The emphasis will be on wood, masonry, concrete, soils and structural steel. Students will study the physical properties of the materials as well as how the materials are manufactured to produce a satisfactory product for the construction process.

### **CIVL 1182 - Civil Technology Graphics, 2 Credits**

Level: Lower

This is an introductory course in construction/civil/surveying graphics. The student will be introduced to scales, dimensioning, surveying maps, house plans, building codes, and construction terminology. Contour maps, wall sections, foundation plans, floor plans, and house elevations will be drawn and plotted using AutoCAD.

### **CIVL 1204 - Surveying I, 4 Credits**

Level: Lower

This course is a study of the fundamentals of plane surveying. Emphasis is on the use and care of transit, level, tape and leveling rod, note keeping and basic surveying calculations and adjustment of data. The course is designed to introduce measurement techniques through applications in an outdoor laboratory environment.

**CIVL 2154 - Quality Control of Const Matl, 4 Credits**

Level: Lower

This course equips the student with entry level skills as a quality control technician in Soil and Asphaltic Concrete. Students will design and test asphaltic concrete mixes using industrial procedures and standards. Soil classification, permeability, sampling, and composition are studied and applied in laboratory.

**CIVL 2204 - Surveying II, 4 Credits**

Prerequisite(s): CIVL 1204 with D or better

Level: Lower

This is the second course of a two semester sequence emphasizing plane and route surveying theory and techniques. Emphasis will be on circular curves, vertical curves, profiling, cross-sectioning, realignment of circular curves, the spiral, earthwork calculations, construction stakeout procedures and an introduction to electronic distance measurement.

**CIVL 3204 - Legal Asp & Prac of Land Surv, 4 Credits**

Prerequisite(s): CIVL 2204 with D or better

Level: Lower

In this course students will develop an understanding of the professional land surveyor's role in society, the professional land surveyor's legal responsibility to the public, systems used to describe real property, types of transfer of real property, techniques of record research, and locating sequential and simultaneous real property conveyances.

**CIVL 3214 - Control Surveying, 4 Credits**

Prerequisite(s): CIVL 2204 with D or better

Level: Lower

This course emphasizes the techniques of precise horizontal and vertical control surveying used by government of private surveyors and engineering consultants. Use of directional theodolites, precise levels and total station measurement equipment are stressed. Projects are used to present underlying theory of field work, standards, specifications, and adjustment of horizontal and vertical data.

**CIVL 3554 - Comm Bldg Const Methods & Prac, 4 Credits**

Prerequisite(s): CIVL 1013 with D or better and CIVL 1182 with D or better

Level: Lower

This course is a study of materials and methods of construction employed in commercial building construction. This course will be used to extend the students' graphics skills as well as their knowledge of the building construction process. Approximately equal emphasis will be placed on foundation, steel frame and reinforced concrete construction. Throughout the course, attention will be given to sustainability of construction materials and methods.

**CIVL 4104 - Structural Technology, 4 Credits**

Prerequisite(s): ( PHYS 1024 with D or better or PHYS 1044 with D or better ) and ( MATH 2043 with D or better or MATH 1054 with D or better or MATH 1084 with D or better or MATH 1063 with D or better )

Level: Lower

This course provides the students with a quantitative understanding of the effect of loads on structural elements in a building. Principles of structural mechanics are covered from forces and stress to properties of section, and finally to shear and bending moments on beams. The designs of basic timber and steel beams and columns are also presented.

**CIVL 4143 - Contracts, Specs, & Estimating, 3 Credits**

Prerequisite(s):

Level: Lower

This course is a study of contracts and specifications governing contractors in the construction phase of a project. Practice is given in the estimating of earthwork, masonry, concrete, steel, and wood. Students progress through manual takeoffs to electronic

## COURSE DESCRIPTIONS

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spreadsheets. At the completion of this course the student will be able to create an estimate for a construction project.

### **CIVL 4144 - Construction Management, 4 Credits**

Level: Lower

This course is a study of the business organizations, contracts, personnel and ethics used in construction projects. Topics include the stakeholders, contracts, cost accounting, construction documentation, planning and scheduling, bonding, insurance, labor relations and ethics as specifically experienced in the construction industry.

### **CIVL 4164 - Hydraulics and Drainage, 4 Credits**

Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better

Level: Lower

A basic study of fluid statics and fluid flow emphasizing applications in civil engineering technology. Topics include pressure forces on submerged surfaces, closed conduit incompressible flow, centrifugal pump performance, open channel flow, rainfall and run-off estimates. The laboratory sessions involve the use of equipment to measure pressure and flow.

### **CIVL 4204 - Subdivision Theory & Appli, 4 Credits**

Prerequisite(s): CIVL 3204 with D or better

Level: Lower

This course is an introduction to the U.S. Public Lands Survey System, the laws of simultaneous conveyances, and subdivision of lands. Governmental regulations and environmental considerations will be addressed. Industry standard software will be utilized in the laboratory.

### **CIVL 4214 - Surveying Practicum, 4 Credits**

Prerequisite(s): CIVL 3214 with D or better and CIVL 3204 with D or better

Level: Lower

This course is a series of field and office problems for fourth semester AAS Surveying Engineering Technology majors only. Topics include research, field reconnaissance, data collection, deed interpretation, and mapping. Students are responsible for the execution of a comprehensive surveying project.

### **CIVL 4243 - Surveying Computer Appli, 3 Credits**

Prerequisite(s): CIVL 1202 with D or better and CIVL 2204 with D or better and CIVL 3124 with D or better

Corequisite(s):

Level: Lower

This class is an introduction to the concepts of field to office automation, the use of coordinate geometry (COGO) software programs and computer aided drafting (CAD) software programs. Emphasis will be placed on the use of the computer in the solution of problems and projects that stress data analysis, data adjustment, mapping calculations and the application of computer graphics.

### **CIVL 4273 - Photogrammetry, 3 Credits**

Prerequisite(s): CIVL 3214 with D or better

Level: Lower

This course will introduce the advantages of photogrammetry as a mapping and planning tool. The types of photography, photo scale, flight planning techniques and specifications, displacement calculations and stereoscopic measurement are covered.

### **CIVL 4293 - Transportation Engr Technology, 3 Credits**

Prerequisite(s): CIVL 1204 with D or better

Level: Lower

This course introduces students to transportation systems in the U.S. and Canada,

transportation planning and economics, surveys and plans, rights-of-way, traffic engineering, highway drainage, and the development of roadsides, highway subgrades, base courses, stabilization, as well as the fundamentals of maintenance.

**CIVL 4900 - Directed Study, 1 to 4 Credits**

Level: Lower

Special course organized to enable students to elect independent study of engineering problems. Course may entail laboratory or analytical solution of problems or application of principles to engineering problems.

**CIVL 5104 - Geological Engineering Tech, 4 Credits**

Prerequisite(s): PHYS 1024 with D or better

Level: Upper

This course is a first course in geology with applications to engineering projects. Topics include the origin of rocks with their general characteristics, structural features of rocks, surface and subsurface waters, wave actions and shore currents, lakes, oceans and glaciers.

**CIVL 5114 - Land Surveying, 4 Credits**

Prerequisite(s): CIVL 3204 with D or better

Level: Upper

This course is a study of licensure requirements, professional liability and ethics in land surveying. The legal concepts of the rules of evidence are presented and applied to written and unwritten transfers of land ownership. Riparian rights, fractional conveyances, reversionary rights, problems of apportionment, procedures, both field and office, for locating written title boundaries and the writing of deed descriptions are discussed in both a theoretical and applied sense.

**CIVL 5213 - Foundations and Concrete, 3 Credits**

Prerequisite(s): CIVL 4104 with D or better

Level: Upper

This course introduces students to basic design principles of reinforced concrete structural members such as beams, slabs, and walls. Topics will include bending of single and doubly reinforced beams, T-beams, and slabs, as well as shear design of these members. The design of development length and splicing of reinforcing bars in the members will be included as well. Methods and materials used in concrete work will be discussed with attention given to the materials and methods of formwork construction.

**CIVL 5900 - Directed Study, 1 to 6 Credits**

Level: Upper

Upper division independent study.

**CIVL 6104 - Anlys & Adjmnts of Surv Mrmnts, 4 Credits**

Prerequisite(s): MATH 2074 with D or better or MATH 2094 with D or better

Level: Upper

This course is an introductory treatment of the adjustment of survey data incorporating the use of the computer and matrix algebra. Error propagation, least-squares adjustment methods and the analysis of survey measurements are covered. A final project will consist of adjusting survey data.

**CIVL 6113 - Environmental Tech Concepts, 3 Credits**

Prerequisite(s): MATH 1033 with D or better

Level: Upper

This course focuses on environmental technology systems. Topics covered in the course include: basic environmental concepts, water quality, water pollution, drinking water, stormwater management, wastewater treatment, municipal solid waste, hazardous waste, air pollution, noise pollution, erosion control and environmental assessments. The student will analyze a site plan to determine the best practice" solutions to storm water management challenges using industry standards. Leadership in Energy and Environmental Design

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### **CIVL 6123 - Advanced Mechanical Systems, 3 Credits**

Prerequisite(s): CIVL 3554 with D or better

Level: Upper

An introduction to building equipment for single and multi-story projects including domestic water, sewer, heating and ventilating systems. Students will design these systems for a residence or small office building. Students will review blueprints and analyze systems for a large commercial building.

### **CIVL 6212 - Construction Safety, 2 Credits**

Prerequisite(s): CIVL 3554 with D or better

Level: Upper

This course is a comprehensive study of the requirements of an effective safety program that focuses on worker safety, improved productivity and accident risk management. The course will also provide students with an understanding of the Occupational Safety Health Administration (OSHA) standards and their application to the construction industry.

### **CIVL 6214 - Advanced Estimating, 4 Credits**

Prerequisite(s): CIVL 4143 with D or better

Level: Upper

The foundation of this course is the development of an estimating database. Students will use data base estimating software in construction estimating. Students will gain experience in estimating commercial building projects and heavy civil projects, as well as lump sum and unit price contract estimating. The course will involve several project based learning experiences.

### **CIVL 6313 - Green Bldg from Contr Perspctv, 3 Credits**

Prerequisite(s): CIVL 3554 with D or better

Level: Upper

This course is an overview of how green building will impact contracts and building in the construction industry. As the nature of green building is continually emerging and evolving, field research will be required of students. Topics in LEED, leadership in energy efficient design, and their impact on contractors will be presented.

### **CIVL 7001 - Sr Seminar & Project Design I, 1 Credit**

Level: Upper

This course is the first of a two semester sequence required for all Land Surveying Engineering Technology Bachelor seniors. Students design and implement a technical project for completion of BSET 8003. Project proposal and oral reports are presented for initial approval by department faculty. The weekly seminar encompasses professional licensure examination preparation, aspects of post graduation professional employment, review of initial project proposal and consultation on project progress.

### **CIVL 7104 - Land Development and Design, 4 Credits**

Prerequisite(s): CIVL 2204 with D or better and MATH 2043 with D or better and PHYS 2023 with D or better

Level: Upper

This course is intended to give the Civil Engineering Technology student an understanding of the issues related to site development and drainage issues for land development. Students will study and create land development plans including drainage calculations, street and road design, water distribution, and sewer design. Issues related to sustainable development will be integrated into the topics to provide the student with an appreciation of concerns related to energy, as well as material and land conservation. Laboratory experiences will include experiments related to fluid flow, computer analysis of laboratory data, and computations including the development of spreadsheet programs to be used in the designs covered.

### **CIVL 7114 - Geographic Information Systems, 4 Credits**

Prerequisite(s): CIVL 6104 with D or better and ( MATH 5014 with D or better or MATH 6114 with D or better )

Level: Upper

This course is a broad-based introduction to GIS, especially the application of spatial analysis and modeling. Applications will cover hardware and software considerations, map overlays, automation in thematic and topographic mapping, raster/vector devices, data acquisition, and related database storage and algorithms. Advanced topics will include error modeling, data uncertainty, and new directions and impacts of GIS.

**CIVL 7213 - Construction Systems, 3 Credits**

Prerequisite(s): CIVL 4143 with D or better

Level: Upper

This course examines how people and machines interact to build efficient systems that improve productivity in the construction industry. This course will document existing and emerging construction systems and will delve extensively into the production capacity and uses of construction equipment. This course culminates with a project to design equipment spreads for an earthwork project.

**CIVL 7223 - Construction Project Planning, 3 Credits**

Prerequisite(s): CIVL 3554 with D or better

Level: Upper

Students will develop a construction project management logic diagram for large multi-phased projects. The students will use software for scheduling, monitoring, and crashing" projects to evaluate alternatives to reduce time to completion and to ensure cost effectiveness and safety considerations."

**CIVL 8003 - Sr Seminar & Project Design 2, 3 Credits**

Prerequisite(s): CIVL 7001 with D or better

Level: Upper

In this course students implement a capstone technical project proposed and designed in CIVL 7001. Each student must do research, prepare a plat/map, conduct a formal oral presentation and submit a comprehensive written report.

**CIVL 8104 - Satellite & Geodetic Surveying, 4 Credits**

Prerequisite(s): MATH 6114 with D or better or MATH 4114 with D or better

Corequisite(s):

Level: Upper

This course will introduce, and/or review the main concepts of a number of advanced subjects from the surveyor's perspective - for example: geodesy, geodetic surveying, map projections, global positioning systems, hydrographics surveying, mine and mineral surveying, deformation studies, total station/data collector interfaces to computer, as well as a projection of future trends. Pertinent activities from the professional associations will also be addressed.

**CIVL 8123 - Construction Project Admin, 3 Credits**

Prerequisite(s): CIVL 4144 with D or better

Level: Upper

This course is an in depth study of the documents and processes for construction project administration, including submittals, subcontracting, expediting, pay procedures, closeout, and reporting. This course culminates in a simulated construction project where students assume various stakeholder roles.

**CIVL 8800 - Civil Eng Tech Elective, 1 to 6 Credits**

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study or project. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the progress of the study.

**CIVL 8801 - Directed Study, 6 Credits**

Level: Upper

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study or project. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the progress of the study.

**CRIMINAL JUSTICE****CJUS 1003 - Intro to Criminal Justice, 3 Credits**

Level: Lower

This course offers an overview of the administration of criminal justice in the United States. Problems of crime prevention and control in American society are emphasized. The course prepares students for further study in criminal justice, for career development in an agency of

## COURSE DESCRIPTIONS

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criminal justice. or for knowledgeable citizenship.

### **CJUS 6003 - Law & Criminal Evidence, 3 Credits**

Prerequisite(s): CJUS 1003 with D or better or SOCI 1243 with D or better

Level: Upper

The course examines the origin, development, philosophy, and legal bases of evidence, including a brief survey of the system of constitutional and procedural rules and standards affecting evidence collection and admissibility. Specific topics include evidence collection and preservation, the trial process, expert and lay opinion, scientific evidence, and confessions and admissions. The course requires a research paper.

## **COMPOSITION**

### **COMP 1403 - English Fundamentals\*, 3 Credits**

Level: Lower-Developmental/Remedial Course

Course Attributes: Remedial

English Fundamentals is a course designed specifically for the study and for the improvement of basic writing skills and techniques. As such, English Fundamentals allows the student to master a variety of sentence constructions and paragraph types, culminating in the ability to create a multi-paragraph essay. The emphasis is on grammar, spelling, punctuation, sentence structure, writing and revising techniques, and proofreading and editing to produce clear, concise, and information-rich sentences and paragraphs. This is a remedial/developmental course; it will not satisfy any graduation requirements. Student performance on the Comprehensive Language Usage Exam and the Writing Competency Exam will affect the final course grade.

### **COMP 1503 - Freshman Composition, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - BC-COMP1503/SPCH1083, Gen Ed - BC-COMP1503/SPCH5083, Gen Ed - BC-COMP1503/BUAD2033, Liberal Arts and Science

Freshman Composition is intended to enable students to express themselves in essays. They will generate ideas, develop thesis statements, plan paragraphs, organize compositions, and select rhetorical strategies. Essays and a reference paper are required. Readings stimulate language use, critical thinking, and writing techniques.

### **COMP 2900 - Directed Study, 1 to 4 Credits**

Level: Lower

The student may contract for one to four credit hours of independent study through an arrangement with the instructor. The student must submit a plan acceptable for the instructor and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

### **COMP 3503 - AdvComp:Writing About Writing&, 3 Credits**

Prerequisite(s): COMP 1503 with C or better and ( LITR 2603 with C or better or LITR 2033 with C or better or LITR 2343 with C or better or LITR 2503 with C or better or LITR 2603 with C or better or LITR 2703 with C or better or LITR 2813 with C or better or LITR 2900 with C or better or LITR 2903 with C or better or LITR 2913 with C or better or LITR 3233 with C or better or LITR 4333 with C or better or LITR 7003 with C or better )

Level: Lower

Course Attributes: Gen Ed - BC-COMP3503/SPCH1083, Gen Ed - BC-COMP3503/SPCH5083, Gen Ed - BC-COMP3503/BUAD2033, Liberal Arts and Science

This course focuses on developing the student's ability to write at an advanced level about topics of broad cultural importance. Students will demonstrate assurance and skill in producing written communications on par with published prose. This class will go beyond the mechanics of proper English composition and explore concepts such as originality, honesty of both fact and presentation, clarity, sincerity of emotion, economy of expression, and naturalness of style. This course can be taught from many perspectives. It will strive to instill Alexander Pope's thought that true ease in writing comes from art

### **COMP 3703 - Technical Writing I, 3 Credits**

Prerequisite(s): COMP 1503 with D or better and ( LITR 2603 with D or better or LITR 2033 with D or better or LITR 2343 with D or better or LITR 2503 with D or better or LITR 2603 with



D or better or LITR 2703 with D or better or LITR 2813 with D or better or LITR 2900 with D or better or LITR 2903 with D or better or LITR 2913 with D or better or LITR 3233 with D or better or LITR 4333 with D or better or LITR 7003 with D or better )

Level: Lower

Course Attributes: Liberal Arts and Science

This course is offered for students who have completed six hours in English and Humanities and who seek to improve their skills in technical writing. It is designed to give students a practical familiarity with effective communication skills on the job. Students will be encouraged to use experience and knowledge from their academic majors as sources of subject matter in written assignments. The course centers on the knowledge and practice of format and style in technical writing when producing lower-level documents; this includes an emphasis on defining audience and constructing documents in short formats.

### **COMP 5703 - Technical Writing II, 3 Credits**

Prerequisite(s): COMP 1503 with D or better \* and ( LITR 2603 with D or better or LITR 2033 with D or better or LITR 2343 with D or better or LITR 2503 with D or better or LITR 2603 with D or better or LITR 2703 with D or better or LITR 2813 with D or better or LITR 2900 with D or better or LITR 2903 with D or better or LITR 2913 with D or better or LITR 3233 with D or better or LITR 4333 with D or better or LITR 7003 with D or better )

Level: Upper

Course Attributes: Liberal Arts and Science

This course is offered for students completing requirements for a bachelor's degree. It will prepare students to handle typical workplace assignments in a competent and professional manner. It will also prepare students to communicate their ideas effectively in writing to persons in and out of their particular professional disciplines. The course centers on the knowledge and practice of format and style in technical writing when producing upper-level documents; this includes an emphasis on audience analysis and document design as well as research and editing decisions in the composition of long formats.

### **COMP 5900 - Directed Study, 1 to 4 Credits**

Prerequisite(s): COMP 1503 and ( LITR 2603 with D or better or LITR 2033 with D or better or LITR 2343 with D or better or LITR 2503 with D or better or LITR 2603 with D or better or LITR 2703 with D or better or LITR 2813 with D or better or LITR 2900 with D or better or LITR 2903 with D or better or LITR 2913 with D or better or LITR 3233 with D or better or LITR 4333 with D or better or LITR 7003 with D or better )

Level: Upper

The student may contract for one to four credit hours of independent study through an agreement with the instructor. The student must submit a plan acceptable for the instructor and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

## **COURT REPORTING**

### **CTRP 1174 - Realtime Writing Theory I, 4 Credits**

Level: Lower

Realtime Writing Theory I teaches students how to write the spoken word with punctuation by means of a conflict-free, realtime-ready shorthand theory and provide instantaneous translation. It includes the use of on-line computer-aided technology and teacher interaction; live practice dictation for speed and accuracy; read back and analysis of shorthand notes. Weekly speed takes will be given at incremental speeds on unfamiliar material; the same material will not be used more than once every six months. NCRA requirements include the following: students are required to transcribe steno notes and speed takes under timed institutional supervision or if Internet students sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes shall be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Internet students must sign a sworn statement verifying the material has been deleted from their computers and no backup has been made. Students shall have access to the minimum grading criteria as set forth by the NCRA requirements. Minimum speeds of 50 words per minute on unfamiliar material with 95 percent accuracy are required for passing the course.

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### **CTRP 2274 - Realtime Writing Theory II, 4 Credits**

Prerequisite(s): CTRP 1174 with C or better

Level: Lower

This course is a continuation of basic realtime writing theory. The student will continue to learn to write, read, and transcribe the spoken word by means of a conflict-free, realtime-ready shorthand theory and provide instantaneous translation. The course is structured into 75 classes, which must be completed within the 15-week semester time frame. Each class requires a minimum of three hours of practice time per day. The course is designed for both on campus and Internet training. On campus students will meet at a designated time and place. Internet students can access the class at any time during the day, but are required to spend the same amount of time in class and out of class as an on campus student. All students are expected to spend a minimum of three hours a day on homework, which includes practicing accuracy and speed. Testing material used for speed takes will be given at incremental speeds on unfamiliar material; the same material will not be used more than once every six months. Students are required to transcribe steno notes and speed takes under institutional supervision or, if Internet students sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes shall be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Internet students must sign a sworn statement verifying the material has been deleted from their computers and no backup has been made. Students must be able to transcribe three minutes of unfamiliar dictation at 90 words per minute with at least 95 percent accuracy. Students shall have access to the minimum grading criteria as set forth by the NCRA. Successful completion of the course requires a grade of C<sup>+</sup> or better. The course includes on-line computer-aided technology for realtime translation."

### **CTRP 2603 - Persnl Dictionary Prod & Maint, 3 Credits**

Prerequisite(s): CTRP 1174 with C or better and CTRP 2274 with C or better

Level: Lower

This course will be an extension of the material learned in the Computer Aided Transcription course (CTRP 3373) and is a direct application of the realtime techniques learned in the Realtime Writing Theory I course (CTRP 1174). The topics to be covered will include personal dictionaries; update area; D-Defines, J-Defines, and E-Defines, job dictionaries; power defines; phonetic tables; how to insert, modify, and delete entries; filtering dictionary; printing dictionary, backing up and restoring dictionaries, and dictionary maintenance. Students will build and maintain their personal dictionary by adding new entries throughout the course.

### **CTRP 3111 - Transcript Production, 1 Credit**

Prerequisite(s): CTRP 2274 with D or better

Level: Lower

Students will learn how to properly format and prepare judicial transcripts, including cover page, appearance page, examination and exhibit indexes, question-and-answer, colloquy, parentheticals, jurats, and certification pages, as well as how to prepare ASCII disks and mini-transcripts.

### **CTRP 3163 - Speed Bldg I for Report & Capt, 3 Credits**

Prerequisite(s): CTRP 2274 with C or better and CTRP 1174 with C or better

Level: Lower

The prerequisite for this course is the successful completion of the Realtime Writing Theory courses (CTRP 1174 and CTRP 2274) or approval of the instructor. The student will continue to learn to write, read, and transcribe the spoken word by means of a conflict-free, realtime-ready shorthand theory. The course is structured into 45 class periods. The typical structured classroom meets every Monday, Wednesday, and Friday throughout the semester. Each class requires a minimum of three hours of practice time per day. The course is designed for Internet training. The course suffices as a survey course to explore the two different modes of reporting: judicial reporting and broadcast reporting. Students must be able to transcribe five minutes of unfamiliar dictation in the following areas: 80 wpm on literary material, 100 wpm on jury charge material, and 120 wpm on two-voice material. All speed takes must be transcribed with a minimum of 95 percent accuracy or higher. Students must be able to write five minutes of literary material at 80 wpm with 96% accuracy or higher and write a ten minute broadcast news program with an accuracy rate of 96% or better.

Testing material used for speed takes will be given at incremental speeds on unfamiliar material; the same material will not be used more than once every six months. Internet students must sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes shall be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Students must sign a sworn statement verifying that the material has been deleted from their computers and no backup has been made. Students shall have access to the minimum grading criteria as set forth by the NCRA. Successful completion of the course requires a grade of C or better. The course includes online computer-aided technology for realtime translation.

**CTRP 3363 - Tech for Reporting/Captioning, 3 Credits**

Prerequisite(s): CTRP 2274 with C or better

Level: Lower

This course will complement the Computer Aided Transcription course (CTRP 3373) to the extent that information pertaining to the computers, hardware, software, maintenance, and upkeep will be enhanced. The material covered in this class for reporting students will relate to reporting technology, computer operating systems, realtime applications, realtime reporting in the captioning/CART environment, litigation support, videotaping, and information on related software packages used by judicial reporters. The material covered in this class for captioning students will relate to captioning technology, computer operating systems, on-line translations systems, administrative hearings, indexing and archiving steno notes, both paper and electronic, care and maintenance of computer hardware data input device, basic setup and maintenance of broadcast captioner's equipment, broadcast news production preparation, prescripting, psychology of on-air captioning, verbatim vs. word substitutes, finger spelling, history of captioning, and information relating to the deaf and hard-of-hearing community.

**CTRP 3373 - Computer Aided Transcription, 3 Credits**

Prerequisite(s):

Level: Lower

This course will teach the student how the computer works with the shorthand writing machine to produce an instantaneous transcript using realtime translation. The course includes computer concepts and terminology and basic file management, saving, editing, and printing. This course will take the student from the basics of a computer application software program to a more advanced level of understanding and appreciation. The goal of the CAT course is to integrate computer concepts and English punctuation rules to produce an accurate and saleable work product. Students will review basic punctuation rules and apply them to transcript production.

**CTRP 4265 - Spd Bldg II for Reprtr & Captn, 5 Credits**

Prerequisite(s): CTRP 3163 with C or better

Level: Lower

This course is a continuation of Speed Building I for Reporters and Captioners. The student will continue to learn to write, read, and transcribe the spoken word by means of a conflict-free, realtime-ready shorthand theory. Reporting students must be able to transcribe five minutes of unfamiliar dictation with at least 95 percent accuracy in each of the areas listed: literary at 130 wpm, jury charge at 150 wpm, and two-voice at 170 wpm. Dictation includes two-voice and multi-voice testimony (including medical and technical material), literary, jury charge, and current events. Captioning students must be able to write five minutes of literary material at 130 wpm with 96 percent accuracy or higher. In addition, captioning students must write a 20 minute broadcast news program with an accuracy rate of 96 percent or better. Testing material used for speed takes will be given at incremental speeds on unfamiliar material; the same material will not be used more than once every six months. Students are required to transcribe steno notes and speed takes under institutional supervision or if internet students, sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes shall be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Internet students must sign a sworn statement verifying that the material has been deleted from their computers and no backup has been made. Students shall have access to the minimum grading criteria as set forth by the NCRA. Successful completion of the course requires a grade of C" or better. The course includes on-line computer-aided technology for realtime

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translation."

### **CTRP 4365 - Speed Bldg III for Repr & Cap, 5 Credits**

Prerequisite(s): CTRP 4265 with C or better

Level: Lower

This course is a continuation of Speed Building II for Reporters and Captioners. The student will continue to learn to write, read, and transcribe the spoken word by means of a conflict-free, realtime-ready shorthand theory. The course dictation includes two-voice and multi-voice testimony (including medical and technical material), literary, jury, charge and current events. Captioning students must be able to write three 5-minute takes of literary material at 180 wpm with 96 percent accuracy or higher. In addition, captioning students must write a 30-minute broadcast news program with an accuracy of 96 percent or better. Students are required to perform a line-by-line edit/analysis of steno notes. Testing material used for speed takes will be given at incremental speeds on unfamiliar material; the same material will not be used more than once every six months. Students will be required to transcribe steno notes and speed takes under institutional supervision or, if internet students, sign a sworn verification form stating that the work was completed without the aid of anyone present and without cheating. Speed takes shall be monitored and timed in the same way. Students are required to transcribe at least once a week. All speed takes and tests shall be deleted immediately. Internet students must sign a sworn statement verifying that the material has been deleted from their computers and no backup has been made. Students shall have access to the minimum grading criteria as set forth by the NCRA. Successful completion of the course requires a grade of "C" or better. Students must be able to pass three 5-minute dictations with 95% accuracy in each of the following areas: Q & A at 225 wpm

### **CTRP 4602 - Int & Prac for Reporter & Capt, 2 Credits**

Prerequisite(s): CTRP 4265 with C or better

Corequisite(s):

Level: Lower

Students will arrange for an off-campus experience with a qualified courtroom, freelance, realtime reporter, or captioner within a geographical proximity of their hometown. Student should try to arrange for a variety of experiences over the internship. NCRA requirements: reporting students must pass a pre-internship test at 180 wpm in Q & A material; complete a minimum of 50 hours, 40 hours of which must be in-court; and complete a minimum of 40 pages computer printed transcript. Captioning students are required to pass a pre-internship test at 160 wpm in literary material; complete a minimum of 40 hours, 25 hours of which must be actual writing time and 15 hours of research and dictionary preparation; and complete an unedited captioned translation of three 15 minute segments on varied topics. Students must submit a written narrative report summarizing the internship experience. Reporting students must produce 40 pages of transcript from various experiences during the internship, and submit a signed internship verification form. Captioning students must produce three 15 minute segments on varied topics of unedited captioned translation. Students will be responsible for a presentation on local, national or international current events and the completion of a unit on basic geography.

### **CTRP 4634 - Proc for Reporters & Captioner, 4 Credits**

Prerequisite(s): CTRP 3163 with C or better

Level: Lower

The procedures course is an introduction of court and realtime reporting procedures and practices for the court reporter including: professional responsibilities of federal and state court systems; civil and criminal trials; logistics of reporting (marking exhibits, research and references, filing notes, invoicing, indexing, delivery of transcripts); reporting techniques (interruption of speaker, identification of speaker, swear or affirm witness or interpreter, report with an interpreter, voir dire, etc.) and methods of transcript production. This course includes a description and discussion of the role of the captioner and CART provider. Included in the course will be a simulation of trial and deposition where the student will take the part of the reporter and administer the oath, mark exhibits, and perform other responsibilities the court reporter should be aware of. Also, students will be required to apply professional ethics to various situations and identify and use appropriate library and reference material used in transcript preparation including software and Internet search engines. Students will also be required to simulate and transcribe the National Court

Reporter's Association Registered Professional Reporter (RPR) test as well as the Certified Realtime Reporter (CRR) test. Discussion of NCRA Code of Professional Ethics will be included.

**CTRP 4900 - Directed Study, 1 to 6 Credits**

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**DRAFTING/CAD****DCAD 1053 - Technical Calculations I, 3 Credits**

Level: Lower

Mathematics review, basic algebra, industrial applications applying the decimal and metric systems, use of reference books and electronic calculators. Successful completion of this course requires a grade of C" or better."

**DCAD 1205 - Industrial Drafting Intro, 5 Credits**

Level: Lower

The use of traditional drafting equipment, lettering, sketching, geometric construction, and orthographic projection, along with similar application on computer programs will also be addressed. In this course, 3 dimensional solid modeling sketching, and software orientation shall occur. Student will be instructed in the creation, use and manipulation of 3 dimensional solids using industrially accepted CAD software.

**DCAD 1305 - Industrial Drafting I, 5 Credits**

Prerequisite(s): DCAD 1205 with D or better

Corequisite(s):

Level: Lower

Preparation of casting and machine detail drawings using proper dimensioning practices and applications of conventional section views. Introduction of various manufacturing processes, shop terminology, machine operations, and materials used in industrial applications.

**DCAD 1405 - Industrial Drafting II, 5 Credits**

Prerequisite(s): DCAD 1305 with D or better

Corequisite(s):

Level: Lower

The use and application of auxiliary view drawings. Also the use and application of development drawings. Students will develop, through projection and solid modeling processes, developed sheet metal developments and intersections. This course will address aspects of freeform modeling and HVAC applications.

**DCAD 2053 - Introduction to Unigraphics, 3 Credits**

Level: Lower

In this course the student will model, using a current version of Unigraphics, industrial projects giving careful consideration to their interrelated features. The student will use both sketches and Boolean operations to complete their models. The importance of parametric controls within and between part files will be stressed.

**DCAD 2054 - Layout and Detail, 4 Credits**

Level: Lower

This course will address advanced design techniques and practices that are typical in the design industry. Students will be challenged with design concepts and problem solving in order to accomplish a particular task. An excellent understanding of gearing kinematics and cams will be realized through practical application. Students will be confronted by design problems that emulate industrial applications.

**DCAD 2063 - Technical Calculations II, 3 Credits**

Level: Lower

Practical geometry and trigonometry as a continuation of Technical Calculations I. The scope of this course includes solutions of geometric shapes and solids, right and oblique transfers using industrially related situations. Successful completion of this course requires a grade of C" or better."

## COURSE DESCRIPTIONS

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### **DCAD 2205 - Industrial Drafting III, 5 Credits**

Prerequisite(s):

Level: Lower

Develop and complete industrial assembly drawings and detail drawings for assemblies, using appropriate dimensioning and ANSI tolerances, complete bill of materials including threads and fastener information and identification. Course will involve, also, aspects of tolerance stack up their calculations. Addresses the family of drawings and assembly.

### **DCAD 2305 - Welding Drawings, 5 Credits**

Prerequisite(s):

Level: Lower

Develop and complete industrial weldment drawings using various welding processes and types of joints used to draw weldment assemblies using related symbols, appropriate materials and dimensioning practices. This will include raw stock materials, piping and structural members. Converting castings to fabrication parts will also be addressed. Successful completion of this course requires a grade of 70% or better on a comprehensive II exam.

### **DCAD 2805 - Dftng for Residential Const, 5 Credits**

Level: Lower

The application of basic methods, symbols and conventions to prepare working drawings for the construction of residential buildings. This course is designed to permit the drafting student to develop, design and create drawings typical to the residential industry. These drawings will allow the student to demonstrate their understanding and design capabilities applied to residential structures. Each student will perform appropriate calculations and prepare all drawings applicable to modern residential construction.

### **DCAD 3023 - Geometric Dimen & Tolerncng, 3 Credits**

Level: Lower

Correctly specify geometric form controls and positional tolerances to engineering drawings with the use of ANSI geometric symbols.

### **DCAD 3024 - Layout & Details, 4 Credits**

Level: Lower

Preparation of mechanical design layouts, details and assembly drawings, using mechanisms such as linkages, pneumatics, hydraulics, gear trains, belt and chain drives and control systems. Application of geometric dimensioning and tolerances to appropriate detail drawings. This is a five (5) week course.

### **DCAD 3044 - Fluid Power, 4 Credits**

Level: Lower

In this course students will prepare layouts of single and double line drawings for hydraulic and pneumatic systems, and will also study and apply mathematic calculations as they pertain to their assignments. The use of vendor catalogs and live components are used in the preparation of the above-mentioned drawings. The student will also prepare a sequence of operations explaining how each schematic operates.

### **DCAD 3104 - Advanced Mechanical Layout, 4 Credits**

Prerequisite(s):

Level: Lower

This course will address advanced layout techniques and practices that are typical in the design industry. Students will be presented with design concepts and will use problem solving techniques to accomplish tasks. The course includes the study of power transfer systems such as couplings, chain and sprocket drives, and the use of motors and bearings. Instruction in the application of clutches, and their uses in machine design, will also be stressed.

### **DCAD 4003 - Senior Project, 3 Credits**

Prerequisite(s):

Level: Lower

This course shall be considered a capstone project for the authentic assessment of the curriculum. The student shall select a project that shall challenge the student and demonstrate various abilities and skills acquired in their previous classes. This project shall include an oral presentation along with a written report and a demonstration of their chosen

project. This demonstration may include all associated drawings, a finished part of their design, and an electronic slide show". This course is designed as a research/lab course to design/improve a consumer product. Instructor shall supply minimal guidance in the development of this project."

**DCAD 4125 - Process Piping I, 5 Credits**

Prerequisite(s):

Level: Lower

This course will facilitate the concepts and principals employed by drafters in the Industrial Process Piping industry. Using practical laboratory application with topics including flow diagrams, orthographic and isometric spool drawings, plan & elevation piping arrangements, selection of valves, pipe racks and supports. Students will generate a variety of accurate CAD piping assignments similar to the ones currently used in industry today.

**DCAD 4155 - Technical Illustration, 5 Credits**

Level: Lower

In this course students will master isometric exploded view technical illustration, including such topics as applications, pictorial selections, and illustration techniques. In addition students will learn about basic printing process, scaling artwork for press runs and coordinating with printing firms. The student will also supply complete assembly instructions (sequence of operations) explaining how this job is put together and functions.

**DCAD 4215 - Commercial Print Techniques, 5 Credits**

Level: Lower

Introduction to commercial print techniques. This course builds and adds on to computer commercial art. It is now necessary that the student take the material and information he/she has learned to the next level. Field trips to industry and local print shop are important so that the student receives a thorough understanding of the whole technical illustration process for an idea for a final printed piece.

**DCAD 4225 - Process Piping II, 5 Credits**

Prerequisite(s):

Level: Lower

This course will include the necessary theory and laboratory application in the design of chemical processing plant layout. Calling upon skills developed in prerequisite coursework, in addition to Industrial Process Piping Plant Layout standards, students will create an actual CAD model of a plant that they have designed for a comprehensive understanding of piping plant design.

**DCAD 4315 - Isometric Exploded Views, 5 Credits**

Level: Lower

After a thorough understanding of all technical illustration concepts and techniques, the student is now required to master isometric exploded view technical illustrations. The student must be able to supply a complete component list with each illustration. The student must also supply complete assembly instructions (sequence of operations) explaining how this job is put together and functions. Each completed job must be press ready.

**DCAD 4335 - CNC Machine Programming, 5 Credits**

Level: Lower

Through the use of standard industrial codes and formulas to write computer programs that will enable CNC machining centers and CNC turning centers to produce parts, within quality standards. To be able to write these CNC programs both from scratch and with the use of commercially available CNC programming software.

**DCAD 4900 - Directed Study, 1 to 9 Credits**

Level: Lower

By arrangement with advisor. Directed study is to provide an opportunity for the student to continue study in a subject area of special interest or special concern, related directly to an actual job opportunity within the drafting curriculum.

**IGITAL MEDIA & ANIMATION****DGMA 1333 - Survey of Animatn & Visual Eff, 3 Credits**

Level: Lower

This course will take students through a comprehensive history of animated films beginning

## COURSE DESCRIPTIONS

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with their conception in the early 1900's through the present. Students will learn how the medium reflects social issues, political views as well as human creativity. The various types of animation and how they were created in different countries and cultures will be the major focus. The screenings and discussions will span various genres and styles of animation including anime, experimental, commercial, computer, and independent film as well as gaming.

### **DGMA 1403 - Computer Animation I, 3 Credits**

Level: Lower

This is an introductory digital media course that focuses on the manipulation of both raster and vector-based imagery. Students will learn the basics of Photoshop as well as digital photography and use the software to develop their skills in the visualization of motion and time. The course will have a strong emphasis on principles of lighting, layout and composition.

### **DGMA 1413 - Foundations:Form/Space Rltnshp, 3 Credits**

Level: Lower

This is a visual rendering course in the Digital Media and Animation major. Broad experience is emphasized with diverse graphic tools and techniques to develop observation of and analyze visual information. This course is designed to deconstruct preconceived ideas of form/space relationships and replace them with objective understandings.

### **DGMA 1423 - Intro to Visual Communication, 3 Credits**

Level: Lower

This is a course that focuses on creative, technical, and environmental/collaborative issues involved in visual communication. Building on the elements and principles of design/communication the students work through increasingly difficult projects to their final cumulative piece. An investigation of color theory as it applies to traditional and computer generated images is also pursued.

### **DGMA 2403 - Computer Animation II, 3 Credits**

Prerequisite(s): CIAT 1403 with C or better or DGMA 1403 with C or better

Level: Lower

This is a course that provides beginning experiences in 3D polygon modeling. It focuses on creating organic and inorganic objects that visually communicate a given mood, emotion, and/or scenario. Students will analyze objects geometrically and use defined processes and techniques to produce these objects for visualization and communication through modeling, lighting, and texturing using polygonal shapes.

### **DGMA 3203 - Interactive Authoring, 3 Credits**

Prerequisite(s): CIAT 2403 with C or better or DGMA 2403 with C or better

Level: Lower

This is a course that introduces the student to the art of creating cartoon-style animation applicable to industry needs in graphic design, interactive media, the internet, film, and television using Macromedia Flash. The course emphasizes student acquisition production with both cameraless and computer-based techniques.

### **DGMA 3403 - Computer Animation III, 3 Credits**

Prerequisite(s): CIAT 2403 with C or better or DGMA 2403 with C or better

Level: Lower

This is a course which introduces the student to 3D computer animation. Autodesk's Maya software is emphasized. The course focuses on the building and rigging of skeletons for organic and inorganic objects as well as animation of biped, quadruped, and object motion, and soft-body and rigid-body object motion to visually communicate specific actions and/or emotions. Traditional animation concepts and 3D computerized animation techniques will be theoretically explored and practically applied.

### **DGMA 4103 - Interactive Design, 3 Credits**

Prerequisite(s): CIAT 3203 with C or better or DGMA 3203 with C or better

Level: Lower

This course is an intermediate exploration of visual and verbal communication through interactive media/interface design. The students will explore the fundamental concepts of interactivity, the basic concepts of flow charting, as well as hierarchal organization and visual perception with regard to computer interface and interactivity for web sites, interactive media,



informative media and DVD authoring. Students will use a variety of computer tools to implement and demonstrate the various concepts in studio design projects. Students will complete interactive titles of their own design with an intuitive interface that incorporates concepts covered in class.

**DGMA 4423 - Portfolio I, 3 Credits**

Prerequisite(s): ( CIAT 3403 with C or better or DGMA 3403 with C or better )

Level: Lower

This course will prepare students for the task of finding a career in the Digital Media and/or Animation fields. Instruction will be given to develop and design web portfolios, print portfolios, and demo reels that promote the individual's work. Web authoring software such as Dreamweaver and Flash will be used in the creation of individual websites. Non-linear video and sound editing software, such as Soundtrack Pro, SoundBooth, Final Cut Pro, and Premiere will be used to optimize video, sound, and animation work for the various forms of portfolios being created. Print portfolios are created using Photoshop, Illustrator, and Indesign software packages. Additional topics to be covered include writing for job/grant opportunities: biographies, artist statements, resumes, cover letters, and grant writing. Students will also formally present their work to the academic community and prepare for interviews. Students must apply for at least one real world" opportunity during the course of the class."

**DGMA 4443 - Computer Animation IV, 3 Credits**

Prerequisite(s): ( CIAT 3403 with C or better or DGMA 3403 with C or better )

Level: Lower

In this course, students will integrate knowledge learned in the previous two semesters and create a 15 week production. This might be character animations, commercials, public service announcements, or interactive presentations. There is a focus on individual creative projects with emphasis on visually communicating a message and theme to the audience through animation.

**DGMA 4900 - Directed Study, 1 to 4 Credits**

Level: Lower

A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**DGMA 5103 - Production I, 3 Credits**

Prerequisite(s): CIAT 4103 with C or better or DGMA 4103 with C or better or CIAT 4423 with C or better or DGMA 4423 with C or better

Level: Upper

This course will introduce the student to the use of current non-linear editing technology. Class projects will develop an understanding of the methods used for creating, sampling and storing digital video and audio and the constraints placed on these media assets when used for media based products. Emphasis is placed upon the technology of digital video and audio, including: formats, data rates and compression algorithms.

**DGMA 5203 - Stop Motion Animation, 3 Credits**

Prerequisite(s): ( CIAT 1333 with C or better or DGMA 1333 with C or better )

Level: Upper

In this class students will experiment with stop motion animation using single frame cameras and 3-dimensional objects from a video feed into computer software. Students will learn how to apply the principles of animation to stop-motion filmmaking, and will then take their projects through the post-production process.

**DGMA 5403 - Adv Modeling, Texturing & Ligh, 3 Credits**

Prerequisite(s): ( CIAT 4443 with C or better or DGMA 4443 with C or better )

Level: Upper

This course develops a refinement of skills from the preceding semesters' work with modeling focusing on NURBS based models. The student will build upon their knowledge of modeling and will provide an in depth study of NURBS modeling coupled with lighting and texturing. The course shows students how to visualize an object and how to effectively build it in the 3D world using various NURBS surface types and communicate scenarios and moods through the use of textures and light to surface interactions.

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### **DGMA 5603 - Interactive Media, 3 Credits**

Prerequisite(s): ( CIAT 4103 with C or better or DGMA 4103 with C or better ) or ( CIAT 4423 with C or better or DGMA 4423 with C or better )

Level: Upper

This course is a continuation of Interactive Authoring. Students expand their interactive authoring skills as they are introduced developing interactive technologies and interactive 3D spaces. Students are taught interaction-based authoring programs used to communicate with viewers both visually and verbally through voice and sound. Students explore the possibilities of communication through interactive media through studio experiments and complete interactive titles of their own design that incorporate concepts covered in class.

### **DGMA 6103 - Production II, 3 Credits**

Prerequisite(s): CIAT 5103 with C or better or DGMA 5103 with C or better

Level: Upper

This course introduces fundamental concepts of visual communications involved in understanding and controlling the performance of text and image elements in a field. Emphasis will be on the creative process of making images that can convey ideas and information to others. Students will learn steps to take to create a concept, log line, treatment, storyboard, color studies, lighting studies, and animatic(s) for their proposed project. They will learn how to compile all of these elements into a presentation that they will give in front of professors and industry professionals.

### **DGMA 6203 - Motion Graphics, 3 Credits**

Prerequisite(s): ( CIAT 5103 with C or better or DGMA 5103 with C or better )

Level: Upper

From experimental video and film title sequences to revolutionary TV commercials, broadcast design and motion graphics are used to inspire and influence. Through a series of exercises and projects, students will learn to design and create graphic-based imagery and be able to integrate typographical skills in their work.

### **DGMA 6403 - Adv Texturing, Lighting & Rend, 3 Credits**

Prerequisite(s): ( CIAT 5103 with C or better or DGMA 5103 with C or better ) and ( CIAT 5403 with C or better or DGMA 5403 with C or better )

Level: Upper

This course is a continuation of the sequence of 3D classes. It takes the projects introduced the previous semester in Advanced Modeling (CIAT 6303) and applies texturing, lighting, and rendering for 3D animation. Students will create professional quality textures using traditional means as well as using software. They will design and use complex lighting systems and rendering techniques.

### **DGMA 6413 - Advanced Animation, 3 Credits**

Prerequisite(s): CIAT 5403 with C or better or DGMA 5403 with C or better

Level: Upper

This course is a continuation of the sequence of animation, focusing on more in depth and complex character animation as well as the animation of organic and non-organic shapes and object. Areas covered in this class include: pre-visualization, advanced character set-up and animation, facial animation, soundtrack synchronization, and advanced animation principles and techniques.

### **DGMA 7103 - Commty Serv in Digital Media &, 3 Credits**

Prerequisite(s): ( CIAT 6103 with C or better or DGMA 6103 with C or better ) and ( CIAT 6203 with C or better or DGMA 6203 with C or better ) and ( CIAT 6403 with C or better or DGMA 6403 with C or better )

Level: Upper

This course, offered in the final year, provides the students with practical application of skills developed in the Digital Media and Animation major. This directed study provides valuable real-life experience while extending the skills and good-will of the students towards the community. The student will be responsible for all aspects of the project for a community organization while under the guidance of the curriculum faculty. Internships outside the Alfred community are also an option and will be discussed throughout the students' junior year.

### **DGMA 7106 - Senior Studio Project I, 6 Credits**

Prerequisite(s): ( CIAT 6203 with C or better or DGMA 6203 with C or better ) and ( CIAT 6403

with C or better or DGMA 6403 with C or better )

Level: Upper

This is a cumulative two-part course where students will integrate aspects from their studies of the previous three years. Students will use this semester to create one of the following: a 3D animated film; a 2D animated film; an Experimental Animation film (Stop Motion, Mixture of 2D and 3D animation or a fully Interactive/Informative Media project). Students will produce all pre-production work including proposal, storyboards and animatics. Students will also produce all post-production work including editing, sound mixing and final delivery format (CD, VHS, and/or DVD) prior to a film screening in the spring semester.

**DGMA 7203 - Senior Seminar, 3 Credits**

Level: Upper

This seminar will serve two purposes. The first is to enhance students' understanding of opportunities in the field of animation and digital media through presentations, workshops and discussions. The second is to generate new techniques for problem solving in digital media projects. The course will include in-class exercises, discussions and responses to visiting artist presentations.

**DGMA 7403 - Senior Studio Project I, 3 Credits**

Prerequisite(s): ( CIAT 6103 with C or better or DGMA 6103 with C or better ) and ( CIAT 6403 with C or better or DGMA 6403 with C or better )

Level: Upper

This is a cumulative two-part course where students will integrate aspects from their studies of the previous three years. Students will use this semester to create one of the following: a 3D animated film; a 2D animated film; an Experimental Animation film (Stop Motion, Mixture of 2D and 3D animation or a fully Interactive/Informative Media project). Students will produce all pre-production work including proposal, storyboards and animatics. Students will also produce all post-production work including editing, sound mixing and final delivery format prior to a film screening in the spring semester.

**DGMA 8103 - Portfolio II, 3 Credits**

Prerequisite(s): CIAT 7403 with C or better or DGMA 7403 with C or better

Level: Upper

This course will prepare students for the task of finding the next opportunity to advance their professional career be it graduate school, employment in industry, exhibition and/or freelance work. Study will include an overview of the rapidly changing and emerging opportunities for media artists. The students will develop a strategy to promote skills in an ever-changing field. Instruction will be given to develop a professional identity that is conveyed in the design of their portfolio. Current print and web design software will be utilized to produce a finished interactive electronic portfolio to accompany a published book detailing their work.

**DGMA 8106 - Senior Studio Project II, 6 Credits**

Prerequisite(s): CIAT 7403 with C or better or DGMA 7403 with C or better

Level: Upper

This is a cumulative two-part course where students will integrate aspects from their studies of the previous three years. Students will use this semester to create one of the following: a 3D animated film; a 2D animated film; and Experimental Animation film (Stop Motion, Mixture of 3D and 2D animation or a fully Interactive/Informative Media project). Students will produce all pre-production work including proposal, storyboards and animatics. Students will also generate all post-production work including editing, sound mixing and final delivery format (using current technology) prior to a film screening.

**INTERIOR DESIGN****DSGN 1433 - Furniture & Finishes, 3 Credits**

Prerequisite(s): ( ARCH 1184 with C or better or CIAT 1184 with C or better ) and ( ARCH 1023 with D or better or CIAT 1023 with D or better )

Level: Lower

This survey course examines the selection, specification, composition, manufacture, and application of finishes and materials in interior design and presents an overview of furniture construction, types, planning and selection.

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### **DSGN 1443 - Color, Lighting and Acoustics, 3 Credits**

Prerequisite(s): ( ARCH 1433 with C or better or CIAT 1433 with C or better ) and ( ARCH 2394 with C or better or CIAT 2394 with C or better )

Level: Lower

This course is a fundamental course that investigates the properties and principles of basic color theory and its interrelationship with lighting. The focus is on the psychological and physiological effects of color and lighting as it applies to the form, texture, and finish of interior spaces. Course content provides a basic understanding of lighting calculations, types of lamps, appropriate use and application. General acoustic principles with an exploration of material application are introduced.

### **DSGN 2204 - Interior Design I, 4 Credits**

Prerequisite(s): CIAT 2394 with C or better or ARCH 2394 with C or better

Level: Lower

This studio course emphasizes the design process and space planning for modest size facilities. The students will apply color rendering techniques to present interior design solutions. Students will select appropriate materials for various spaces in accordance with accepted design standards. Design issues such as furniture planning and layouts, application of color, and building code and ADA (American with Disabilities Act) considerations are included.

### **DSGN 2223 - History of Interior Design, 3 Credits**

Prerequisite(s): FNAT 1303 with C or better and COMP 1503 with D or better

Level: Lower

This survey course offers a critical overview of the history of interior design, its connection to different periods and cultures, and its integral relationship with architecture, stylistic movements and the decorative arts. Course content introduces students to major historical design periods from prehistoric civilizations to contemporary design. Lectures highlight period design, furniture styles, decorative objects, color palettes and their relevance to present-day interior design.

### **DSGN 2304 - Interior Design II, 4 Credits**

Prerequisite(s): DSGN 2204 with C or better or CIAT 2204 with C or better

Level: Lower

This advanced studio focuses on creating interior solutions with the tools of programming strategies, the development of conceptual ideas and the generation of design development drawings. Projects emphasize branding a client image through design of the interior architecture and selection of a representative FF&E (Furniture, Fixtures & Equipment) package. Students will focus on institutional, residential and retail projects that include intensive pre-design research, development of a concept statement, space-planning, assigning interior design elements, color scheme and finishes. Sustainable principles will be introduced with exercises designed to teach the student how to effectively evaluate the "greenness" of manufacturers and their products. Interior Design Studio II students will build upon knowledge and expand skills acquired in previous courses. In particular

## **ECONOMICS**

### **ECON 1013 - Macroeconomics, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

Macroeconomics is concerned with obtaining an overview of the basic sectors of the economy such as households, businesses, and government. In analyzing the economy we deal with such factors as total output, total levels of employment, and the general level of prices. Topics covered include the nature and method of economics, supply and demand, measuring domestic output, national income, and the price level, aggregate demand and supply, and fiscal and monetary policy.

### **ECON 2023 - Microeconomics, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

Microeconomics deals with the behavior of specific economic units such as individual households, industries, or firms within an industry. Topics covered include the nature and

method of economics, demand and supply analysis, consumer behavior, price and output determination under various degrees of competition, and production and the demand for resources.

**ECON 2900 - Directed Study, 1 to 4 Credits**

Level: Lower

This course allows students who have successfully completed an economics course to continue study in that subject. A student may contract for one to four credit hours. However, directed study may be contracted by a student only with the approval of the directing instructor and the department chairperson.

**ECON 4900 - Directed Study, 1 to 6 Credits**

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

**ECON 5133 - Territry & Entrprnrshp: trdtn,, 3 Credits**

Prerequisite(s): ECON 1013 with D or better or ECON 2023 with D or better

Level: Upper

The course aims to analyze the relationship between sustainability, economy, quality and globalization. It will also focus on the European Union and sustainable development. Other included topics will be: food industry in Italy (especially in the Campania region), organic farming in Italy, local food

**ECON 5143 - Cont Italian History (Politics, 3 Credits**

Prerequisite(s): ECON 1013 with D or better or ECON 2023 with D or better

Level: Upper

This course gives an overview of recent Italian history, with a focus on how the evolution of Italian history has affected the lives of present day Italians. The course also introduces students to contemporary culture in its wider sense, while familiarizing them with Italian design, fashion, television, newspapers, films, music, uses of language, etc.

**EDUCATION****EDUC 2013 - Educational Psychology, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Social Sciences

A study of the psychological principles and research as applied to learning, teaching, and classroom organization. Content of the course will include theories of learning and teaching, characteristics and individual differences of students, the effective learning environment, and evaluation and measurement of student achievement. The potential teacher will learn how to be an effective problem solver in the educational environment.

**EDUC 2163 - Foundations of Education, 3 Credits**

Level: Lower

The course examines the social, historical, ethical and philosophical foundations of the U.S. educational system. Attention also will be paid to contemporary educational opportunities and challenges including the evolving teaching role, school equity and funding, educational standards and assessment, classroom diversity and multicultural education, social justice, and reform initiatives.

**EDUC 2900 - Directed Study, 1 to 4 Credits**

Level: Lower

This course allows students who have successfully completed an education course to continue study in that subject. A student may contract for one to four credit hours. However, directed study may be contracted by a student only with the approval of the directing instructor and the department chairperson.

## COURSE DESCRIPTIONS

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### ELECTRICAL ENGI TECH

#### **ELET 1001 - Seminar, 1 Credit**

Level: Lower

An examination of strategies for success, including organizational and study skills, and transfer and career opportunities for engineering technology students in industry. There will be at least a dozen textbook and research readings followed by written assignments on topics to include the variety of engineering transfer institutions and engineering majors, diversity in society and the technical workplace, personal assessments of goals, values, strengths and weaknesses as related to student and technical career success, and employment application techniques such as resume writing, letters of application, interviewing and follow-up communications. Research assignments use library and Internet as resources and all written assignments are generated by computer.

#### **ELET 1003 - Intro to Comp Hardware & Troub, 3 Credits**

Level: Lower

This course provides an introduction to computer hardware and troubleshooting and an introduction to operating systems. It serves as a foundation for the computer/electronic technician to build on. The knowledge and skills obtained in this course will prepare the student for the CompTIA A+ Certified Computer Technician Hardware and Operating Systems exams.

#### **ELET 1102 - Intro Comp Hardware & Troubleshooting, 2 Credits**

Corequisite(s):

Level: Lower

This course provides an introduction to computer hardware and troubleshooting and an introduction to operating systems. It serves as a foundation for the electronic technician to build on. The knowledge and skills obtained in this course will prepare the student for the CompTIA A+ Certified Computer Technician exam.

#### **ELET 1103 - Circuit Theory I, 3 Credits**

Prerequisite(s): MATH 1033 with D or better or MATH 1054 with D or better or MATH 1063 with D or better or MATH 1084 with D or better or MATH 2043 with D or better

Corequisite(s): MATH 2043

Level: Lower

In circuit theory, a student will analyze electrical circuits according to the fundamental definitions and laws as they apply to direct current circuits. The physical parameters defined include charge, voltage, current, resistance, capacitance and inductance. The laws applied include Ohm's Law, Joule's Law, Kirchhoff's Voltage Law, and Kirchhoff's Current Law. The analysis relies on algebra and exponentials. A required recitation is included as a group problem solving session.

#### **ELET 1104 - Circuit Theory I, 4 Credits**

Prerequisite(s): MATH 1033 with D or better or MATH 1054 with D or better or MATH 1063 with D or better or MATH 1084 with D or better or MATH 2043 with D or better

Level: Lower

In circuit theory, a student will analyze electrical circuits according to the fundamental definitions and laws as they apply to direct current circuits. The physical parameters defined include charge, voltage, current, resistance, capacitance and inductance. The laws applied include Ohm's Law, Joule's Law, Kirchhoff's Voltage Law, and Kirchhoff's Current Law. The analysis relies on algebra and exponentials. A required recitation is included as a group problem solving sessions.

#### **ELET 1111 - Digital Logic Laboratory, 1 Credit**

Corequisite(s): ELET 1133

Level: Lower

This laboratory implements the theoretical principles of ELET 1133, Digital Logic. Students learn to build working circuits based upon design goals. Logic solutions utilize transistor-transistor logic (TTL) integrated circuits, simulation software and programmable logic devices (PLD).

#### **ELET 1133 - Digital Logic, 3 Credits**

Corequisite(s):

Level: Lower

Digital Logic introduces a student to two-state logic. Logic analysis will use the binary number system and Boolean algebra. Both combinational (AND-OR) logic and sequential (flip-flop) logic are studied. Typical logic designs include 7-segment displays, adders, multiplexers, and counters. Logic designs are implemented using simulation, programmable logic devices and transistor-transistor logic.

**ELET 1143 - Electronic Fabrication, 3 Credits**

Corequisite(s):

Level: Lower

The fundamentals of prototype design, fabrication, and documentation will be covered. Major topics include: safety, sheet metal fabrication, printed circuit board design and fabrication, schematic and wiring diagram drafting and analysis, computer applications for schematic drawing and printed circuit board layout, circuit construction, troubleshooting fundamentals, soldering techniques and project parts procurement and cost analysis.

**ELET 1151 - Circuit Theory Laboratory, 1 Credit**

Corequisite(s): ELET 1104

Level: Lower

Laboratory experiments parallel material presented in ELET 1103. The theories and laws governing dc circuits are applied and verified. Hands-on building of electrical circuits reinforces the interpretation of schematic diagrams. Verification includes detailed analysis of the circuit under test by calculation, measurement, and simulation. Outside preparation and laboratory report writing are required.

**ELET 1201 - Intro to Engineering Tech Lab, 1 Credit**

Level: Lower

This laboratory runs concurrently with BSET 8003, Introduction to Engineering Technology course. This is an introductory course related to the field of electrical engineering technology. Laboratory topics introduce the students to the fundamental electrical principles and practices. The student will be introduced to various electrical components such as resistors, capacitors, inductors, diodes, LEDs, transistors, and integrated circuits. Analog and digital meters will be used for measuring electrical quantities, such as resistance, voltage, and current, in electrical circuits. Circuit construction and operation, reading schematic diagrams, computer applications for schematic drawing and simulation, familiarization with electrical tools and fabrication, and soldering techniques will also be introduced.

**ELET 1202 - Intro to Electrical Eng Tech, 2 Credits**

Level: Lower

This is an introductory course related to the field of electrical engineering technology. Laboratory topics introduce the students to the fundamental electrical principles and practices. The student will be introduced to various electrical components such as resistors, capacitors, inductors, diodes, LEDs, transistors, and integrated circuits. Analog and digital meters will be used for measuring electrical quantities, such as resistance, voltage, and current, in electrical circuits. Circuit construction and operation, reading schematic diagrams, computer applications for schematic drawing and simulation, familiarization with electrical tools and fabrication, and soldering techniques will also be introduced.

**ELET 2103 - Electronic Theory I, 3 Credits**

Prerequisite(s): ELET 1103 with D or better

Level: Lower

A study of solid state devices, including diodes, bipolar transistors, and field effect transistors. Includes the theory of operation, biasing, stabilization, frequency response, distortion, and gain using mathematical analysis, equivalent circuits, and computer models.

**ELET 2123 - Circuit Theory II, 3 Credits**

Prerequisite(s): ELET 1103 with D or better

Level: Lower

A continuation of Circuit Theory I. The emphasis is on the electrical principles, laws, and theorems applicable to sinusoidal ac circuits. Complex number notation is used to evaluate ac circuits. Topics include ac power, resonance, polyphase circuits and transformers.

**ELET 2124 - Electrical Power Circuits, 4 Credits**

Prerequisite(s): ( ELET 1104 with D or better and MATH 2043 with D or better ) or ( ELET 1103 with D or better and MATH 2043 with D or better )

## COURSE DESCRIPTIONS

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Level: Lower

Why is imaginary power so expensive? This course requires students to mind their P's and Q's (real and reactive power). Students will build upon circuit theory concepts as they apply to alternating current using phasor analysis. Complicated networks are analyzed using mesh and nodal matrix methods. MATLAB is introduced as a computational tool. The course emphasis is upon ac power applications including transformers and three-phase systems. Laboratory sessions will back up the analysis with hands on exercises using electronic instrumentation.

### **ELET 2143 - Embedded Controller Fundmtls, 3 Credits**

Prerequisite(s): ELET 1111 with D or better and ELET 1133 with D or better and ELET 1143 with D or better

Corequisite(s):

Level: Lower

Fundamentals of both the hardware and software aspects of the microcontroller. A RISC (reduced instruction set computer) microcontroller is used with an in-system programmer to create an engineering development system. Structured programming code is written in assembly language, assembled and downloaded to the controller. Switches, light emitting diodes, seven segment displays, pneumatic solenoids and motors are among the devices that will be connected to the controller.

### **ELET 2151 - Electronics Laboratory I, 1 Credit**

Corequisite(s): ELET 2103

Level: Lower

The material in this course parallels and supplements the subject matter in ELET 2103. The use of appropriate electronic test equipment is emphasized, along with computer simulation, and computer aided test equipment.

### **ELET 2153 - Intro to Microelectronics, 3 Credits**

Prerequisite(s): ELET 1143 with D or better

Level: Lower

This course will provide an overview of the fabrication and operation of silicon-based integrated circuits including resistors, diodes, transistors and their current-voltage (I-V) characteristics. Laboratory exercises teach the basics of IC fabrication and I-V measurements. Oxidation/diffusion, photolithography (spin/bake/expose/develop), etch, and vapor deposition equipment allow students the opportunity to design, build, and test simple solid-state devices.

### **ELET 2163 - Data Communications, 3 Credits**

Level: Lower

This course provides a comprehensive overview of the converging world of computers and telecommunications. It introduces basic building blocks of telecommunications and most current information on new technologies. It provides an in-depth knowledge of communications fundamentals, data networking, next generation networks, wireless networks, IP protocols, IP telephony, VPN, Digital video and TV standards, optical networking and broadband networking.

### **ELET 3103 - Electronics Theory II, 3 Credits**

Prerequisite(s): ELET 2103 with D or better

Corequisite(s): ELET 3151

Level: Lower

This course concentrates on the theory and application of operational amplifiers. The gain, frequency response, and impedance of inverting and non-inverting amplifiers are analyzed in detail. Different feedback circuits are studied to realize basic mathematical operations such as summing, integration and differentiation. Operational amplifier topologies are then used to design filters, oscillators, communications circuits and regulated power supplies.

### **ELET 3143 - Intn Desktop OS in Netwrk Dsgn, 3 Credits**

Prerequisite(s): ELET 1003 with D or better

Level: Lower

This course will introduce current workstation operating systems technologies. The course will include client-side networking technologies and will be an intensive, hands-on, in-depth study of design and integration of current workstation operating systems in an enterprise environment. Laboratory activities will include the installation, configuration, and support of



workstation operating system hardware, software, and network connectivity not only on a single server based LAN system, but will also cover tools and techniques for design and support of a large networking system. Students will design, plan and deploy technical support of workstation hardware, operating system, and network connectivity. The design of Microsoft's latest workstation operating system will be thoroughly examined. Students will be prepared to take an appropriate workstation operating system professional certification exam upon course completion.

**ELET 3151 - Electronics Laboratory II, 1 Credit**

Prerequisite(s): ELET 2103 with D or better

Corequisite(s): ELET 3103

Level: Lower

This laboratory is an experimental study of operational amplifiers and linear integrated circuits as applied to comparators, amplifiers, waveform generators, signal conditioning, and regulated power supplies. Emphasis is placed on design, proper measuring techniques and documentation of results. Device characteristics and limitations will be studied. The use of manufacturer's data sheets is required. Computers are used to design, analyze and test circuits along with manual measuring techniques.

**ELET 3163 - Voice & Data Communications, 3 Credits**

Prerequisite(s): ELET 2103 with D or better

Level: Lower

This course will provide a comprehensive overview of the converging world of computers and telecommunications. It will introduce basic building blocks of telecommunications and most current information on new technologies. Fundamental signaling principles and how early telephone and computer inventions influenced modern technology will be discussed. Topics such as switching, data transmission, broadband, wireless LANs, network access methods, techniques and tools involved in recognizing and addressing information security threats and voice-over-network and convergence technologies will be discussed. It will provide a solid foundation for more advanced studies in voice and data networking.

**ELET 3444 - Electronic Communications I, 4 Credits**

Prerequisite(s): ELET 2103 with D or better and ( MATH 2043 with D or better \* or MATH 1084 with D or better \* or MATH 2043 with D or better or MATH 1054 with D or better )

Level: Lower

Offers the study of analog and digital communication concepts and systems. Students begin by learning the terminology and measurements of the communications industry. The course includes analysis of AM and FM transmission and reception, data communications, and transmission lines. Emphasis is on a systems approach with block diagrams and study of the concepts within each block. The associated laboratory tests and demonstrates the lecture theory. Students investigate a chosen application further in an individual project.

**ELET 4114 - Network Management, 4 Credits**

Prerequisite(s): ELET 2012 with D or better \*

Corequisite(s):

Level: Lower

A course in networking technology covering the management, troubleshooting and administration of the network operating system and infrastructure portion of LAN (Local-Area-Network) systems.

**ELET 4143 - Electrical Machines & Controls, 3 Credits**

Prerequisite(s): ELET 1103 with D or better

Level: Lower

Study of the principles and applications of dc and ac rotating machines and associated protective and control equipment. Basic functions such as control of motor speed and direction of rotation and basic PLC programming are laboratory projects. Servo and stepper motors for motion control are examined.

**ELET 4154 - Microelectronics, 4 Credits**

Prerequisite(s): ELET 1143 with D or better and ELET 1103 with D or better

Level: Lower

This course provides the student with a realistic experience in semiconductor manufacturing processes. Oxidation/ diffusion, photolithography (spin/bake/expose/develop), etch, and vapor deposition equipment allow students the opportunity to design, build, and test simple solid-state devices.

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### **ELET 4174 - Network Infrastructure Essenti, 4 Credits**

Level: Lower

Students will learn the basics of telecommunications and network cabling and wiring devices, as well as suggested best practices and safety issues. The students, through hands-on activities and labs, will learn to install horizontal (work area) and backbone cable. This hands-on, lab-oriented course stresses documentation, design, and installation issues, as well as laboratory safety, on-the-job safety, and working effectively in group environments. This course prepares students for the Panduit Authorized Installer (PAI) certification.

### **ELET 4224 - Alternative Energy Generation, 4 Credits**

Prerequisite(s):

Level: Lower

The purpose of this course is to provide students with a realistic look at the potential and the limitations of electrical generation through energy conversion. The energy sources include solar, wind and water. The course will include semiconductor properties of photovoltaic cells and the electronic circuits necessary for energy conversion. Using trigonometry, students will be able to calculate the position of the sun at any time or place and calculate the energy available at different panel orientations. Students will have the beginning tools to design off-grid and on-grid photovoltaic energy systems. MATLAB and LabVIEW software will be used to analyze and measure the solar resource.

### **ELET 4233 - Integrtn of Svr Operatng System, 3 Credits**

Corequisite(s): ELET 3143

Level: Lower

This course will introduce server-side operating system networking technologies. It will be an intensive, hands-on, in-depth study of design of current server operating systems in a LAN (Local Area Network) environment. Laboratory activity will include design, development, configuration, and placement of servers and services. The students will design, plan and deploy technical support of server hardware, operating system, and network connectivity. The design of Microsoft latest server operating system will be thoroughly examined. Students will be encouraged to take an appropriate server operating system professional certification exam upon course completion.

### **ELET 4234 - Intgn Server OS in Netwk Desgn, 4 Credits**

Prerequisite(s): ELET 3143 with D or better

Level: Lower

This course will introduce server-side operating system networking technologies. It will be an intensive, hands-on, in-depth study of design of current server operating systems in a LAN (Local Area Network) environment. Laboratory activity will include design, development, configuration, and placement of servers and services. Students will design, plan and deploy technical support of server hardware, operating system, and network connectivity. The design of Microsoft latest server operating system will be thoroughly examined. Students will be encouraged to take an appropriate server operating system professional certification exam upon course completion.

### **ELET 4900 - Directed Study, 1 to 6 Credits**

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

### **ELET 5004 - Electrical Power Systems, 4 Credits**

Prerequisite(s): ELET 1103 with D or better and MATH 2043 with D or better

Level: Upper

Electrical principles, laws, theorems and complex notation applicable to AC circuits. Principles of generation and distribution of single and three phase power. Load flow and short circuit analysis.

### **ELET 5113 - Electronic Communications, 3 Credits**

Prerequisite(s): ELET 2103 with D or better

Level: Upper

This course offers the study of analog and digital communication concepts and system. Students begin by learning the terminology and measurements used in the communication

industry. The course includes analysis of AM, and FM transmission and reception, Single-Sideband communications, Digital Wired and Wireless Communications, Network Communications, and Multiplexing & De-multiplexing techniques. Emphasis is on the system approach with block diagrams, with the presentation of theoretical fundamentals and study of the concepts within each diagram. The associated laboratory and projects augment the lecture theory. Students investigate further by completing an individual project.

**ELET 5401 - Certification Seminar, 1 Credit**

Prerequisite(s): CISY 4283 with D or better

Level: Upper

Individualized hands-on practice and review session for Cisco Certified Network Associate (CCNA) professional exams, as well as other appropriate certifications.

**ELET 5414 - Network Design & Implementation, 4 Credits**

Prerequisite(s): ELET 5224 with D or better

Level: Upper

This course teaches students through lectures, discussions, demonstrations, textbook exercises, and labs the skills and abilities necessary to design an Active Directory and network infrastructure that meets the technical and business requirements of an organization. Understanding the design process, the required components, and the integration of technologies are key elements in this course. This course also covers networking terminology, national and international standards relating to networks, the fundamentals of network transmission methods, network topologies, network protocols, and network architecture. The course will also include the hardware, design and configuration, troubleshooting and administration of the directory services and network infrastructure portion of LAN and WAN (Local-Area- Network and Wide-Area-Network) systems. The completion of laboratory projects will develop the student's professional skills in network design and implementation. This will lead to further study of networking or employment. Each lab is structured as a team project which will enhance the student's ability to function in a design team.

**ELET 5900 - Directed Study, 1 to 6 Credits**

Level: Upper

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**ELET 6004 - Advanced Power Systems, 4 Credits**

Prerequisite(s): ( ELET 2124 with D or better or ELET 2123 with D or better ) and ELET 2103 with D or better

Level: Upper

This course is the study of electrical power transmission and conversion. A project involves the design of a dc-dc converter from theory through a completed printed circuit board. Circuit topologies studied include linear, buck, boost and buck-boost converters. On the utility scale, ac circuit theory is applied to grid power flow and transmission line models. Synchronous generators and transmission lines are modeled in theory and examined in the laboratory. Power electronics are analyzed for their role in conversion and transmission.

**ELET 6014 - Microelectromechanical Systems, 4 Credits**

Prerequisite(s): ELET 2153 with D or better or ELET 4154 with D or better

Level: Upper

This course will provide an opportunity for the student to become familiar with the technology and applications of microelectromechanical systems. This is one of the fastest growing areas in the semiconductor business. Today's applications include accelerometers for air bag deployment, pressure sensors, flow sensors, optical systems and micromotors. Emphasis is on the different technologies compared to the standard semiconductor processing technologies. The lecture provides necessary understanding of the various process technologies used to fabricate MEMS devices. The Laboratory allows the students to design a MEMS device, design a process to fabricate the device and make and test a MEMS device.

**ELET 6103 - Computer Architecture, 3 Credits**

Prerequisite(s): ELET 2143 with D or better and ELET 2103 with D or better

Level: Upper

The course offers the study of advance topics of computer architecture to CET and

## COURSE DESCRIPTIONS

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information systems/technology students. It provides a technical foundation for system design, system implementation, hardware and software and computing resource management. It asks students to solve technical problems and communicate effectively with technical specialists. Emphasis will be on computer architecture, processor technology, data storage technology, data and network communication technology and operating systems.

### **ELET 6224 - Switching & Power Electronics, 4 Credits**

Prerequisite(s): ELET 2103 with D or better

Level: Upper

Design and analysis of linear and switching regulators and power converters using state-of-the-art components and devices. Topics to be covered will include: basic building blocks of modern power supply systems; circuits for the generation and processing of pulse and switching waveforms; transistor, rectifier, IC, transformer, inductor, capacitor, and resistor selection; thermal design considerations, feedback and stability analysis; RFI considerations.

### **ELET 7104 - Integrated Circuit Technology, 4 Credits**

Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better

Level: Upper

This course is an introduction to the physics, chemistry and materials of integrated circuit fabrication. Topics include the basic process steps of crystal growth, oxidation, photolithography, diffusion, ion implantation, chemical vapor deposition (CVD) and metallization used to build integrated circuits. The laboratory uses a 4-level metal gate PMOS process to fabricate a working integrated circuit test-chip and provide experience in device design, process design, materials evaluation, in-process characterization and device testing.

### **ELET 7204 - Routing and Switching, 4 Credits**

Prerequisite(s): ELET 3143 with D or better

Level: Upper

This is a course in network infrastructure concentrating on switch and router configuration and operation to support both LAN and WAN environments. In addition to the fundamentals of routing protocols, topics will include subnetting, VLSM, EIGRP and OSPF routing protocols, packet monitoring and filtering, VLAN configuration, Network Address Translation (NAT), Wireless LANs, IPv6, Voice over IP and security implementation. The laboratory component is hands-on in a multiple router-multiple switch environment. The completion of laboratory projects will develop the student's professional skills in switch and router configuration and operation. This will lead to further study or employment. A research-based team paper and presentation on future trends in routing and switching will be required as part of this course.

### **ELET 7404 - Embedded & Real Time Systems, 4 Credits**

Prerequisite(s): ELET 2143 with D or better and CISY 5123 with D or better

Level: Upper

This course prepares the students for the design and implementation of a real-time operating system (RTOS) on an embedded microcontroller. The course is constructed around a project where each student is required to design and prototype a real-time traffic light using MicroC/OS-II operating system loaded on a PIC18F452 microcontroller. The lecture portion of the course is comprised of lectures and quizzes that support the course project. Lecture topics include basic characteristics of the real-time applications and real-time operating systems, hardware interfacing techniques, fixed and dynamic priority scheduling algorithms, concurrency theory, intertask communication, synchronization, response-time analysis, Petri-net modeling, fixed-point computations, and optimization. The lab portion of the course consists of labs that provide the building blocks of the course project. Upon completion of the course project students will compare MicroC/OS-II with other similar operating systems such as FreeRTOS and Salvo.

### **ELET 8214 - Circuit Des & Implementation, 4 Credits**

Prerequisite(s): ELET 2103 with D or better and ( MATH 4114 with D or better or MATH 5014 with D or better )

Level: Upper

Calculus-based circuit theory includes representation of ideal and non-ideal characteristics of circuit elements. Circuit analysis using fundamental circuit laws, network theorems and

standard engineering complex variable notation. Transistor circuits are modeled using realistic parameters including junction capacitances and internal noise generation. Circuit models are applied to amplifier designs for low noise, high frequency response, etc. Laboratory implementation is compared to mathematical models, computer simulation, general purpose interface bus testing and discrepancies are resolved.

**ELET 8706 - ECET Internship, 6 Credits**

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. At the end of the internship students will be required to give an oral presentation to the faculty about their internship experiences.

**ELET 8712 - ECET Internship, 12 Credits**

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. At the end of the internship students will be required to give an oral presentation to the faculty about their internship experience.

**ELECTRICAL/ELECTRONICS****ELTR 1156 - Residential Wiring I, 6 Credits**

Corequisite(s): ELTR 1166 ELTR 1176

Level: Lower

This lecture course introduces a student to the theories, principles, and laws of static and dynamic electricity. Direct and alternating current circuits are studied utilizing the related trade mathematics covering topics such as Ohm's law, resistance, power, inductance, and capacitance. Major emphasis is placed on applying trade related mathematics and analytical reasoning to troubleshooting series, parallel and compound circuits. National Electrical Code requirements and proper techniques for soldering/terminating conductors are covered. Students will learn to interpret and draw electrical schematics and wiring diagrams relating to low voltage signal circuits. The National Electrical Code and its application to residential branch circuit requirements and non-metallic wiring methods as well as correct electrical and component terminology is introduced.

**ELTR 1166 - Residential Wiring Lab IA, 6 Credits**

Corequisite(s): ELTR 1156 ELTR 1176

Level: Lower

Students will apply techniques learned in theory required to make proper terminations and soldered splices. Alternating and direct current circuits are constructed and students will analyze and confirm electrical principles and applicable laws. Emphasis is placed on safety, craftsmanship, correct, and accurate laboratory test procedures using appropriate test equipment such as Volt- Ohm-Milliampere Meters (VOM). Schematic drawings are required for each circuit and outside of lab, report and analysis writing is necessary.

**ELTR 1176 - Residential Wiring Lab IB, 6 Credits**

Corequisite(s): ELTR 1156 ELTR 1166

Level: Lower

Students receive hands-on training in the fundamentals of low and line voltage circuit construction. An emphasis is placed on safety, craftsmanship, NEC requirements, circuit

## COURSE DESCRIPTIONS

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planning, and circuit layout using the appropriate cable wiring methods. The correct selection and terminology of electrical components used for assigned circuits is required. Students will also demonstrate proper troubleshooting methodology and usage of test equipment required to find faults and repair electrical circuits. Time will be spent working on actual job sites. Schematic and wiring diagrams are required for each circuit and outside of lab, report and analysis writing is necessary.

### **ELTR 1501 - Appl Troubleman Prin II, 1 Credit**

Level: Lower

This course is designed for the Lineman or Cableman who wishes to pursue a career in the Electrical Trouble and Maintenance Department of an electric utility. Its intent is to ensure a base of knowledge in math and electricity that will allow the student to thrive in more rigorous future coursework in cable testing, fault locating, and troubleshooting techniques. Knowledge of electric distribution systems is assumed.

### **ELTR 1502 - Appl Troubleman Principles I, 2 Credits**

Level: Lower

This course is designed for the Lineman or Cableman who wishes to pursue a career in the Electric Trouble and Maintenance Department of an electric utility. Its intent is to ensure a base of knowledge in math and electricity that will allow the student to thrive in more rigorous future coursework in cable testing, fault locating, and troubleshooting techniques. Knowledge of electric distribution systems is assumed.

### **ELTR 1503 - Appl Skills for Substations, 3 Credits**

Level: Lower

This course is designed to teach the student fundamental principles of electrical theory, related mathematics and an understanding of electrical schematics used in the electric utility industry.

### **ELTR 1505 - Appl Prin of Elec Substations, 5 Credits**

Level: Lower

This course teaches substation electricians the skills and knowledge necessary for upgrading and improving electric substation reliability in the electric utility industry.

### **ELTR 1506 - Appl Basic Lineman Prin I, 6 Credits**

Level: Lower

This course is designed to teach students the basic skills used by lineman in the transmission and distribution of electrical energy for the electric utility industry.

### **ELTR 1513 - Ap Prc Ovhd Trns Mtnc HS Ln Ms, 3 Credits**

Level: Lower

This course is designed to teach the safe work methods used during the maintenance of a transmission system. This course requires extensive work with heavy conductors and materials used in 34kV and 115kV transmission circuits. The student will also learn how to perform energized maintenance work using hot sticks.

### **ELTR 1514 - Intro to Electric Substations, 4 Credits**

Level: Lower

This course is designed to give new substation personnel the skills necessary to understand, enter and work safely within the substation environment.

### **ELTR 1523 - Intr to Electric Substations, 3 Credits**

Level: Lower

This course is designed to give new substation personnel the skills necessary to understand, enter and work safely within the substation environment. This knowledge is necessary for wiring circuits, troubleshooting breakers, testing and calibrating protective relays.

### **ELTR 1524 - Substn Mntnce Test Prac III, 4 Credits**

Level: Lower

This course is designed to enable new substation personnel to operate and maintain high voltage components of the transmission and distribution systems of electric utilities. This course will also teach students to take and evaluate the condition of transformer insulating oil and use of the oil pump station.

### **ELTR 1533 - Substn Maintnce & Test Prac IV, 3 Credits**

Level: Lower

This course is designed to enable new substation personnel the ability to operate and maintain high voltage components of the transmission and distribution systems of electric utilities. This course will be instructed over a two-week period.

**ELTR 2156 - Residential Wiring II, 6 Credits**

Prerequisite(s): ELTR 1156 with D or better \* and ELTR 1166 with D or better \* and ELTR 1176 with D or better \*

Corequisite(s): ELTR 2166 ELTR 2176

Level: Lower

Understanding and interpretation of the National Electrical Code requirements for residential branch circuits are covered in detail. Practical considerations for the economic and adequate distribution of electrical energy are discussed, as well as the adequacy of circuit design. Reading and interpreting floor plan drawings as they relate to all trades is taught. Power calculations along with all N.E.C. and utility company requirements for the installation of any type of residential service are covered. Conduit wiring methods are covered as well as all related National Electrical Code requirements. Substantial time is spent performing the mathematical calculations utilized for designing, laying out and bending conduit. Students are required to perform all tasks in a neat craftsman-like manner. Emphasis is placed on the reasonings of why workmanship is important.

**ELTR 2166 - Residential Wiring Lab IIA, 6 Credits**

Prerequisite(s): ELTR 1156 with D or better \* and ELTR 1166 with D or better \* and ELTR 1176 with D or better \*

Corequisite(s): ELTR 2156 ELTR 2176

Level: Lower

Substantial time is spent with students working the wiring systems on actual residential homes built off campus. In lab students design, layout, and manufacture every type of bend utilized with conduit raceway systems. Conduit fill calculations are applied as well as utilizing correct methods for installing branch circuit conductors. Students are required to apply the National Electrical Code to all work done in labs and on the outside projects. Major emphasis is placed on safety, craftsmanship, circuit analysis, and troubleshooting of circuit faults. Schematic and wiring diagrams are required for each circuit and outside of lab, report and analysis writing is necessary.

**ELTR 2176 - Residential Wiring Lab II B, 6 Credits**

Prerequisite(s): ELTR 1156 with D or better \* and ELTR 1166 with D or better \* and ELTR 1176 with D or better \*

Corequisite(s): ELTR 2156 ELTR 2166

Level: Lower

The lab emphasizes the application of the complete wiring system used for residential applications. Students will be required to complete several types of services, such as riser, mast, conduit and cable installations. Students will complete their freshman capstone project, which requires each student to redraw a two story residential home to scale. They will then perform the design work and layout all of the wiring required by the National Electrical Code and ensuring that it will meet the minimum adequacy requirements of a prospective homeowner. Students will then complete a spreadsheet containing all the components with their complete descriptions that are necessary to complete the Capstone project. Schematic and wiring diagrams are required for each circuit and outside of lab, report and analysis writing is necessary.

**ELTR 2503 - Appl Basic Lineman Prin II, 3 Credits**

Level: Lower

This course is designed to build on the Basic Lineman Principles I course. It continues with the basic theory and begins teachings more advanced hands-on skills used by the lineman in the transmission and distribution of electrical energy in the electric utility industry.

**ELTR 3156 - Electrical Power Systems, 6 Credits**

Prerequisite(s): ELTR 1156 with D or better and ELTR 1166 with D or better and ELTR 1176 with D or better and ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better

Level: Lower

This course will provide instruction in the applied mathematics, circuit analysis, design, installation, distribution methods, protection, and trouble of single phase and three phase electrical power systems.

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### **ELTR 3306 - Alarms and Special Systems, 6 Credits**

Prerequisite(s): ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better

Level: Lower

This course will provide instruction in the applied mathematics, operation, design methodology, installation requirements, and National Electrical Code requirements for alarm and special systems.

### **ELTR 3326 - Magnetic Motor Controls, 6 Credits**

Prerequisite(s): ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better

Level: Lower

This course is designed to teach foundational concepts of motors and motor control. Safe work practices and code compliance procedures will be reinforced. The student will be introduced to the basic circuits, devices and components used in their control; advanced circuits of alternating, sequencing, latching, and time delay operations of motor control will be presented. The lab will progressively lead the student to a basic understanding of individual control devices. The student will apply the basic knowledge and safety protocol towards integration into a totally automated system using magnetic and solid state controls. Throughout all projects, from basic to fully automated systems, the student will be taught troubleshooting techniques of industrial motor controls. Students will be evaluated to assess their troubleshooting skills and techniques within the lab practicums.

### **ELTR 3336 - Photovltc & Wind Trbn Systm In, 6 Credits**

Prerequisite(s): ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better

Level: Lower

The course will cover the fundamentals of photovoltaic and wind power generation, installation and maintenance practices. The course content will include the components used in stand-alone systems, grid interconnect systems, and grid connected systems with battery back-up. Areas of focus will be: safe work practices and PPE, site evaluation, system sizing, zoning restrictions, funding resources, and installation practices in accordance with National Electrical Code, Building Code and NABCEP training objectives and requirements.

### **ELTR 3356 - Prgrmble Cntrls for Ind Autotn, 6 Credits**

Prerequisite(s): ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better

Level: Lower

This course presents the origin and evolution of programmable logic controllers. Special emphasis is placed on the fundamentals of Relay Ladder Logic (RLL) programming methods and the analysis of circuit operations as well as various applications of Programmable Logic Controllers (PLC's) used in modern industrial applications. Students will receive the necessary hands-on experience in lab to be able to design, program, construct, troubleshoot, and perform preventive maintenance of all components of a PLC controlled process. Students will be evaluated on troubleshooting techniques, terminations of input and output devices, and the proper maintenance of at least two different types of PLC Manufactures.

### **ELTR 3366 - Ind Automtn & Process Controls, 6 Credits**

Prerequisite(s): ELTR 2156 with D or better and ELTR 2166 with D or better and ELTR 2176 with D or better

Level: Lower

In this course, students study effective process control theory. A systems approach is used in an effort to understand each instrument's function within the system. The course will also examine how pneumatics, hydraulics, Servo motors, and system automation are used in industry today for the manufacturing of products. This course also involves the practice of hands-on effective process control theory. A systems approach is used in an effort to understand each instrument's function within the system.

### **ELTR 3503 - Appl Prac 3-Phase Distrbtn Sys, 3 Credits**

Level: Lower

This course is designed to build on the Basic Lineman Principles courses. It begins teaching more advanced hands-on skills used by the lineman in a three-phase distribution system in the electric utility industry.



**ELTR 4503 - Apl Instl Mtnce Enrgzd Pri Dis, 3 Credits**

Level: Lower

This course is designed to teach the work methods used during the safe installation and maintenance of primary conductors in a distribution system. This course requires extensive work with conductors energized at 4 kV and 12 kV.

**ELTR 4513 - Appl Bsc Cable Splicing Prin II, 3 Credits**

Level: Lower

Applied Basic Cable Splicing Principles II is the fourth course in a five course sequence focusing on the skills needed to work in the underground cable area of electric utility industry. The equipment and materials used in this course provide the most realistic hands-on training available to prepare the student for a career as a cable splicer in the electric utility industry.

**ELTR 4900 - Directed Study, 1 to 9 Credits**

Level: Lower

A student may contract for one to nine credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**ELECTROMECH ENGR TECH****EMET 3421 - Electromech Analysis Laborator, 1 Credit**

Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better and MECH 2603 with D or better

Level: Lower

The laboratory implements the theoretical principles of EMET 3423, Electromechanical Analysis. The electrical aspects of the course are completely covered in the laboratory sessions. The laboratory will include experimentation with links, slide mechanisms, scotch yoke, principles of force, torque, velocity, acceleration, inertia and friction. Techniques of instrumentation for R & D and automation including set-up and calibration of transducers, readouts, and data acquisition as well as application of computers to data acquisition, data reduction and design analysis are covered.

**EMET 3423 - Electromechanical Analysis, 3 Credits**

Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better and MECH 2603 with D or better

Level: Lower

The course is an integrating experience of mechanisms and instrumentation. The course will emphasize applications of material learned involving statics, dynamics and strength of materials and will introduce the students to vibrations. The integration of these subjects will be enhanced through the laboratory experience offered in co-requisite EMET 3421 where the student will study different mechanisms with the aid of transducers and instrumentation. The course will include the study of levers, links, slide mechanisms, cams, scotch yoke and the principles of force, torque, velocity, acceleration, inertia and friction. The course will use the principles of Equilibrium and Work-Energy along with Newton's Second Law to examine a variety of problems.

**EMET 5004 - Instrumentation, 4 Credits**

Prerequisite(s): ( PHYS 2023 with D or better or PHYS 2044 with D or better ) and ( EMET 3424 with or better or ELET 2103 with or better )

Corequisite(s): MATH 2074

Level: Upper

This course introduces the student to general characteristics of electromechanical sensors and transducers, electrical measurement systems, electronics signal conditioning, data acquisition systems, and response characteristics of instruments. The lectures focus on the selection, calibration techniques and applications of electromechanical transducers. The laboratory has industrial equipment, such as a punch press, drill press, and metal lathe, which are equipped with sensors that are configured to measure physical quantities such as force, strain, displacement, velocity, and acceleration. Data acquisition and real-time software applications using LabVIEW are applied in a laboratory environment.

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### **EMET 5093 - Intr to C Program for Windows, 3 Credits**

Level: Upper

The course begins with the fundamentals of the C and C++ language, program structure, and debugging techniques. Topics include the programming environment, data types and operators, if and case statements, loops, arrays, and strings, pointers, structures and classes, I/O and file operations. The course will focus on program development for the Microsoft Windows environment - i.e. developing Windows programs and utilizing the system resources. Must have prior programming language experience.

### **EMET 5900 - Directed Study, 1 to 6 Credits**

Level: Upper

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

### **EMET 6004 - Feedback Control Systems, 4 Credits**

Prerequisite(s): BSET 4004 with D or better and MATH 6114 with D or better

Level: Upper

Feedback control systems with topics in time response, stability, criteria, system representation, root locus diagrams, and compensation. The systems include electrical, mechanical, and electromechanical networks. The laboratory features simulation of electrical and mechanical systems using MATLAB and SIMULINK as well as a variety of physical controllers.

## **ENGINEERING SCIENCE**

### **ENGR 1201 - Engineering Sci Orientation, 1 Credit**

Level: Lower

An examination of strategies for success, including organizational and study skills, and career opportunities for computer engineering technology, electrical engineering technology and electromechanical engineering technology students in industry. There will be at least a dozen textbook and research readings followed by written assignments on topics to include the variety of engineering and engineering technology majors, diversity in society and the technical workplace, personal assessments of goals, values, strengths and weaknesses as related to student and technical career success, and employment application techniques such as resume writing, letters of application, interviewing and follow-up communications. Research assignments use library and Internet as resources and all written assignments are generated by computer.

### **ENGR 2001 - Engineering Computing Applctns, 1 Credit**

Prerequisite(s): MATH 1084 with D or better

Level: Lower

An introductory, software-oriented, engineering computing course using an interactive, high-performance, scientific and engineering software package which integrates computation and visualization in a programming environment to solve engineering application problems. Topics will include embedded mathematical functions, complex numbers, matrix manipulation, plotting, user defined script and function files, matrix algebra, numerical techniques and graphical user interfaces.

### **ENGR 2201 - Engineering Science Seminar, 1 Credit**

Prerequisite(s): ENGR 1201 with D or better

Level: Lower

The purpose of this course is to assist sophomore engineering science students in choosing and transferring to the college or university of their choice in order to complete a baccalaureate degree in engineering. Transfer admissions visitors are invited to classes and there may be class trips to potential transfer institutions depending on the interest of the students. This is a required course for the Engineering Science associate degree.

### **ENGR 2900 - Directed Study, 1 Credit**

Level: Lower

A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor

and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**ENGR 3004 - Circuit Analysis I, 4 Credits**

Prerequisite(s): MATH 2094 with D or better

Corequisite(s): MATH 6114

Level: Lower

This Calculus-based course covers DC circuit analysis including voltage, current, resistance, power and energy. Circuit analysis techniques and Kirchhoff's laws are applied to series, parallel and complex circuits. Thevenin, Norton and Superposition theorems are applied to DC circuits. Operational amplifiers are introduced. Inductance and capacitance are introduced and the transient response of RL, RC and RLC circuits to step inputs is studied using differential equations. The laboratory incorporates use of manual and computer-controlled equipment and simulation software to reinforce lecture concepts.

**ENGR 3213 - Analytical Mechanics I, 3 Credits**

Prerequisite(s): MATH 2094 with D or better and PHYS 1064 with D or better

Level: Lower

Statics at the intermediate level. Equilibrium of particles and rigid bodies in two and three dimensions, centroids, and centers of gravity, analysis of structures, friction, area and mass moments of inertia. Calculus and vector mathematics are employed throughout.

**ENGR 3254 - Systems Dynamics I, 4 Credits**

Prerequisite(s): MATH 6114 with D or better and PHYS 1064 with D or better

Corequisite(s):

Level: Lower

This course is an introduction to modeling, analysis and design of dynamic and feedback control systems using a common methodology regardless of physical discipline. Mathematical modeling, block diagrams, transfer functions, system excitation, response and stability of linear mechanical and electrical systems in both time and frequency domains will be studied using classical techniques, state space representation, matrix notation and Laplace transforms. The laboratory will include digital computer simulation of independent and coupled, first and second order electrical and mechanical systems using MATLAB and SIMULINK.

**ENGR 4004 - Circuit Analysis II, 4 Credits**

Prerequisite(s): ENGR 3004 with D or better and MATH 6114 with D or better

Level: Lower

This course covers AC circuit analysis beginning with the study of sinusoidal steady-state solutions for circuits in the time domain. Nodal, loop and mesh methods of AC circuit analyses and the Thevenin, Norton and Superposition theorems are applied to the complex plane. AC power, transformers, mutual induction, three-phase circuits and two-port networks are introduced and used for analysis. Laplace and Fourier Transforms and the Fourier Series are applied to circuit analyses. Complex frequency analysis is introduced to enable discussion of transfer functions, frequency dependent behavior, resonance phenomenon and simple filter circuits. The laboratory incorporates use of manual and computer-controlled equipment and simulation software to reinforce lecture concepts.

**ENGR 4213 - Analytical Mechanics II, 3 Credits**

Level: Lower

Dynamics at the intermediate level. Kinematics and kinetics of particles, systems of particles and rigid bodies and mechanical vibrations. Force, mass, acceleration, work power and energy, impulse and momentum. Calculus and vector mathematics are employed throughout.

**ENGR 4264 - Engr Mechanics of Materials, 4 Credits**

Prerequisite(s): ENGR 3213 with D or better and ( MATH 2074 with D or better or MATH 2094 with D or better )

Level: Lower

This course is a calculus-based study of advanced concepts in Mechanics of Materials. It addresses the behavior of deformable mechanical components when subjected to tension, compression, torsion, flexure/bending or a combination of these loads. Extensive use is made of free body diagrams as well as Mohr's Circle for stress and strain. Experience is gained in the analysis of beam deflection, shafts in torsion, power, column buckling and thin walled pressure vessels. Analysis includes examination of stress concentrations, elastic and

## COURSE DESCRIPTIONS

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inelastic response, residual stresses, indeterminate structures and thermal effects. Superposition, singularity functions and theories of failure are studied. Laboratory experiences include traditional mechanical material testing and computer software applications.

### **ENGR 4900 - Directed Study, 1 to 6 Credits**

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

## **ENVIRONMENTAL TECHNOLOGY**

### **ENVR 3003 - Interntl Issues in Agroecology, 3 Credits**

Level: Lower

This course will explore the issues of food production and consumption, the persistence of hunger and malnutrition in a world of plenty, and the role of science and technology in pursuing the elusive goal of 'food security for all' using a multi/interdisciplinary perspective. Comparative analysis is used throughout the course to explore topics which link ecology, culture, economics, and the ability of societies to sustain healthy environments and viable food and farming communities.

### **ENVR 4411 - Environmental Capstone Seminar, 1 Credit**

Prerequisite(s): ENVR 4424 with D or better \*

Level: Lower

This course is intended for students in the last semester of the Environmental Technology program. Current environmental issues are considered by utilizing guest speakers, an alumni panel, and audiovisual resources. Field trips are made to regional sites of environmental interest. A job search is organized and resumes are prepared with cover letters.

### **ENVR 4413 - Environmental Law, 3 Credits**

Prerequisite(s): BIOL 2801 with D or better and BIOL 2803 with D or better

Level: Lower

This course is a non-technical overview of environmental law and public policy. Included in the course are laws, regulations and policies governing water pollution, air pollution, solid waste, hazardous waste, global commons, land use, pesticides, energy, and public lands. The social concerns of environmental regulation such as environmental economics, risk assessment and environmental impact statements are also explored. The conflict/perceived conflict of economic development with environmental protection is particularly stressed. In addition, environmental problems, public policy, administration, politics and philosophy are studied.

### **ENVR 4424 - Envirnmntl Chem & Microbiology, 4 Credits**

Prerequisite(s): BIOL 2801 with D or better and BIOL 2803 with D or better and ( CHEM 2984 with D or better or CHEM 2124 with D or better )

Level: Lower

This is the capstone" course for students in the Environmental Technology curriculum. The course includes a survey of the techniques used for sampling and laboratory analysis of soil

### **ENVR 4900 - Directed Study, 1 to 4 Credits**

Level: Lower

A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

## **ENGLISH SECOND LANGUAGE**

### **ESOL 1312 - Guide to US Culture for ESOL, 2 Credits**

Level: Lower

This course is designed for international students at the low- to mid-intermediate level of English proficiency (COMPASS ESL Placement Test scores less than 80 on Reading and 82 on Listening). This course uses case studies, critical incidents, and discussion topics to learn to speak and act comfortably in new cultures. Students will explore cultural views, accepted wisdom and experiences by identifying, describing, analyzing, and comparing and contrasting their home culture with American culture through everyday situations such as the classroom, roommates, shopping, dating, going to the doctor, and participating in social events. Students will also learn English idioms and phrasal verbs commonly associated with these topics.

**ESOL 1313 - Intermediate Academic Writing\*, 3 Credits**

Level: Lower-Developmental/Remedial Course

Course Attributes: Remedial

This course concentrates on improving the writing ability of low- to mid-intermediate non-native users of English. Students will strengthen their paragraph writing skills and begin to write multiple paragraph essays. Students will also practice editing skills in order to correct their writing for basic verb forms, mechanics, and punctuation. This course is intended for students who earned below an 83 on the COMPASS ESL Grammar/Usage Placement Exam.

**ESOL 1314 - Int Academic English Comm\*, 4 Credits**

Level: Lower-Developmental/Remedial Course

Course Attributes: Remedial

This course develops the low- to mid-intermediate English speaker's speaking and listening skills. Students will use level-appropriate academic content as a means for vocabulary development and to practice note-taking skills. Group work, whole class discussions, and presentations will offer students ample opportunity to practice their English conversational skills in order to be able to move to the advanced level of study. This course is intended for students who earned less than an 82 on the Listening portion of the COMPASS ESL Placement Exam.

**ESOL 1323 - Intermediate Academic Reading\*, 3 Credits**

Level: Lower-Developmental/Remedial Course

Course Attributes: Remedial

This course focuses on improving reading fluency, vocabulary, and academic skills from a low-intermediate to a high-intermediate level of proficiency. Students will learn to apply pre-reading, while-reading, and post-reading practices such as identifying main ideas and supporting details, outlining, skimming, and making predictions and inferences to increase reading competence while building academic vocabulary through word- and sentence-level activities. This course is intended for students who earned less than an 80 on the Reading portion of the COMPASS ESL Placement Exam.

**ESOL 1412 - Intercultural Communications, 2 Credits**

Level: Lower

This course is designed for international students and is focused on equipping them with the cultural understanding they need in order to successfully interact with speakers of American English. Students will gain a deeper understanding of American values, behavior, attitudes, and communication styles through readings, cross-cultural communications exercises, and discussion. Time will also be devoted to the idioms and phrasal verbs that dominate informal American English.

**ESOL 1413 - Advanced Academic Writing, 3 Credits**

Level: Lower

This course focuses on equipping non-native English speaking students with the English language writing skills necessary to be successful in entry level college courses. Students will learn to minimize the influence of the native languages through targeted practice and the use of specific linguistic strategies. Intended for students who have TOEFL scores less than 500 on the paper test, 173 on the computer based test, or 61 on the Internet based test.

**ESOL 1414 - Advanced Academic English Comm, 4 Credits**

Level: Lower

This course focuses on the development of listening comprehension and conversational proficiency through engaging tasks using authentic academic contexts and the teaching of listening and speaking strategies. Students will learn to take part in academic discussions, lectures, student study groups, and one-on-one times with instructors across a wide variety of academic disciplines. This course is intended for students who have TOEFL scores less than

## **COURSE DESCRIPTIONS**

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500 on the paper test, 173 on the computer based test, or 61 on the Internet based test.

### **ESOL 1423 - Advanced Academic Reading, 3 Credits**

Level: Lower

This course focuses on improving reading fluency, vocabulary, and academic skills necessary for success in entry level college courses. Students will learn to apply pre-reading, while-reading, and post-reading practices to increase reading efficiency while building academic vocabulary through word and sentence-level activities. This course is intended for students who have TOEFL scores less than 500 on the paper test, 173 on the computer based test, or 61 on the Internet based test.

## **FOOD SERVICE**

### **FDSR 1084 - Sanitation & Food Safety, 4 Credits**

Level: Lower

This course is an introduction to the basic aspects of culinary arts sanitation with emphasis on various types of food service operations, correct sanitation procedures, rules and regulations pertaining to the safe use and maintenance of small tools and heavy equipment, correct methods of customer service, and personal hygiene as related to foods and food service. Students may earn certification from the Education Foundation of the National Restaurant Association as part of the program.

### **FDSR 1143 - Menu Planning, 3 Credits**

Level: Lower

This is an introductory course that will teach proper service protocol, dining room etiquette, ordering and use of point of sales systems. As the semester progresses, other topics will include: basic principles of menu planning with emphasis on classical menu patterns; menu formats and relationship of the menu to the complete operation of a food service establishment, and pricing of basic menu items.

### **FDSR 1153 - Introduction to Baking, 3 Credits**

Level: Lower

This is an introductory course in baking. The course will cover basic baking ingredients and how they affect final product outcome. Emphasis will be placed on quality baked goods, weights, measurements, equipment and importance of accuracy, and basic procedures common to baker formulas.

### **FDSR 1373 - Foods, Ingredients & Products, 3 Credits**

Level: Lower

This course emphasizes definitions and explanations of cooking and baking terms and selection of ingredients and products. The students will learn about the foundation principles of food preparation through a study of the chemical and physical properties of food, the nature of reactions caused by environmental conditions during preparation, cooking or baking, and the affect of materials added during some phase of preparation or cooking. The student will explore common practices in food preparation including soups, stocks, vegetables, sauces, salads and dressings, etc.

### **FDSR 1478 - Quantity Food Lab Unit 1, 8 Credits**

Level: Lower

The student will acquire experience in the preparation of and service of quantity foods with an emphasis on school, institutional, and commercial cafeterias, and an à la carte restaurant. The course covers basic equipment usage, knife skills, and storage and inventory procedures. Students will acquire experience in salad and stock preparation and will learn about the fabrication of chicken, pork, and beef cuts. Scientific economics as well as the artistic aspects of food preparation will also be developed as the student becomes involved in each area of food production.

### **FDSR 1578 - Quantity Baking Lab Unit I, 8 Credits**

Level: Lower

This lab section introduces students to the fundamental aspects of baking. Students will learn about the preparation and use and safety considerations of baking equipment. Students will get hands-on experience preparing fried bakery goods, yeast doughs, quick breads, pies, cookies, cakes and icings. Students will rotate bi-weekly through experiences

with general baking concepts, preparation, equipment use, safety, mixing, panning and finishing of the products.

**FDSR 2043 - Fundamentals of Nutrition, 3 Credits**

Level: Lower

This course will cover the function and importance of nutrients and vitamins in the body, daily nutritional requirements, important food sources and the effects of nutrient deficiencies. Nutritional guidelines and standards will also be reviewed. The importance of producing, storing, and using nutritious ingredients in the daily production of food will be stressed. In addition, students will examine various topics related to the American diet such as fad diets, herbs and supplements, diet and exercise, weight loss diets, and food additives.

**FDSR 2183 - Food Purchasing Techniques, 3 Credits**

Level: Lower

This course introduces students to the procedures and techniques involved with food service purchasing and storage, including the Five Rights" (right product

**FDSR 2253 - Hospitality Cost Control, 3 Credits**

Level: Lower

This course incorporates basic math as related to the food service industry. Topics will include: principles of food cost controls, daily yields and menu pricing, monthly report forms, food check preparation, recipe conversion and standardization procedures. This course will also cover cashier's report procedures, the use of balance sheets to determine the state of a food service operation, and costing as related to budgeting, improvements of operation efficiency and comparisons of similar operations.

**FDSR 2479 - Quantity Food Lab Unit II, 9 Credits**

Prerequisite(s): FDSR 1478 with D or better

Level: Lower

This lab is a study and practice of the principles, standards and procedures involved in quantity and quality food preparation. The rotation of duties involves all areas of preparation, service and sanitation within the à la carte restaurant and cafeteria. The course emphasizes improvement of basic knife skills, fabrication skills, and bakery skills needed for the preparation of breakfast items, meat, fish and poultry, soups and vegetables.

**FDSR 2489 - Quantity Baking Lab Unit II, 9 Credits**

Prerequisite(s): FDSR 1578 with D or better

Level: Lower

This lab section develops intermediate level skills in baking and production. Students will build on skills learned in FDSR 1578 and will rotate bi-weekly through experiences with yeast doughs, pastries, specialty cookies, finishing and decorating.

**FDSR 3163 - Furnishing and Equipment, 3 Credits**

Level: Lower

This course is a study of food service equipment and furnishings. The course will emphasize specifications, definition and justification of equipment needed, the selection of furnishings, the cost factors, and the proper procedures involved in effective maintenance.

**FDSR 3253 - Beverages, 3 Credits**

Level: Lower

This course addresses the problems peculiar to the alcoholic beverage industry. Students will learn about the history, classification, methods of production, and characteristics of wine, spirits and beers, mixology and lounge service, systems of beverage controls, and laws controlling beverage sales.

**FDSR 3293 - Intermediate Baking, 3 Credits**

Level: Lower

This course will teach students the proper procedures and mixing methods used in retail bakeries with an emphasis on the intricate techniques used to produce quality baked goods. The course will cover the specifics of yeast doughs, pastries, fillings, gateaux, meringues, and icings.

**FDSR 3353 - Hospitality Pers Relations I, 3 Credits**

Level: Lower

This course is the study of various supervisory techniques. This course will emphasize the responsibilities of management and personnel including elements of operational control, profit motivation, employee productivity, and the development of personal communication

## COURSE DESCRIPTIONS

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skills. Labor cost and budgets will be discussed. Students will give an oral report on their summer work experience as it relates to the personnel management.

### **FDSR 3479 - Quantity Food Lab Unit III, 9 Credits**

Prerequisite(s): FDSR 1478 with D or better and FDSR 2479 with D or better

Level: Lower

Students will practice menu planning and preparation of restaurant items in the working labs of the program. This lab provides introductory experience to develop supervisory skills in the kitchens and dining room. The student is expected to develop mastery of skills for a la carte and volume feeding, food preparation and service, with emphasis on accepted culinary techniques and presentation.

### **FDSR 3489 - Quantity Baking Lab Unit III, 9 Credits**

Prerequisite(s): FDSR 1578 with D or better and FDSR 2489 with D or better

Level: Lower

This lab section develops advanced techniques and disciplines for fine dining and high volume baking operations. Students will rotate weekly through experiences with wedding cakes, specialized pastries, cakes, tortes, seasonal baked goods, and specialty dough. The student will gain an understanding of advanced baking techniques as documented in the Lab Outcomes and Requirements Handbook.

### **FDSR 4032 - Facilities Planning & Design, 2 Credits**

Level: Lower

This course covers the planning and designing of a food service facility, from the initial concept, to menu design, demographics, choice of building facility, economic factors, legal and regulatory issues, space allocation, back of the house" issues

### **FDSR 4043 - Advanced Baking, 3 Credits**

Level: Lower

This course will introduce the student to specialized techniques in baking and pastry skill development covering a wide-range of topics not included in the intermediate baking course. Topics include petit fours, candy making, fillings; decorative sugar, pretzels, bagels, specialty breads, along with assigned special projects.

### **FDSR 4163 - Advanced Cuisine, 3 Credits**

Level: Lower

This course deals with advanced cooking techniques and cuisine issues. Much of the activity is directed toward developing and refining a personal culinary philosophy by the students. Students will study cooking techniques in depth with a view to refining their use, and will study basic methods of merchandising in the foodservice industry. The course will introduce topics and begin discussion (and raise awareness) about sustainable food production and will establish a firm connection between cooking and culture for the students.

### **FDSR 4255 - Hospitality Personnel Relat II, 5 Credits**

Prerequisite(s):

Level: Lower

This course will cover the fundamentals of personnel management relating to motivation, performance, employee rights and labor relations. The course emphasizes basic strategic planning, ways to implement plans, and the application of planning to daily operations. The course will cover topics such as management and employee points of view, organizational patterns, job procurement and training, job analysis, and the role of the government. Special emphasis will be placed on the study of unions and the role they play in the workplace.

### **FDSR 4478 - Quantity Food Lab IV, 8 Credits**

Prerequisite(s): FDSR 1478 with D or better and FDSR 2479 with D or better and FDSR 3479 with D or better

Level: Lower

This lab section provides students with hands-on managerial experience in the planning, organizing and directing of kitchen production. Students will rotate through experiences as chef, station cook and dining room manager. These experiences will help students develop a personal/professional cooking style through creativity, innovation and synthesis based on previous lab exposures. The lab will emphasize refined sauce making, braising, smoking, cooking proteins to order and sophisticated plate presentation.

### **FDSR 4488 - Quantity Baking Lab Unit IV, 8 Credits**



Prerequisite(s): FDSR 1578 with D or better and FDSR 2489 with D or better and FDSR 3489 with D or better

Level: Lower

This lab section provides students with hands-on managerial experience planning, organizing, and direction of bake-shop production. Students will rotate weekly through experiences with plated desserts, chocolate sculpting, sugar artistry, candy production and artisan breads. This lab will help students develop a personal/professional baking style through creativity, innovation, and synthesis.

**FDSR 4749 - Industry Work Study I, 9 Credits**

Level: Lower

An approved work experience with in-depth practice and supervision in the student's particular field of interest within the food service industry with work study program agreements between the Food Service Department instructional staff, the student, and the cooperating employer; satisfactory completion of the work experience required for a passing grade.

**FDSR 4769 - Industry Work Study II, 9 Credits**

Level: Lower

Continuation of the independent work study program with greater emphasis on advancement within the food service structure and structured rotation of training.

**FDSR 4900 - Directed Study, 3 to 9 Credits**

Level: Lower

A student who has successfully completed three semesters of Food Service courses may arrange for three, five, or nine credit hours of directed study to provide an opportunity to continue study in a subject area of special interest. Directed study may be conducted by a student only through an arrangement with the Food Service Instructional Staff who are to direct such a study. The student will submit a plan acceptable to the instructional staff and will confer regularly regarding his or her progress.

**FILM STUDIES****FILM 3113 - History of Italian Cinema, 3 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

This course provides an in-depth study of the history of Italian Cinema from its beginnings in the first decade of the 20th Century until the present. Students will study the various social, political, technological, and artistic influences on Italian Cinema throughout its history.

**FINE ARTS****FNAT 1013 - Art Appreciation, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

Art Appreciation will introduce the student to the meaning of what Art is and is about. Special emphasis is placed on open discussion to create an awareness of why men and women have valued the arts which have become a driving force as they developed and became civilized. Students will see how the arts are really part of their daily lives by reading, viewing slides and works of art, and by creating. Writing is continued in assignments related to readings, class discussions, and lectures.

**FNAT 1023 - Introduction to Theatre, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

The primary objective of this course is to develop knowledge and appreciation of theatre arts. This will be done through a study of theatrical traditions and dramatic literature from classical theatre to the contemporary. Writing is continued in assignments related to readings, class discussions, and lectures.

**FNAT 1133 - Surv of Art Hist:Ancnt Grk Art, 3 Credits**

Level: Lower

## COURSE DESCRIPTIONS

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Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

Art is the highest expression of a culture. Political, historical and social changes are the heart of art". Works of art are a reflection of the ages in which they are produced and are often used as a "tool" to carry messages. This course will consider the development of art through the centuries and how it affected today's arts

### **FNAT 1303 - Architectural History I, 3 Credits**

Prerequisite(s): COMP 1503 with D or better

Corequisite(s): COMP 1503

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

This is a survey course of the origin and development of historically notable architecture throughout the world from the 10th century BCE to 1900. From the settlement of Catal Huyuk in ancient Anatolia (now Turkey) in the Neolithic Era through Eclecticism, the era of stylistic revivals in the late 19th century, the students will be exposed to a wide variety of buildings, as well as introduced to the corresponding cultures and religions.

### **FNAT 1313 - Art History, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

Art History is a comprehensive survey course which views the visual arts as a humanistic discipline. Students will see the condition of our western tradition as encountered from the magic of caveman to the complexities of the twentieth century. Emphasis will be placed on the variety of purposes for which art has been produced. Writing is continued in assignments related to readings, class discussions, and lectures.

### **FNAT 2413 - Music History, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

Music History is a survey of musical performance with an emphasis on characteristics of style involving form, melody, and texture. Important composers and their works will be heard in class. Discussion of these works will include socio-cultural influences of music upon society and the functions of music and its effectiveness as an art form. Writing is continued in assignments related to readings, class discussions, and lectures.

### **FNAT 2423 - 3D Design/Color, 3 Credits**

Prerequisite(s): CIAT 1423 with C or better or DGMA 1423 with C or better

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

In this course, the student examines relationships between form, structure (response to gravity), process, skill, and intention in regard to three-dimensional visual art making. This inter-relationship dictates that every project incorporate some element of each of these concerns. Emphasis is placed on providing a wide range of experiences through projects which gradually increase in complexity as the student gains skills and awareness.

### **FNAT 2433 - Figure and Motion, 3 Credits**

Prerequisite(s): CIAT 1413 with C or better or DGMA 1413 with C or better

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

This course is designed to expand upon the fundamental skills of the Foundations: Form/Space Relationship course through the use of the human model. Proportion, perspectives, plus structural and locomotion dynamics will be studied. Students will focus on the mechanics of motion.

### **FNAT 2443 - Intro to Digital Photography, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

Introduction to Digital Photography gives students fundamental skills for effectively recording travel, home, and work experiences. Using digital photography as a tool, students are encouraged to become more careful observers of the people, the landscape, the art, the architecture, and the culture that they encounter in their daily lives. The course concentrates on technical lectures and lab/studio time regarding the basic operation of a digital camera and the processing of images. Students develop an understanding of the elements that combine to create powerful visual images: subject matter, composition, color,

and light. Through selected readings, assignments, lab/studio time, and critiques, students produce a written and visual final project for the course. Students are responsible for providing their own cameras, supplies, and image editing software.

**FNAT 2900 - Directed Study, 1 to 4 Credits**

Level: Lower

Course Attributes: Gen Ed - The Arts

The student may contract for one to four hours of independent study through an arrangement with the instructor. The student must submit a plan acceptable to the instructor, and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

**FNAT 3413 - Music of Western Cultures I, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

This course is designed to introduce and familiarize the student with the ethnic musical traditions and diversity in western cultures. The course will emphasize the Latin American, Caribbean, and Polynesian styles of root (hybrid), folk, and traditional forms and will include fundamental concepts of musical theory and form.

**FNAT 3513 - Art History II, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

This course is an introduction to understanding art. You will become aware of the relationship of media, artistic expression and the context of the cultural period which formed the art object. For most students the art of our own times is difficult to understand; for this reason, the main emphasis of the course will be contemporary culture and its interpretation of traditional imagery. Through written critical analysis of visual art issues students will gain experience discussing how art is created and what it means.

**FNAT 4413 - Music of Westn Cultures II NA, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - The Arts, Liberal Arts and Science

This course is designed to introduce and familiarize the student with the ethnic diversity within North American music. The course will explore the folk, traditional, jazz, and popular idioms that are found in the United States and Canada. Students will become aware of the intercultural effects within North American music and the influence of music from other global cultures. Students will also be introduced to the modern twentieth century forms, new age (alternative), and global fusion.

**FNAT 4900 - Directed Study, 1 to 5 Credits**

Level: Lower

A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**FNAT 5303 - Architectural History II, 3 Credits**

Prerequisite(s): FNAT 1303 with D or better

Level: Upper

Course Attributes: Liberal Arts and Science

This course addresses the study of the origin and development of modern architecture from the mid-nineteenth century to the present. Lecture topics will proceed chronologically from the early roots of Modernism to the Global Dissemination of Styles in recent times, ending with an examination of current trends in urbanism and sustainable design.

**FORENSIC SCIENCE****FRSC 1001 - Intro to Fornsc Science Tech I, 1 Credit**

Level: Lower

Forensic Science 1001 is an introductory expository course designed for Forensic Science Technology majors to complete during their first semester of enrollment in the program. It is the first in a two-semester required sequence (along with FRSC 2001) for Forensic Science

## COURSE DESCRIPTIONS

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Technology majors. Students are introduced to the requirements and expectations for success within the Forensic Science Technology program as well as various technical disciplines and skills commonly brought to bear during a criminal investigation.

### **FRSC 2001 - Intro to Frnsic Science Tech II, 1 Credit**

Prerequisite(s): FRSC 1001 with C or better

Level: Lower

Forensic Science 2001 is the continuation of a required two-semester sequence for Forensic Science Technology majors. It is an introductory expository course designed for Forensic Science Technology majors to complete during their second semester of enrollment in the program. Students are introduced to further technical disciplines and skills commonly brought to bear during a criminal investigation as well as current topics relevant to the field of Forensic Science. Students are required to demonstrate written and oral presentation skills by completing a project in a topic relevant to the class material.

### **FRSC 3001 - Topics in Forensic Science I, 1 Credit**

Prerequisite(s): FRSC 2001 with C or better

Level: Lower

Topics in Forensic Science I is a one-credit course designed for Forensic Science Technology majors to be completed during their third semester of study in the academic program. This is the first in a two-semester required sequence of courses (along with FRSC 4001) for Forensic Science Technology majors. The focus of this course is to expand on topics covered during other curriculum coursework and to discuss the relevance of this coursework to forensic science. The format of the course is reading and discussion, with each student accepting responsibility for serving as a discussion leader at least once during the year. The discussion leaders' roles are to introduce a topic, provide background information about the topic, and encourage the class to offer comments and ask questions. Topics for discussion may be directly related to material discussed during other curriculum coursework or may originate from current media sources.

### **FRSC 4001 - Topics in Forensic Science II, 1 Credit**

Prerequisite(s): FRSC 3001 with C or better

Level: Lower

Topics in Forensic Science II is a one-credit course designed for Forensic Science Technology majors to be completed during their fourth semester of study in the academic program. This is the second in a two-semester required sequence of courses (along with FRSC 3001) for Forensic Science Technology majors. The focus of this course is to expand on topics discussed during other curriculum coursework including organic and inorganic chemistry, microbiology, genetics, mathematics, and physics. The format of the course is reading and discussion, with each student accepting responsibility for serving as a discussion leader at least once during the year. The discussion leaders' roles are to introduce a topic, provide background information about the topic, and encourage the class to offer comments and ask questions. Topics for discussion may be directly related to material discussed during other curriculum coursework or may originate from current media sources.

### **FRSC 7104 - Criminalistics I, 4 Credits**

Prerequisite(s): CHEM 4524 with C or better and CHEM 6614 with C or better

Level: Upper

This course is an exploration of the basic theory and practice of trace and transfer physical evidence analysis. Specific topical focus includes: crime scene investigation; evidence collection and handling; microscopic techniques; recovery and analysis of fingerprint evidence; recovery and analysis of hair, fiber, paint, soil, and glass evidence; firearms examinations; recovery and analysis of gunshot residue; recovery and analysis of impression and toolmark evidence; and recovery and analysis of questioned document evidence.

### **FRSC 8104 - Criminalistics II, 4 Credits**

Prerequisite(s): FRSC 7104 with C or better

Level: Upper

This course is a continuation of FRSC 7104 (Criminalistics I). The students' repertoire of forensic techniques is extended into the general areas of chemical and biological evidence as well as the introduction of special topics in forensic science. Specific topical focus includes recovery and analysis of arson and explosive evidence; recovery and analysis of toxicological evidence; chemistry and analysis of controlled substances; legal issues connected to

controlled substance analysis; recovery and analysis of blood and body fluid evidence; basic blood spatter evidence interpretation; principles and techniques of serology and forensic DNA analysis; and an introduction to forensic anthropology, entomology, odontology and computer and digital evidence. The course culminates in a detailed, practical case study.

**FRSC 8111 - Forensic Science Tech Capstone, 1 Credit**

Prerequisite(s): FRSC 7104 with C or better

Corequisite(s): FRSC 8113

Level: Upper

This course is intended for students typically in their eighth and final semester of the four-year Forensic Science Technology curriculum and is to be taken concurrently with FRSC8113. The course is designed to prepare the student to enter the workforce and/or continue their education at the graduate level. Students will complete a capstone project requiring the analysis of physical evidence in a simulated casework setting. Students will also apply fundamentals of proper forensic laboratory report writing by producing a professional quality laboratory report suitable for admission into a court of law that communicates their findings.

**FRSC 8113 - Forensic Scie Tech Prof Prepar, 3 Credits**

Prerequisite(s): FRSC 7104 with C or better

Corequisite(s): FRSC 8111

Level: Upper

This course is intended for students typically in their eighth and final semester of the four-year Forensic Science Technology curriculum and is to be taken concurrently with FRSC 8111. The course is designed to prepare the student to enter the workforce and/or continue their education at the graduate level. Students will learn the details of topics such as resume and cover letter preparation, interview success, the importance of ethical behavior in the field of Forensic Science, and theoretical and practical aspects of crime laboratory work including a look at standard operating procedures and quality assurance practices. A debate on current issues and legal decisions challenging the validity of scientific testing procedures commonly performed in Forensic Science will also be held. Students will also be required to prepare and deliver expert witness testimony in a mock courtroom setting.

**FRSC 8803 - Forensic Sci Tech Sr Resch Pjt, 3 Credits**

Prerequisite(s): FRSC 7104 with C or better

Level: Upper

This course is intended for students in the final year of the four-year Forensic Science Technology curriculum. Students are required to complete an approved research project in an area of special interest in Forensic Science Technology. The student will submit a plan for research acceptable to the Forensic Science Technology program director and to the department chair after learning basic research methodology. The instructor and student will confer regularly regarding the progress of study and research. The student will be required to prepare a formal scientific paper and will be required to give a formal presentation to the campus community upon completion of the research project. Students will be encouraged to present their findings at a national or regional Forensic Science conference.

**FRSC 8813 - Forensic Scien Tech Internship, 3 Credits**

Prerequisite(s): FRSC 7104 with C or better

Level: Upper

This course is intended for students in their final year of the four-year Forensic Science Technology curriculum. Students are required to complete a supervised internship at an approved off-campus site. Students will work under the supervision of a qualified Forensic Science Administrator, Forensic Scientist, or other qualified personnel to whom they are assigned. Students will also receive college faculty consultation. The internship is designed to enable students to obtain actual work experience in theoretical and application-based procedures previously studied. This internship consists of 120 hours, which can be completed on a full-time basis (40 hours/week for three weeks) or on a part-time basis over an extended period of time (e.g. 8 hours/week for 15 weeks). All students will be required to give a formal presentation to the campus community following completion of the internship.

**FRSC 8900 - Directed Study, 1 to 6 Credits**

Prerequisite(s): CHEM 6614 with C or better

Level: Upper

This course is designed to allow students to pursue advanced work in an area of special

## COURSE DESCRIPTIONS

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interest or obtain extended internship opportunities in Forensic Science Technology. A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor, to the Forensic Science Technology Program director, and to the department chair. The instructor and student will confer regularly regarding the progress of the study.

### FINANCIAL SERVICES MANAG

#### FSMA 4900 - Directed Study, 1 to 6 Credits

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

#### FSMA 5003 - Investment Planning, 3 Credits

Prerequisite(s): BUAD 4133 with D or better and BUAD 4203 with D or better

Level: Upper

This course teaches the student how to prudently plan investments to take maximum advantage of opportunities as they arise. Prudent planning includes the ability to relate the present changing economic environment to investment prices and determining if those prices are related to traditional fundamentals of value. The student will also be able to construct portfolios and analyze the social impact of investment choices. Tax implications of various choices will also be discussed.

#### FSMA 5103 - Tax Planning, 3 Credits

Prerequisite(s): ACCT 3453 with D or better

Level: Upper

This course covers tax-planning considerations for both individuals and businesses. The students will analyze current tax laws and the steps involved in managing one's tax liability by using IRS regulations as part of an overall investment strategy. A final project will be required. The students will be given a set of facts and an overall objective. They must then research the applicable tax laws, recommend a course of action, and defend that course of action with the supporting IRS regulations. An oral and written presentation of the student's project will be required.

#### FSMA 5900 - Directed Study, 0 to 6 Credits

Level: Upper

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

#### FSMA 6003 - Employee Benefit Planning, 3 Credits

Prerequisite(s):

Level: Upper

This course will enable the student to design an employee benefit plan that encompasses the client's stated goals and objectives while keeping the plan in compliance with federal regulations. A capstone project will be required. The capstone project will consist of a given set of facts, goals and objectives with which the student must design an employee benefits plan, keeping within the constraints assigned and using the knowledge acquired in the course.

#### FSMA 7023 - Estate Planning, 3 Credits

Prerequisite(s): BUAD 3043 with D or better or ( BUAD 7023 with D or better and BUAD 4193 with D or better and FSMA 5003 with D or better and FSMA 5103 with D or better )

Level: Upper

This course is designed to expose students to the estate planning process. It explores the many issues to consider when assisting people to enhance and maintain their financial welfare. Emphasis is not only on the arrangements for the disposition of property at death, but also on steps that can be taken to increase overall family wealth and security while still alive. Topics include, but are not limited to, wills, trusts, property ownership, future interests,

long term care planning, fraudulent conveyances, as well as gift and estate taxation.

**FSMA 7103 - Money & Banking, 3 Credits**

Prerequisite(s): ECON 1013 with D or better and ECON 2023 with D or better

Level: Upper

This course is an exploration of the role and importance of money in effective monetary policy as a solution for inflation and unemployment. The operation, function, and structure of the banking system and the functions of the central banking system will be the focus. The role of monetary theories, money management, and monetary policy will also be studied. The theoretical foundations of commercial and central banking will be discussed within the context of general economic activity.

**FSMA 7123 - Persnl Finan Planning Capstone, 3 Credits**

Prerequisite(s): BUAD 4203 with D or better and BUAD 4193 with D or better and BUAD 5033 with D or better \* and FSMA 7023 with D or better \* and FSMA 5003 with D or better \* and FSMA 5103 with D or better \* and FSMA 7103 with D or better \*

Corequisite(s):

Level: Upper

This course will engage the student in critical thinking and decision-making about personal financial management topics in the context of the financial planning process. Students can meet the objectives of this course by developing one or more comprehensive financial plans that are presented in written and oral formats. Plans may be based on prepared directed cases, prepared open-ended cases, or on actual client households. Students are exposed to cases involving a broad spectrum of financial planning issues rather than single-issue cases. Students will be required to complete two hypothetical directed cases, one written comprehensive financial plan, and an oral presentation of the comprehensive financial plan. This is the Capstone course in the financial planning curriculum.

**FSMA 8112 - Financial Planning Internship, 12 Credits**

Level: Upper

Students complete 15 weeks of supervised field work in a selected financial service provider setting. The student must be engaged in bona fide financial planning work in at least one of the six core areas of investment planning, tax planning, estate planning, retirement planning, employee benefit planning, or insurance/risk management. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of financial services and/or financial planning in an organization.

**GEOLOGY****GEOL 1133 - Introduction to Geology, 3 Credits**

Level: Lower

Course Attributes: Liberal Arts and Science

The course is an introduction to the science of geology. In particular, the main types of rocks are analyzed with an emphasis on genetic processes and in relationship to plate tectonics theory. This basic knowledge will provide a background to understand and study the main geological risks, such as volcanoes, earthquakes, floods and landslides. Specific examples from the Apennines mountain chain and Campanian plain will be examined to contextualize these topics in the Italian environment. In addition, a significant aim of this course is for students to gain a conscious relationship with the environment. The Campania region is an ideal place for experiential learning via site visits, with the opportunity for students to witness a wide range of geological features. The evaluation for the course will include mid term and final written exams, a presentation and graphical exercises.

**GEOL 1233 - Volcanology, 3 Credits**

Level: Lower

Course Attributes: Liberal Arts and Science

The course is an introduction to the main elements of geological sciences including stratigraphy laws, the main types of rocks, and an understanding of faults and folds. These elements will be used to understand Plate Tectonics theory. Using this theory, different kinds of volcanoes will be analyzed, examining different magmatic compositions, igneous and pyroclastic rocks and their geodynamic environments. The role of geologic and geomorphologic processes will be analyzed in reference to volcanic risk. This course will also study landslides in volcanic soils (the case of Sarno mounts) and groundwater flow in

## COURSE DESCRIPTIONS

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volcanic aquifers and exploitation of thermal waters (the case of Ischia).

### GLOBAL STUDIES

#### **GLST 1001 - Global Topics Seminar I, 1 Credit**

Level: Lower

Global Topics Seminar is an interdisciplinary course intended to help prepare students to live in, work in and make sense of a multicultural world. Functioning as an introduction to diverse customs, languages and cultures, this course serves as a vehicle for students to reflect on cultures and societies outside of the United States.

#### **GLST 2001 - Global Topics Seminar II, 1 Credit**

Prerequisite(s): GLST 1001 with D or better

Level: Lower

In continuation to Global Topics Seminar I, this course focuses on global challenges that we face in the 21st century and different approaches for managing those challenges. With each class, students will be encouraged to think how civically they can act to address these challenges.

### HISTORY

#### **HIST 1113 - Hist of West Civil Since 1648, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Western Civilization, Liberal Arts and Science

This course provides an introduction to the political, military, intellectual, cultural, technological, religious, and economic features of western civilization from the early modern period to the twenty-first century. It also considers the relationship between Europe and the United States, and between Europe and the wider world. Finally, the course discusses contemporary Europe.

#### **HIST 1123 - History of the Mafia, 3 Credits**

Level: Lower

Course Attributes: Liberal Arts and Science

The course examines the history of the Mafia from its origins to the present day. How the Mafia works and has succeeded as well as approaches, including those by civil society organizations, to combat the Mafia. Attention is paid to examples of Mafia enterprises, its past and present role in politics, and its evolution from a regional organization to one with an international reach. A research project, with both a paper and an oral presentation, is required.

#### **HIST 1143 - Surv of American History I, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - American History, Liberal Arts and Science

This course is an introductory survey of American history from the early Native Americans and European colonization through the Civil War and Reconstruction. Topics include native cultures, European heritage, the colonial experience, revolution and the new republic. Emphasis will be placed on the formation of the Constitution, reform movements and political compromises. Special attention will be paid to the common institutions in American society and their affects on different groups.

#### **HIST 1223 - Contemporary Italian History, 3 Credits**

Level: Lower

Course Attributes: Liberal Arts and Science

This course gives an overview of recent Italian history. Students will trace the history of Italy from the end of the Second World War to the current crisis facing Italy. Topics will include: the birth of the Republic, the clash between the Christian Democrats and the Communist Party in the 50s, the economic boom, terrorism in the 70s and of the opposite extremes"

#### **HIST 2003 - Survey of NY State History, 3 Credits**

Prerequisite(s): HIST 1143 with D or better or HIST 2153 with D or better

Level: Lower

Course Attributes: Liberal Arts and Science



Students will be introduced to the history of New York State, from the pre-colonial Iroquoian hegemony to modern New York. The focus will be on the social, political, cultural, and economic developments and events that made New York the Empire State. Special emphasis will be placed on the individuals who contributed to state growth in these areas. Students will complete a research paper/project.

**HIST 2153 - Surv of American History II, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - American History, Liberal Arts and Science

This course is an introductory survey of American History from the Civil War and Reconstruction to the present. Topics include western migration, the impact of industrialization and urbanization, the rise of organized labor and the rise of the United States as a world power. The course will cover aspects of the social, political, and economic life of the people of the United States, with a special focus on unity and diversity, during the 19th - 21st centuries.

**HIST 2900 - Directed Study, 1 to 4 Credits**

Level: Lower

This course allows students who have successfully completed a history course to continue study in that subject. A student may contract for one to four credit hours. However, directed study may be contracted by a student only with the approval of the directing instructor and the department chairperson.

**HIST 5133 - Africa and the West, 3 Credits**

Prerequisite(s): HIST 1113 with D or better

Level: Upper

Course Attributes: Gen Ed - Other World Civ, Liberal Arts and Science

This course will introduce students to the relationship between Western countries and Africa over the last five centuries and today. Particular attention will be paid to the political, economic, and cultural links established between Europe and Africa, including the imperialist occupation and exploitation of Africa by Europeans. Historical topics covered will include the slave trade; European exploration of Africa; the diaspora of Africans in the West, and of Europeans in Africa; racial attitudes; patterns of economic development and impoverishment; the political evolution of European colonial regimes in Africa; and the process of decolonization, including its political, economic, and social consequences. Contemporary topics covered will include political instability and poverty in Africa; the AIDS crisis; the legacy of colonialism and white settlement; and competing approaches to African development. Students will also be introduced to the research methods and analytical techniques used by historians and social scientists to interpret Africa's past, present, and future. All students will be required to complete an individually-negotiated final project.

**HIST 6133 - The World at War: 20th Century, 3 Credits**

Prerequisite(s): HIST 1113 with D or better or PLSC 1053 with D or better

Level: Upper

Course Attributes: Liberal Arts and Science

This class surveys global military history during the 20th century, with particular emphasis on World War I, World War II, and the Cold War. It examines the origins of major and minor conflicts; the political, social, and economic context of modern warfare; changes in strategy, tactics, logistics, intelligence, battlefield technology, and other salient features of warfare; the contributions of political leaders and major military commanders; and the effects of modern warfare on soldiers and civilians. This class will feature student presentations and a research paper.

**HEALTH TECHNOLOGY****HLTH 1003 - Found of Peer Health Education, 3 Credits**

Level: Lower

This course is designed to inspire, teach, and engage students in the arena of peer health education. Theoretical concepts and practical perspectives of peer education will be introduced, with a focus on health issues. Students will develop communication, assertiveness, facilitation, and presentation skills. They will also participate in experiential learning through designing and delivering their own peer health education program using the skills and training through class instruction.

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### **HLTH 1013 - Essentials of Exercise Physiol, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This is an internet-based course intended for both science and non-science majors covering the basic study of exercise physiology. Topics include the role of nutrition in energy-producing pathways and human growth and development; nutritional and common pharmacological aids used to support and enhance exercise and athletic performance; study of metabolic production of energy and its application in the human capacity for work; and study of select body systems and the principles of exercise training with resultant physiological adaptations that could be expected from such training. The course concludes with a study of the role of exercise in the maintenance of health and the prevention of disease.

### **HLTH 1313 - Nutrition, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is intended for both the science and non-science major. Coverage will include the fundamental biochemical aspects of the essential nutrients and their effects when consumed in less than recommended or excessive amounts. These nutritional facts will help answer some of the questions brought forward concerning the relationship between food and heart disease, weight control, preservatives, cancer, athletic performance, vegetarianism, pregnancy and lactation, just to name a few. Beyond these facts will be the understanding of the non-nutrient characteristics of food as related to culture, family and society. Most importantly, this course will present the tools necessary to properly evaluate the purchase and preparation of nutritious foods via personal assessment.

## **HEALTH & PHYSICAL EDUC**

### **HPED 1031 - Volleyball, 1 Credit**

Level: Lower

To develop the skills of passing, serving, spiking, and blocking.

### **HPED 1111 - Health and Wellness, 1 Credit**

Level: Lower

To provide students with a better understanding of the human body and concepts, attitudes and practices concerning Health and Wellness. This course focuses on all the dimensions of Wellness.

### **HPED 1121 - Basketball, 1 Credit**

Level: Lower

This course is designed to expose the student to the many basketball skills and types of playing.

### **HPED 1131 - Indoor Soccer, 1 Credit**

Level: Lower

To develop skills, knowledge, and proper fitness levels pertaining to soccer.

### **HPED 1151 - Ultimate Frisbee, 1 Credit**

Level: Lower

Ultimate Frisbee is an exciting and rapidly growing sport. Most people can find opportunities to play within their own communities. The purpose of this course is to cover all the rules and regulations of the game Ultimate Frisbee. The students will be given the opportunity to play and develop certain skills of the sport. This sport could be a lifelong activity that promotes a healthier lifestyle by obtaining certain cardiovascular benefits from participating in this sport.

### **HPED 1171 - Aerobics, 1 Credit**

Level: Lower

Aerobics to music where the student will learn sound lifetime habits of fitness.

### **HPED 1211 - Cross Country Skiing, 1 Credit**

Level: Lower

To develop the skills necessary to cross-country ski on a variety of terrains and appreciation for the outdoors.

### **HPED 1221 - Power Volleyball, 1 Credit**

Level: Lower

To develop the skills of passing, serving, spiking, and blocking.

**HPED 1251 - Women's Fitness, 1 Credit**

Level: Lower

High-impact aerobics to music where the student will learn sound lifetime habits of fitness.

**HPED 1341 - Softball, 1 Credit**

Level: Lower

To provide the students with the softball skills necessary to participate in the game recreationally.

**HPED 1603 - Prin of Org PE & Athletics, 3 Credits**

Level: Lower

A course to provide each student with a workable frame of reference concerning the principles, organization, and philosophical aspects of physical education and athletics.

**HPED 2141 - Tennis, 1 Credit**

Level: Lower

Learning various techniques in tennis as well as different strokes (forehand, backhand, volley). Knowing the rules of the game.

**HPED 2603 - Physical Fitness & Condition, 3 Credits**

Level: Lower

This course provides the student with a general frame of reference concerning physical fitness, health-related fitness and motor skill-related fitness, as it relates to individual needs and interest.

**HPED 2703 - Introduction to Recreation, 3 Credits**

Level: Lower

This course provides the student with an introduction to the history, theory, and philosophy of the recreation movement and its relation to individuals and groups in our changing society. Emphasis will be placed on orienting students to recreation leadership as a vocation within the structure of community recreation (public, private and commercial).

**HPED 2900 - Directed Study, 1 to 4 Credits**

Level: Lower

A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**HPED 3061 - Physical Fitness, 1 Credit**

Level: Lower

To learn the basic principles of conditioning. The student will be provided an individualized fitness program designed to improve muscular strength and endurance, cardio-vascular wellness, flexibility, and body composition.

**HPED 4103 - Personal Health, 3 Credits**

Level: Lower

This course provides students the opportunity to develop sound concepts in health and health-related areas in order to better understand the environment in which they live. Strong emphasis will be placed on current health issues in the area of human sexuality, mental and emotional health, drug and substance abuse, and the development of sound health practices for the individual in today's society.

**HUMANITIES****HUMN 2114 - Culture of Italy in Context, 4 Credits**

Prerequisite(s): COMP 1503 with C or better and ( LITR 2033 with D or better or LITR 2343 with D or better or LITR 2503 with D or better or LITR 2603 with D or better or LITR 2703 with D or better or LITR 2813 with D or better or LITR 2900 with D or better or LITR 2903 with D or better or LITR 2913 with D or better or LITR 3233 with D or better or LITR 4333 with D or better or LITR 7003 with D or better )

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

## COURSE DESCRIPTIONS

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While there are many definitions of culture"

### HUMAN SERVICES

#### **HUSR 1074 - Practicum in Human Services, 4 Credits**

Prerequisite(s):

Level: Lower

This senior project course is designed to provide students with supervised work experience in human services agencies. In addition, students participate in a weekly class that combines the principle of small group dynamics with the acquired skills, knowledge and experience that students have obtained from their field experience. Students produce a final project and a portfolio to document learning. Students should consult the Practicum Pre-requisites listed in the Human Services program description section in the college catalog.

#### **HUSR 1303 - Intro Alcoholism/Substnc Abuse, 3 Credits**

Level: Lower

This course is designed to increase knowledge of alcoholism and alcohol abuse. The disease concept of alcoholism will be explained, as well as the physiological, psychological, and sociological impact of alcohol on the individual. Consequences of alcohol abuse on the family and society will be examined.

#### **HUSR 1313 - Alcoholism/Substnc Abuse Cnsng, 3 Credits**

Prerequisite(s): HUSR 1303 with D or better

Level: Lower

This course is intended to provide students with the basic skills necessary to counsel individuals and families with substance abuse problems. Through lecture and assigned readings, students will be educated on the different models of treatment that are currently being followed, as well as specific techniques for effective intervention at all levels of care. Basic tools for assessment, diagnosis, treatment planning and behavior change strategies will be discussed. Additionally, students will focus on actual skills acquisition through direct practice and feedback via role-plays, videotaping and group discussion. The integration of specific knowledge and skills through practice is the overall goal of this course.

#### **HUSR 1323 - Spcl Pblm Alchl/Sub Abs Trtmt, 3 Credits**

Prerequisite(s): HUSR 1303 with D or better

Level: Lower

This course is designed for students specializing in the field of chemical dependency treatment, and will focus on the special issues, problems and treatment dilemmas in the field of alcoholism and substance abuse counseling. A significant portion of class time will be devoted to ethical decision making and clarifying healthy professional boundaries. Through lecture, assigned readings, group presentations and class discussions, students will develop an increased awareness and understanding of the multiplicity of problems potentially coexisting with the presenting substance problem. These include, but are not limited to, a history of family violence, neglect, incest, other substance abuse/dependence, psychiatric disorders, and AIDS. Students will also develop an awareness of the special issues faced by particular subgroups, and will learn specific intervention strategies to be utilized in the treatment of these groups, which include, but are not limited to, adolescents, women, the elderly, gays and lesbians, and the non-white population.

#### **HUSR 2083 - Introduction to Human Services, 3 Credits**

Level: Lower

This course is designed to give students a working knowledge of the human services profession: its goals and objectives, structure and organization, legal and ethical standards and client populations. An emphasis will be placed on the generalist approach to human services.

#### **HUSR 2093 - Domestic Violence, 3 Credits**

Level: Lower

In this course students will learn and apply the basic concepts, principles, and issues involved in domestic violence. Special attention will be given to biological, psychological, and sociological perspectives. The course work will focus on causes, identifications, types, reporting, consequences, treatments, laws, legal remedies, interim safety, and prevention of child abuse, spousal abuse, and elder abuse. The complex relationship between external

factors, i.e. alcohol and other substances, and violence at home will be examined.

**HUSR 2900 - Directed Study, 1 to 4 Credits**

Level: Lower

A course that allows students who have successfully completed a previous course in Human Services to continue study in that subject. A student may contract for one to four credit hours. However, directed study may be contracted by a student only with the approval of the directing instructor and the department chairperson.

**HUSR 4033 - Issues in Human Services, 3 Credits**

Level: Lower

Major issues related to the field of human services are discussed in this course. Emphasis is placed on the ethical standards within the field of Human Services. Students are expected to develop the necessary skills, values and knowledge to enhance their ability to gain employment and advance within the human service profession.

**HUSR 4900 - Directed Study, 1 to 6 Credits**

Level: Lower

A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**HUSR 5003 - Community Organizations, 3 Credits**

Prerequisite(s): HUSR 2083 with D or better and SOCI 1163 with D or better

Level: Upper

This course is an upper level human services methods course focusing on major theories and methods of community organizing with applications in urban, suburban, transitional and rural communities. It provides a framework for assessment, and intervention with regard to the structures and processes of neighborhoods, communities, and organizations as they influence and are influenced by the many stakeholders in the human services arena. It explores the potential for the use of technology in organizing communities.

**HUSR 5103 - Social Policy & Human Services, 3 Credits**

Prerequisite(s): HUSR 4033 with D or better

Level: Upper

This course examines the evolution of American social problems and the response of the social welfare policy systems and programs at the national, state, regional and local levels. A basic framework for comparison with international social welfare systems will also be provided. The course will focus on the impact of social policy on the delivery of human services and will emphasize individual communication skills, research and analysis of social welfare policy. Students will engage in debates, letter writing, and other class presentations. Applications in social welfare advocacy at all levels will be explored.

**HUSR 5203 - Grants Contracts Organ Adv HS, 3 Credits**

Level: Upper

This course will provide students with the tools needed to be successful with proposal writing, program and strategic planning, fund raising and institutional advancement. Specific areas to be addressed will include how to identify appropriate funding sources, how to market and organize charitable fundraising events and campaigns, how to complete applications for funding assistance, and how to respond to requests for proposals from public and private resources.

**HUSR 5213 - Case Management Systems, 3 Credits**

Prerequisite(s): HUSR 2083 with D or better and PSYC 1063 with D or better

Level: Upper

This course in case management will familiarize students with various approaches used by human services professionals to meet the service needs of the client. The use of case management with children and families, elderly, chronically mentally ill, developmental and physically disabled, and those in health care settings will be investigated. Approaches used in crisis management will be compared with those used in chronic conditions. Skills in case management will be demonstrated including networking, goal setting, recording, case monitoring, advocacy, and outcome evaluation. Use of automated data systems and electronic records in case management will be explored.

**HUSR 5314 - Human Serv Field Practic & Sem, 14 Credits**

## COURSE DESCRIPTIONS

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Prerequisite(s): ( HUSR 5003 with C+ or better and HUSR 5103 with C+ or better and HUSR 5203 with C+ or better ) or ( HUSR 5003 with C+ or better and HUSR 5103 with C+ or better and HUSR 5213 with C+ or better ) or ( HUSR 5003 with C+ or better and HUSR 5203 with C+ or better and HUSR 5213 with C+ or better ) or ( HUSR 5103 with C+ or better and HUSR 5203 with C+ or better and HUSR 5213 with C+ or better )

Level: Upper

This seminar course is taken concurrently with a structured, supervised work experience in a human service agency. Students must successfully complete a minimum of 400 clock hours of work in human services management at an approved human services agency. In addition, students participate in this weekly seminar that synthesizes theoretical knowledge and didactic learning with the acquired skills, knowledge, and experience that the students have obtained through their field experience. The internship may be at distant locations and taken full-time for a semester. Faculty supervision and communication may be through various technologies that students must utilize. All enrolled students meet together in seminar one afternoon per week for three hours. Concurrently students are in a one-semester block placement of 40 hours per week for the academic semester. A complete list of practicum requirements are stated in Human Services management program description in the college catalog.

### ITALIAN

#### ITAL 1303 - Italian I, 3 Credits

Level: Lower

Course Attributes: Gen Ed - Foreign Languages, Liberal Arts and Science

This course focuses on developing the student's ability to speak, to write, and to read Italian. Additional emphasis is given to learning about Italian culture. Instruction centers on oral communication, written communication, reading for comprehension, and cultural awareness. Writing and speaking are emphasized in assignments related to readings, class discussions, and lectures.

#### ITAL 2303 - Italian II, 3 Credits

Prerequisite(s): ITAL 1303 with D or better

Level: Lower

Course Attributes: Gen Ed - Foreign Languages, Liberal Arts and Science

This course focuses on developing the student's ability to understand Italian sentences and frequently used expressions that relate to personal and family information, shopping, local geography, and employment. Oral communication is emphasized in simple tasks that require a direct exchange of information on familiar and routine matters. Writing is emphasized in assignments related to readings, class discussions, and lectures. The course focuses on an intermediate level of reading, speaking, and writing in Italian.

#### ITAL 3303 - Italian III, 3 Credits

Prerequisite(s): ITAL 2303 with D or better

Level: Lower

This course will focus on developing the student's ability to understand Italian sentences and frequently used expressions that relate to personal and family information, shopping, local geography, and employment. Oral communication will be emphasized in simple tasks that require a direct exchange of information on familiar and routine matters or conversation about personal interests or employment. Writing will be emphasized in assignments related to readings, class discussions, and lectures. The course will focus on an intermediate level of reading, speaking, and writing in Italian.

#### ITAL 4303 - Italian IV, 3 Credits

Prerequisite(s): ITAL 3303 with D or better

Level: Lower

This intermediate course will focus on developing the student's ability to understand the main ideas found in complex texts in Italian on both concrete and abstract topics; this focus will include technical discussions in the student's field of specialization. The course will also focus on the student's ability to speak with fluency and spontaneity. The students will be able to engage in regular interaction with native speakers and produce clear, detailed text on a wide range of subjects.

**ITAL 5113 - Contemporary Italian Literatur, 3 Credits**

Prerequisite(s): ITAL 4303 with D or better

Level: Upper

Students will study Italian literature of the 20th century. Students will critically analyze internationally renowned literary texts in the Italian language. Authors include Luigi Pirandello, Filippo Tommaso Marinetti, Gabriele D'Annunzio, Primo Levi, Salvatore Quasimodo, Giuseppe Ungaretti, Eugenio Montale, Pier Paolo Pasolini, Umberto Eco, and others. Students will read from these author's works and engage in a historical, literary, and rhetorical analysis of them while determining techniques of composition. Students will be expected to actively participate and contribute to class discussion. The course will be conducted in Italian; participants will do all written and oral work in Italian. A research paper will be required.

**ITAL 5223 - Modern Italian Literature, 3 Credits**

Prerequisite(s): ITAL 4303 with D or better

Level: Upper

Students will study Italian literature from the 17th to the 19th century. Students will critically analyze internationally renowned literary texts in the Italian language. Authors include Galileo Galilei, Carlo Goldoni, Giuseppe Parini, Ugo Foscolo, Giacomo Leopardi, Alessandro Manzoni, Giovanni Verga, and others. Students will read from these author's works and engage in a historical, literary, and rhetorical analysis of them while determining techniques of composition. Students will be expected to actively participate and contribute to class discussion. The course will be conducted in Italian; participants will do all written and oral work in Italian. A research paper will be required.

**ITAL 5303 - Italian V, 3 Credits**

Prerequisite(s): ITAL 4303 with D or better

Level: Upper

This advanced course will focus on developing the student's ability to understand a wide range of demanding, longer texts and recognize implicit meaning; the students will be able to express themselves fluently and spontaneously and use language flexibly and effectively for social, academic, and professional purposes. The students will be expected to produce clear and detailed text on complex subjects, and they will be expected to show controlled use of organizational patterns, connectors, and cohesive devices.

**ITAL 5333 - Medieval Italian Literature I, 3 Credits**

Prerequisite(s): ITAL 4303 with D or better

Level: Upper

Dante Alighieri is the most important Italian poet, the father of the Italian language, and the principal figure of Medieval Literature in Europe. This course will examine Dante Alighieri's *La Divina Commedia* (The Divine Comedy) and some of his minor works such as *La Vita Nuova* (The New Life) and *Il Convivio* (The Banquet). Attention will be given to the *Epistola a Cangrande della Scala* (Letter to Cangrande della Scala) which is believed to be Alighieri's letter to his foremost patron. The course will allow students to examine these internationally renowned literary texts in their original language. Students will read from these author's works and engage in a historical, literary, and rhetorical analysis of them while determining techniques of composition. Students will be expected to actively participate and contribute to class discussion. The course will be conducted in Italian; participants will do all written and oral work in Italian. A research paper will be required.

**ITAL 5443 - Medieval Italian Literature II, 3 Credits**

Prerequisite(s): ITAL 4303 with D or better

Level: Upper

Students will study Italian literature from the 14th to the 16th Century. Students will read and critically analyze internationally renowned literary texts in their original language. Authors include Francesco Petrarca (Petrarch), Giovanni Boccaccio, Ludovico Ariosto, Torquato Tasso, Niccolò Machiavelli, and others. Students will read from these author's works and engage in historical, literary, and rhetorical analysis of texts while determining techniques of composition. Students will also learn about the lives and historical context of the authors; they will critically determine how the author's lives influenced the masterpieces that they created. Students will be expected to actively participate and contribute to class discussion. The course will be conducted in Italian; participants will do all written and oral work in Italian. A research paper will be required.

## COURSE DESCRIPTIONS

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### **ITAL 6303 - Italian VI, 3 Credits**

Prerequisite(s): ITAL 5303 with D or better

Level: Upper

This advanced course will enable students to read and write Italian fluently. Students will work with a wide range of spoken and written sources. Students will concentrate on the analysis of texts for argument structure, and they will be expected to summarize and coherently present arguments in oral presentations. Student work will require an advanced level of spontaneity when writing and speaking; students will be expected to precisely differentiate nuances of meaning in complex situations.

## **JAPANESE**

### **JAPN 1203 - Japanese I, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Foreign Languages, Liberal Arts and Science

This course is an introduction to the spoken and written Japanese language and focuses on developing the student's ability to speak, to write, and to read Japanese. Additional emphasis is given to learning about Japanese culture. Instruction centers on oral communication, written communication, reading for comprehension, and cultural awareness. Writing and speaking are emphasized in assignments related to readings, class discussions, and lectures. This course also provides students with the ability to communicate in Japanese in their pursuit of travel, business, academic endeavors, and personal pleasure.

### **JAPN 2203 - Japanese II, 3 Credits**

Prerequisite(s): JAPN 1203 with C or better

Level: Lower

Course Attributes: Gen Ed - Foreign Languages, Liberal Arts and Science

This course is designed as a continuation of JAPN 1203; this course further develops the student's ability to speak, to write, and to read Japanese. Additional emphasis is given to learning about Japanese culture. Instruction centers on oral communication, written communication, reading for comprehension, and cultural awareness. Writing and speaking are emphasized in assignments related to readings, class discussions, and lectures. This course also provides students with the ability to communicate in Japanese in their pursuit of travel, business, academic endeavors, and personal pleasure.

## **LANGUAGE**

### **LANG 3900 - Directed Study, 1 to 4 Credits**

Level: Lower

Directed Study may be arranged in the academic areas of art, drama, English, foreign language, music, philosophy, or speech. The student may contract for one-to-four credit hours of independent study through an arrangement with an instructor and the Department Chair. To be substituted for the listed Humanities requirements for the Associate Degree, Directed Study courses must be co-designed by the Department Chair. The instructor and student shall confer regularly regarding the progress of the study.

### **LANG 4900 - Directed Study, 1 to 4 Credits**

Level: Lower

The student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student must submit a plan acceptable to the instructor and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

## **LITERATURE**

### **LITR 2033 - The Short Story, 3 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Lower



Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

The Short Story introduces the student to the study and appreciation of the short story as an art form. Reading selections will include stories by such masters as Joyce, Lawrence, Faulkner, Hemingway, and O'Connor, as well as recent works by Olson, Paley, and Barthelme. Writing is continued in assignments related to readings, class discussions, and lectures.

**LITR 2343 - Children's Literature, 3 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

Children's Literature covers a broad range of literature for children from preschool to age twelve, as they encounter it through the home, the library, and the school. Picture books, the classics, folk and fairy tales, novels, and plays for children are presented in a critical context. Writing is continued in assignments related to readings, class discussions, and lectures.

**LITR 2503 - Identity and Literature, 3 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

Using both classic and contemporary literature, this course will explore how gender, race, class, and the influence of family and relationships affect how we see ourselves and how we are seen by others. The course will introduce the terms of literary study and analysis and include reading, discussion, papers, exams, and presentations. Writing is continued in assignments related to readings, class discussions, and lectures.

**LITR 2603 - Introduction to Literature, 3 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

This course focuses on literature, thought, and language. Writing is continued in assignments related to readings, class discussions, and lectures. Selections include novels, short stories, poems, and plays.

**LITR 2703 - Sci Fi in the 20th Century, 3 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

Major representative works of science fiction are read and discussed. Works selected contain the major themes present in science fiction in the 20th century. Readings, class discussion, and lectures are the basis for oral reports and written assignments which continue training in composition and encourage a broadening of interest in science and technology. Writing is continued in assignments related to readings, class discussions, and lectures.

**LITR 2813 - Introduction to Film, 3 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

This course focuses on film, thought, and language through the viewing and analysis of representative fiction films. Writing is continued in assignments related to film viewing, class discussions, and lectures. From readings and lectures, the student will become acquainted with basic technical terms and film theory, thus facilitating analysis of the more complex aspects of film history and production. Permission of the instructor may supersede prerequisite. Writing is continued in assignments related to readings, class discussions, and lectures.

**LITR 2900 - Directed Study, 1 to 4 Credits**

Level: Lower

Course Attributes: Gen Ed - Humanities

The student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student must submit a plan acceptable to the instructor, and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

## COURSE DESCRIPTIONS

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### **LITR 2903 - Images of Women in Fiction, 3 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

Images of Women in Fiction is a reading and discussion course of significant representations of women in American and British fiction with emphasis on works that present the female in a variety of roles. Writing is continued in assignments and oral reports related to readings, class discussions, and lectures.

### **LITR 2913 - Introduction to Poetry, 3 Credits**

Prerequisite(s): COMP 1503 with C or better

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

This course focuses on a survey of the principles of poetry, the literary traditions of poetry, and the critical terminology to understand, to define, and to analyze poetry. Special attention is given to poetry written during the twentieth century. Classroom exercises and discussions emphasize the importance of close literary analysis; writing skills introduced in freshman composition and introduction to literature are reinforced.

### **LITR 3133 - Creative Writing:Travel & Expr, 3 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - The Arts, Gen Ed - Humanities, Liberal Arts and Science

This course will have students write creative non-fiction, focusing on the experience of travel. Student will read and be exposed to different works of non-fiction (travel writing and instructional, how-to writing), and published fiction (poetry, stories, and novels) revolving around travel. Class readings will also expose students to various writing styles and provide examples of the successes and strategies of other writers. Class time will be spent discussing the writer's craft and the assigned readings, and critiquing student writing in a workshop setting.

### **LITR 3233 - Survey of American Lit I, 3 Credits**

Prerequisite(s): COMP 1503 with D or better and LITR 2603 with D or better

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

Survey of American Literature I is the first of two courses surveying American Literature from the time of the Puritans to the present; it stresses the development of the American voice in literature through the critical study of such authors as Edwards, Franklin, Poe, Whitman, Emerson, Thoreau, Hawthorne, and Melville. Writing is continued in assignments related to readings, class discussions, and lectures.

### **LITR 3333 - Survey of British Literature I, 3 Credits**

Prerequisite(s): COMP 1503 with D or better and LITR 2603 with D or better

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

Survey of British Literature I is the first of two courses surveying British literature from the Middle Ages to the present; this course examines literature in the Middle Ages, the Early Modern Period, and the Restoration and eighteenth century. Emphasis is placed on the critical study of works such as Beowulf and authors such as Malory, Chaucer, Julian of Norwich, Spenser, Marlowe, Shakespeare, Milton, Dryden, Defoe, Swift, Pope, Johnson, and Boswell. Writing is emphasized in assignments related to readings, class discussions, and lectures.

### **LITR 4333 - Survey of American Lit II, 3 Credits**

Prerequisite(s): COMP 1503 with D or better and LITR 2603 with D or better

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

This course is a continuation of Survey of American Literature I with special attention to the works of Twain, Howells, Dickinson, James, Crane, Dreiser, Robinson, Frost, O'Neill, Eliot, Hemingway, Faulkner, Baldwin, and Updike. Writing is continued in assignments related to readings, class discussions, and lectures.

### **LITR 4900 - Directed Study, 1 to 4 Credits**

Level: Lower

A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**LITR 5133 - Special Topics in Literature, 3 Credits**

Prerequisite(s): COMP 1503 with C or better and ( LITR 2603 with C or better or LITR 2033 with C or better or LITR 2343 with C or better or LITR 2503 with C or better or LITR 2603 with C or better or LITR 2703 with C or better or LITR 2813 with C or better or LITR 2900 with C or better or LITR 2903 with C or better or LITR 2913 with C or better or LITR 3233 with C or better or LITR 4333 with C or better or LITR 7003 with C or better )

Level: Upper

Course Attributes: Liberal Arts and Science

Students will study selected literature of the past five centuries through the lens of a particular special topic, such as the African-American experience, or Life During Wartime, or Global Colonization, or the Women's Rights Movement, or Political Movements Left and Right, or any topic of special interest to the instructor and relevance to students. Reading from selected literary works, students will apply historical, literary, and rhetorical analyses to determine key elements of composition, argument, historical setting, sociological context, and cultural interpretation. Students will be expected to actively participate and contribute to class discussion. A research paper will be required.

**LITR 5900 - Directed Study, 1 to 4 Credits**

Prerequisite(s): COMP 1503 with D or better and ( LITR 2603 with D or better or LITR 2033 with D or better or LITR 2343 with D or better or LITR 2503 with D or better or LITR 2603 with D or better or LITR 2703 with D or better or LITR 2813 with D or better or LITR 2900 with D or better or LITR 2903 with D or better or LITR 2913 with D or better or LITR 3233 with D or better or LITR 4333 with D or better or LITR 7003 with D or better )

Level: Upper

Course Attributes: Liberal Arts and Science

The student may contract for one to four credit hours of independent study through an agreement with the instructor. The student must submit a plan acceptable for the instructor and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

**LITR 7003 - Literature and Nature, 3 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Upper

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

This course explores the relationship between humans and the natural world expressed in the literary form of nature writing. The thematic movement from discovery and description to environment, ecology, ecocriticism, and sustainability will be emphasized. Readings will be concentrated in American Literature, but works from other countries and cultures will be included. A variety of literary genres, including poems, journals, nonfiction essays, short stories, travel narratives, and excerpts from novels and nonfiction books will be examined. The purpose of this course is to introduce students to the canon of nature writing and to track this literary movement into emerging texts that examine the political, environmental, and technological themes of ecology and sustainability in contemporary culture. Students will be required to write a substantial research paper that analyzes an issue directly related to their major, and they will present their research at the end of the semester. Short writing exercises and exams will also be required. Class sessions will center on student participation and debate, and discussions and writing strategies will employ principles of sound reasoning, critical thinking, and Information Literacy skills.

**MATHEMATICS****MATH 1004 - Mathematical Concepts\*, 4 Credits**

Level: Lower-Developmental/Remedial Course

Course Attributes: Remedial

This course will introduce the students to the following topics: order of operations, operations on real numbers, simplifying algebraic expressions, integer exponents, solving linear

## COURSE DESCRIPTIONS

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equations in one variable, graphing linear equations in two variables, and applications such as geometry and modeling. Emphasis is placed on reviewing basic arithmetic skills and elementary algebra topics. Development of arithmetic skills throughout the semester is essential, therefore students will not be allowed to use calculators. Students will work on the development of thinking skills through creative problem solving, writing to explain methods and solutions to problems, and collaborative learning. This is a remedial/developmental course; it will not satisfy any graduation requirements. A grade of C or better is required to register for any subsequent math course.

### **MATH 1014 - Algebra Concepts, 4 Credits**

Prerequisite(s): MATH 1004 with C\* or better

Level: Lower

Course Attributes: Liberal Arts and Science

This course is intended for students who need more preparation to be successful in College Algebra or other courses of that level. Topics covered include: review of first degree equations, systems of equations and inequalities, graphing, polynomials, factoring, radicals and rational exponents, quadratic equations, rational expressions, relations and functions and an introduction to triangle trigonometry. This course prepares students to enter Math 1033 - College Algebra, Math 2124 - Statistical Methods and Analysis, Math 1423 - Explorations in Geometry, Math 1323 - Quantitative Reasoning and Math 2163 - Discrete Mathematics. A grade of C or better is required in Math 1014 to register for these courses. THIS COURSE DOES NOT FULFILL THE GEN-ED MATH REQUIREMENT.

### **MATH 1033 - College Algebra, 3 Credits**

Prerequisite(s): MATH 1014 with C or better

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This course includes topics such as polynomials, radicals, exponents, coordinate geometry, rational expressions and equations, and solutions to linear and quadratic equations. Students are introduced to the concept of functions and their graphs. Additional topics may include conic sections, matrices, variation, and nonlinear inequalities. Emphasis will be placed on problem solving. A graphing calculator is required. Students cannot receive credit for MATH 1033 if they have credit for MATH 1054. Students cannot receive credit for MATH 1033 if they have credit for MATH 1063, MATH 1084, or any course for which MATH 1063 or MATH 1084 are prerequisites. A grade of C or better is required to take Math 2043, College Trigonometry.

### **MATH 1034 - College Algebra of Functions, 4 Credits**

Prerequisite(s): MATH 1014 with C or better

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This course includes topics such as polynomials, radicals, exponents, coordinate geometry, rational expressions and equations, and solutions to linear and quadratic equations. Students are introduced to the concept of functions and their graphs. Additional topics may include conic sections, matrices, variation, and nonlinear inequalities. Emphasis will be placed on problem solving. A graphing calculator is required. The course is designed to give students additional time above that allotted in MATH 1033 working on mastery of concepts and skills in the student learning outcomes. Students cannot receive credit for MATH 1034 if they have credit for MATH 1033 or for MATH 1054. Students cannot receive credit for MATH 1034 if they have credit for MATH 1063, MATH 1084, or any course for which MATH 1063 or MATH 1084 are prerequisites. A grade of C or better is required to take MATH 2043, College Trigonometry.

### **MATH 1054 - Precalculus, 4 Credits**

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This course is designed primarily for the student who needs a foundation in algebra and trigonometry for the study of calculus. The concept of function and graphical representation of functions is stressed. Topics covered include: real numbers; algebra of real numbers including equations and inequalities; functions and their graphs including polynomial, rational expressions, logarithmic and exponential, trigonometric; algebra of the trigonometric functions including identities, equations, polar coordinates, complex numbers, systems of

equations. Prerequisite: NYS 80 HS Average Math A and B (or Course 1,2,3), plus a 4th year Math, or equivalent.

**MATH 1063 - Technical Calculus I, 3 Credits**

Prerequisite(s): ( MATH 1033 with C or better and MATH 2043 with D or better ) or ( MATH 1034 with C or better and MATH 2043 with D or better ) or MATH 1054 with D or better  
Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This course includes a review of functions, an introduction to the concept of limits, and a study of the techniques of differentiation and integration of algebraic functions with applications to the various technologies. A graphing calculator is required. Credit for MATH 1063, Technical Calculus I will not be allowed if student receives credit for MATH 1084, Calculus I.

**MATH 1083 - Business Calculus, 3 Credits**

Prerequisite(s): MATH 1033 with C or better or MATH 1034 with C or better

Level: Lower

Course Attributes: Liberal Arts and Science

A survey of differential calculus and its application to business, including management, finance and economics. Major topics include limits, derivatives, exponential and logarithmic functions and limits, and multivariable functions. Applications include marginals, maxima/minima, growth and decay, linear models. Credit for MATH 1083 will not be allowed if student has received credit for MATH 1063.

**MATH 1084 - Calculus I, 4 Credits**

Prerequisite(s): MATH 2043 with D or better or MATH 1054 with D or better

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

Designed for the student intending to continue his/her education in mathematics, science or engineering. The course will include a review of functions, an introduction to the concept of limits, and a study of the derivatives and integrals of algebraic and transcendental functions and their applications. A graphing calculator is required. Students cannot receive credit for both MATH 1063 and MATH 1084.

**MATH 1113 - Statistical Concepts, 3 Credits**

Prerequisite(s): MATH 1004 with C\* or better

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This is a 3 credit, one-semester course which provides an introduction to and understanding of the basic concepts of statistics. Actual computation will be minimal; computers will be used whenever calculations are necessary. Emphasis will be placed on the meaning of statistical results. Content will include sampling, experiments, measurement, organizing data, and statistical indices. Optional topics include probability, time trends, survey design and basic inference concepts.

**MATH 1123 - Statistics I, 3 Credits**

Prerequisite(s): MATH 1003 with C or better or MATH 1004 with C\* or better or MATH 1024 with C or better

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This course is the first of a two semester sequence in statistics. It covers mainly descriptive techniques such as data collection, organization techniques, measures of center, spread, and position. Other topics covered include: probability, probability distributions, normal and binomial distributions, correlation and regression. Requires a C or better in 1003 or 1004 or 1024 or an appropriate placement score.

**MATH 1143 - Liberal Arts Math I, 3 Credits**

Prerequisite(s): MATH 1004 with C\* or better

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This is a one semester course whose basic objective is to develop an interest and appreciation for Mathematics in students with little background in the subject. Included in the course are topics from the following areas: Problem Solving, Inductive Reasoning, Logic, Sets, Probability, Statistics, Consumer Math, and Geometry. It may also include topics from the following areas: History of Math, Number Systems, Metric, Algebra, Linear Programming,

## COURSE DESCRIPTIONS

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Finite Math, Matrices, Computer Applications.

### **MATH 1323 - Quantitative Reasoning, 3 Credits**

Prerequisite(s): MATH 2003 with C or better or MATH 1014 with C or better or MATH 1143 with C or better

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This course is designed for curricula where quantitative reasoning is required. The course content includes critical thinking skills, arithmetic and algebra concepts, statistical concepts, financial concepts, as well as numerical systems and applications. A graphing calculator is required. This is an entry level course and requires three years of high school math equivalent to NYS Course 1, 2, and 3; or Math A and B.

### **MATH 1423 - Explorations in Geometry, 3 Credits**

Prerequisite(s): MATH 2003 with C or better or MATH 1014 with C or better

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

The content of this course will apply geometrical truths in a variety of contexts, including knots, tessellations and graphical symmetry. In addition, it will cover some principles of Gestalt perceptual properties, the exploration and creation of models of geometric art from other cultures, and any additional material deemed suitable by the instructor. The material will involve experimentation by the student in a geometric forum to discover or verify properties of 2- and 3-dimensional objects and patterns. The software AutoCAD or a similar program for drawing on a computer as well as 2- and 3- dimensional modeling tools will be used extensively to enhance spatial intelligence skills and awareness of properties. Students will learn to analyze designs by identifying their geometric component parts and create designs by combining geometric shapes. They will identify the rules used in creating the design and will create new designs by varying some of those rules.

### **MATH 2043 - College Trigonometry, 3 Credits**

Prerequisite(s): MATH 1033 with C or better or MATH 1034 with C or better

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This course is designed for the college student who has demonstrated mastery of algebra skills and techniques. Topics include trigonometric functions and their properties with the study of identities, formulas, equations, and graphs. Also included are the solution of right and oblique triangles using the law of sines and cosines. In addition, time is spent exploring logarithmic and exponential functions. Emphasis is placed on contextual applications and problem solving. A graphing calculator is required. Credit cannot be received for both MATH 2043 and MATH 1054. Students cannot receive credit for MATH 2043 if they have credit for MATH 1063, MATH 1084, or any course for which MATH 1063 or MATH 1084 are prerequisites.

### **MATH 2074 - Technical Calculus II, 4 Credits**

Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

A continuation of MATH 1063 with further study in differentiation and integration of both the algebraic and transcendental functions. Applications will be included in each topic. An introduction to Matrix Algebra may be included. Graphing Calculator required. Student cannot receive credit for MATH 2074 if they have received credit for MATH 1084.

### **MATH 2094 - Calculus II, 4 Credits**

Prerequisite(s): MATH 1084 with D or better or MATH 1063 with D or better

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

A continuation of MATH 1084 with a concentrated study of integration techniques along with applications. Applications include but are not limited to areas, volumes, arc length, and work problems to name a few. The course involves the methods of integration and applications as they apply to both the algebraic and transcendental functions. Infinite Series will be included. Graphing Calculator required. Student cannot receive credit for both MATH 2094 and MATH 2074.

**MATH 2124 - Statistical Methods & Analysis, 4 Credits**

Prerequisite(s): MATH 1033 with C or better or MATH 1034 with C or better

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This is a one-semester (non-calculus based) course which covers descriptive as well as inferential statistics. Included are topics on collecting, organizing, and summarizing data. Other topics include correlation and regression, probability, normal and binomial probability distributions, normal approximation to the binomial, central limit theorem, confidence intervals, hypothesis testing, and nonparametric statistics.

**MATH 2133 - Statistics II, 3 Credits**

Prerequisite(s): MATH 1123 with C or better

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

A continuation of MATH 1123 emphasizing probability distributions with predictive and inferential aspects of statistics: the normal distribution with applications, central limit theorem, hypothesis testing and estimation as applied to the mean, standard deviation, and proportions. Other topics include normal approximation to binomial, Chi-Square applications, linear regression, correlation, and nonparametric statistics. Use of calculators for analysis and computer statistical packages are utilized.

**MATH 2163 - Discrete Mathematics, 3 Credits**

Prerequisite(s): MATH 1033 with C or better or MATH 1034 with C or better

Level: Lower

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This course is designed for Information Technology and Mathematics and Science students. The course will introduce and discuss the following topics: functions, relations, sets, logic, counting methods, methods of proof, network graphs and trees, algorithmic analysis, complexity and computability, and matrices. A graphing calculator is required.

**MATH 2900 - Directed Study, 1 to 4 Credits**

Level: Lower

A student may contract for from one to four credit hours of independent study in mathematics through an arrangement with an instructor of mathematics. The student and instructor will develop a course of study which must be approved by the department chairperson and the school dean. The instructor and the student will confer regularly regarding the student's progress.

**MATH 3003 - Linear Algebra, 3 Credits**

Prerequisite(s): MATH 1084 with C or better or MATH 1063 with C or better

Level: Lower

Course Attributes: Liberal Arts and Science

This course is an introduction to linear algebra. Topics covered include solution of systems of linear equations, linear independence, matrix algebra, vector spaces, eigenvalues and eigenvectors, orthogonality, and least squares problems.

**MATH 4900 - Directed Study, 1 to 6 Credits**

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

**MATH 5900 - Directed Study, 1 to 4 Credits**

Level: Upper

A student may contract from one to four credit hours of independent study in mathematics through an arrangement with an instructor of mathematics. The student and instructor will develop a course of study which must be approved by the department chairperson and the school dean. The instructor and the student will confer regularly regarding the student's progress.

**MATH 6104 - Multivariate & Vector Calculus, 4 Credits**

Prerequisite(s): MATH 2094 with D or better or MATH 2074 with D or better or MATH 6114 with D or better

Level: Upper

## COURSE DESCRIPTIONS

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Course Attributes: Gen Ed - Math, Liberal Arts and Science

This course is designed as a continuation of Integral Calculus. Topics will include: parametric equations, polar, cylindrical and spherical coordinate systems, vectors and vector valued functions, functions of several variables, partial derivatives and applications, multiple integrals, and vector analysis, including Green's theorem, Stokes' theorem, and Gauss' theorem. The course will include several major projects outside of class.

### **MATH 6114 - Differential Equations, 4 Credits**

Prerequisite(s): MATH 2094 with D or better or MATH 2074 with D or better or MATH 6104 with D or better

Level: Upper

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This is the beginning study of the solution of differential equations with emphasis on both analytic and numerical solutions. Topics include first and second order differential equations and their solutions, series solutions, Laplace transforms, linear equations of higher order, numerical solutions of ordinary differential equations using Euler and Runge-Kutta methods, and the use of Eigenvalue methods to solve linear systems. In addition, this course emphasizes the development of differential equations as mathematical models for a variety of practical applications. The course will include several major projects outside of class.

### **MATH 7113 - Economic Analy for Engr Tech, 3 Credits**

Prerequisite(s): MATH 1063 with D or better or MATH 1084 with D or better

Level: Upper

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This course is designed for the engineering technology student. It covers techniques for comparing alternative projects based on economic considerations; time value of money; present worth; equivalent uniform annual cost; rate of return on investment; minimum cost life; expected value; decisions under risk; effects of income tax and inflation.

### **MATH 7123 - Statistics for Engr Technology, 3 Credits**

Prerequisite(s): MATH 2074 with D or better or MATH 2094 with D or better

Level: Upper

Course Attributes: Gen Ed - Math, Liberal Arts and Science

This calculus-based course offers the theoretical basis for probability and statistics related to engineering applications. Topics include data analysis techniques, random variables, expectation, important probability distributions and densities, inferences concerning one or more means and standard deviations. Reliability, correlation and regression, curve fitting, and quality control charts are introduced. Graphing calculators are required. Computer applications may be included.

## **MACHINE TOOL TECHNOLOGY**

### **MATT 1004 - Basic Industrial Machining, 4 Credits**

Level: Lower

This introductory course is designed to instill safe shop methods and procedures along with the proper and safe use of all equipment associated with Machine Tool Technology. Also incorporated in this introductory course is the proper use of basic measuring tools and hand tools. Students will be instructed in the proper operation of the power saw, drill press and pedestal grinder.

### **MATT 1014 - Industrial Machining I, 4 Credits**

Level: Lower

Students will be instructed in the proper operation of power Basic lathe operations will be presented. The student will demonstrate their proficiencies on this equipment by producing specifically assigned projects.

### **MATT 1024 - Industrial Machining II, 4 Credits**

Level: Lower

This course is designed to develop basic skills on the vertical milling machine. Projects will be assigned to allow the student to demonstrate the various skill levels required.

### **MATT 1234 - Industrial Machining III, 4 Credits**



Level: Lower

The student will be instructed in advanced lathe operations and procedures. These will include precision turning, maintaining closer tolerances, and gage threading with the use of carbide tool cutters. The student will demonstrate the various skills required by producing assigned advanced level projects.

**MATT 1244 - Industrial Machining IV, 4 Credits**

Level: Lower

The student will be instructed in advanced vertical milling operations and procedures. These will include advanced vertical milling machine set-up (i.e. sine plates and indexing heads) and operations (i.e. dove tail and t-slot cutting). The student will demonstrate the various skills required by producing assigned advanced level projects.

**MATT 1254 - Industrial Machining V, 4 Credits**

Level: Lower

The student will be instructed in the safe operation of the horizontal milling machine and the surface grinder. The student will demonstrate the various skills required by producing assigned projects.

**MATT 1713 - Reading Engineering Drawings, 3 Credits**

Level: Lower

The transfer of ideas from the Engineering Department to the manufacturing area is accomplished through the use of Engineering drawings. This course will explain how information is conveyed through the use of ANSI standard drafting procedures and the correct interpretation of that information by the machinist.

**MATT 1913 - Machinist Calculations I, 3 Credits**

Level: Lower

Basic mathematical functions used by the machinist in the performance of their duties will be the subject of this course. Mathematical operations such as manipulation of fractions, decimals and unilaterally converting between the two and into the metric measurement system along with calculating speeds and feeds, tapers and depths of cut will be taught in this course. Successful completion of this course requires a grade of C" or better."

**MATT 1923 - Machinist Calculations II, 3 Credits**

Prerequisite(s):

Level: Lower

This course is a combination of both basic geometry (both plane and solid) and trigonometry. Both of these branches of mathematics will be trade related and will focus on the math needed by the machinist, CAD drafter, and welder to perform their required tasks. Successful completion of this course requires a grade of C" or better."

**MATT 2435 - CNC Industrial Machining III, 5 Credits**

Level: Lower

Continuation and elaboration of previous units with emphasis on student development with the machine tool equipment.

**MATT 2445 - CNC Industrial Machining IV, 5 Credits**

Level: Lower

In this course, the student will be challenged with the setups for many various complex parts. The setups in conjunction with programming of the turning and milling centers will require the student to use all of their recently acquired knowledge.

**MATT 2455 - CNC Industrial Machining V, 5 Credits**

Level: Lower

In this course, all aspects of CNC programming gained in the previous courses will be applied for a final complex project. Trouble shooting and program generation will be fine tuned.

**MATT 2803 - Senior Project, 3 Credits**

Level: Lower

This course requires that the machine tool student call upon all of their past course work into the creation of a senior capstone project. All aspects of machining and programming skills are at their disposal.

**MATT 3003 - Geometric Dimensioning & Toler, 3 Credits**

Level: Lower

Geometric Dimensioning and Tolerancing is dimensioning associated with the tolerancing of

## COURSE DESCRIPTIONS

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individual characteristics of a part where permissible variations relate to form, profile, radial relationship to an axis, orientation of one feature to another, and location of features. Applications of all symbols and proper interpretation will be stressed. Application of various principles referenced in the current specification will be presented.

### **MATT 3005 - Intro to CNC Machine Program, 5 Credits**

Level: Lower

As the most fundamental part of the CNC lathe and its operation, the coordinate grid is covered in detail in this module. Three levels of program preparation are discussed: EIA, APT, and Conversational. Since APT and Conversational languages are normally translated into EIA codes before execution on the machine, a more detailed look at the elements of the EIA coding system is then provided.

### **MATT 3015 - CNC Industrial Machining I, 5 Credits**

Level: Lower

The student will use the horizontal and vertical mill in a safe manner, and will perform various external and internal operations including drilling, power tapping, milling of slots, keyways, boring, laying out bolt circles using x and y coordinates. Students will write step-by-step procedures and will use math formulas to calculate machine time and will draw basic prints for machining purposes.

### **MATT 3025 - CNC Industrial Machining II, 5 Credits**

Level: Lower

The mechanical components of the lathe are explained in this module. The terminology established here is used throughout the balance of the instruction. Because of the variety of turret styles and automatic tool handling mechanisms found on CNC lathes, several configurations are shown along with an explanation of how each operates.

### **MATT 4003 - Senior Project, 3 Credits**

Level: Lower

This course is designed as a capstone project to verify a student's ability in all aspects of machining. The student will be required to identify a need for a new product or improvement on an existing product. After identification, the completion of the project will occur with minimal instructor guidance, which will allow the student to demonstrate their ability to perform independently. Upon completion, the student will demonstrate the functionality of their project in the form of a formal presentation.

### **MATT 4005 - CNC Industrial Machining III, 5 Credits**

Level: Lower

An industrially accepted CAD/CAM system to generate CNC programs will be used throughout this module. The students will be able to produce full programs and download these in the CNC lathe and mill producing a part. Trouble shooting and correction of program errors will be stressed. Proper fixturing and setup of rough material will be presented.

### **MATT 4015 - CNC Industrial Machining IV, 5 Credits**

Level: Lower

CNC programs may be refined regardless of mode of generation. Through this module the students will learn to correct flaws and will produce a finished part within the tolerance of the print and be geometrically correct. The concepts of fixturing and manufacturing will be related using geometric dimensioning and tolerancing.

### **MATT 4025 - CNC Industrial Machining V, 5 Credits**

Level: Lower

The student will be required to set up many various complex parts. Students will use all of their recently acquired knowledge for previous courses to complete set-ups in conjunction with programming using canned cycles on the turning and machining centers. The student will be expected to develop the programming for the desired part, download to the proper machine, and produce the desired part. All of these tasks will be performed with minimum supervision.

### **MATT 4900 - Directed Study, 1 to 5 Credits**

Level: Lower

By arrangement with advisor. Directed study is to provide an opportunity for the student to continue study in a subject area of special interest or special concern, related directly to an actual job opportunity within the drafting curriculum.

**MECHANICAL ENGR TECH****MECH 1002 - Intro Mechanical Engineer Tech, 2 Credits**

Level: Lower

This course prepares students who are new to the mechanical engineering technology field for success at the college level. Topics covered include mechanical engineering technology as a career, engineering library usage, problem solving techniques, measurement systems, right triangle geometry, dimensional analysis, significant figures, unit conversion, and data collection and analysis. Career options and opportunities will be presented using guest speakers from industry. Students will produce professional process documentation, organized solutions to basic engineering problems, engineering diagrams, and engineering presentations.

**MECH 1003 - Intro to Mechanical Eng Tech, 3 Credits**

Level: Lower

This course prepares students who are new to the mechanical engineering technology field for success at the college level. Topics covered include mechanical engineering technology as a career, engineering library usage, problem solving techniques, measurement systems, right triangle geometry, dimensional analysis, significant figures, unit conversion, and data collection and analysis. Career options and opportunities will be presented using guest speakers from industry. Students will produce professional process documentation, organized solutions to basic engineering problems, engineering diagrams, and engineering presentations.

**MECH 1011 - Intro to Mechanical Tech Lab, 1 Credit**

Level: Lower

This lab introduces first year students to a skill set that is required of all students in the Mechanical Engineering Technology Departments. Through both group and individual assignments, students will produce professional process documentation, organized solutions to basic engineering problems, engineering diagrams, and engineering presentations. The lab will require the use of Microsoft Word, Excel, PowerPoint, and Visio.

**MECH 1012 - CAD I, 2 Credits**

Level: Lower

This is an introductory 2D Computer Aided Drafting (CAD) class where students will learn visualization, sketching, and geometric construction of basic mechanical components. This course will illustrate fundamental drafting techniques that implement graphical communication through the use of the Alphabet of Lines, Orthographic Projection, and Section Views. Using CAD, students will learn to create working industrial drawings that adhere to industrial standards.

**MECH 1022 - CAD II, 2 Credits**

Prerequisite(s): MECH 1012 with D or better \* or MECH 1603 with D or better

Level: Lower

This course is a continuation to the fundamental concepts of 2D Computer Aided Drafting (CAD) that is discussed in MECH 1012, CAD I. Students will learn how to create working industrial detail and assembly drawings of mechanical components that can be used for fabrication. This course will also use industrial standards such as ASME/ANSI Y14.5M for Geometric Dimensioning and Tolerancing to facilitate the communication of geometry requirements for associated features on detail components and assemblies. This course will cover, but not be limited to, machine design, weldments, structural steel, process piping, and pressure vessels. The major emphasis of this course will be the creation of working industrial drawings for fabrication and or successful integration into a mechanical assembly. The following standards will be used: ASME Sec. VIII, Div. 2, Pressure Vessel Code, ASME Y14.5M-Geometric Dimensioning & Tolerancing, ASME B31: Standards of Pressure Piping, ANSI B4.1: Limits and Fits, AISC: Standard Structural Steel Construction

**MECH 1103 - Air Conditioning Principles, 3 Credits**

Level: Lower

Fundamental principles of air conditioning and air conditioning systems. Presentation of psychometric principles and processes, equipment selection, heating and cooling load calculations and heating system principles including forced warm air, hot water, electric and steam systems and system components. Principles and practices of heating, air

## COURSE DESCRIPTIONS

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conditioning system design, operation and control.

### **MECH 1203 - Materials Science, 3 Credits**

Level: Lower

This course is a first semester, freshman level course. It is a broad introductory study of the basic characteristics of engineering materials. The course will emphasize the selection of metals, plastics, ceramics, and composites for mechanical design purposes. The relationships of structure, material properties, and material selection to the design/manufacturing process will be emphasized. The study will be enhanced by laboratory experience where the student will study mechanical testing equipment as well as chemical, mechanical and heat treatment effects on important material properties. The course will include the study of such areas as corrosion, strength, rigidity, wear resistance, thermal expansion, elasticity and plasticity principles of the common engineering materials. The course includes the use of equipment such as mechanical testing, light microscopes, electron microscopes, metallograph, furnaces and controllers. Data interpretation is also an important emphasis. The students also have substantial preparation work for the weekly labs.

### **MECH 1603 - Graphics/CAD, 3 Credits**

Level: Lower

Graphics/CAD involves the visualization, sketching, and geometric construction of mechanical components. Students will layout and create 2D working industrial drawings that adhere to industry standards. This course will illustrate CAD drawing construction techniques that implement graphical communication through the use of the alphabet of lines, orthographic projection, section views, auxiliary views and the creation of assembly and detail mechanical components. This course will also use the ASME Standard Y14.5M-1994 for Geometric Dimensioning & Tolerancing to facilitate the communication of geometry requirements for associated features on detail components and assemblies.

### **MECH 1641 - Manufacturing Processes Lab, 1 Credit**

Prerequisite(s):

Corequisite(s):

Level: Lower

This manufacturing processes/machine tool lab is a supplement to MECH 1643 (or equivalent) aimed at exposing the students to laboratory exercises which will illustrate or support the concepts introduced in a manufacturing processes lecture course. Equipment covered in this lab includes: lathes, grinders, milling machines, band saws, drill presses, precision measurement devices etc. As time or student experience permit, the topic of basic C.N.C. machine operations and programs may be introduced. Safety and proper manufacturing procedures will be emphasized.

### **MECH 1643 - Manufacturing Processes, 3 Credits**

Corequisite(s):

Level: Lower

The basic equipment, processes and services required to produce a product are studied. This course is designed to give the student the knowledge and vocabulary to generally comprehend the complex and inter-related design and manufacturing functions that must be accomplished to produce the end product. The equipment covered in this course includes: lathes, grinders, milling machines, planers, shapers, band saws, drill presses, welders, etc. The processes covered include the making of iron and steel, casting, plastics production, hot and cold forming, machining, fastening, non-traditional machining, grinding, etc. The services covered include safety, planning, quality control, and as time permits, an introduction to Computer Aided Manufacturing.

### **MECH 2121 - Thermofluid Mechanics Lab, 1 Credit**

Prerequisite(s): MECH 2123 with D or better \*

Corequisite(s):

Level: Lower

Applications of fluid mechanics and thermodynamic principles to testing and evaluation of appropriate equipment or systems. Laboratory evaluation, development of concepts and applications of instrumentation for data acquisition/data reduction on pumps, compressors, fans, nozzles, orifices, and pipeflow.

**MECH 2123 - Thermofluid Mechanics, 3 Credits**

Prerequisite(s): MATH 1033 with D or better \* or MATH 1063 with D or better \* or MATH 1054 with D or better \* or MATH 1084 with D or better \* or MATH 2094 with D or better \* or MATH 2074 with D or better \* or MATH 2043 with D or better \*

Level: Lower

An introduction to fluid mechanics and thermodynamics with emphasis upon the inter-relationships between the subject areas. Fluid properties, fluid statics, fluid flow with consideration of the energy relationships and introduction to compressive flow and gas dynamics. Thermodynamic analysis of basic systems and thermodynamic cycles.

**MECH 2204 - Energy Conversion Systems, 4 Credits**

Prerequisite(s): MECH 2123 with D or better

Level: Lower

Basic principles involved in the transformation of heat into mechanical energy. Study of variations in design of various components used in the internal combustion engine and the refrigeration system. An emphasis is placed on the general arrangement and construction practices used by equipment manufacturers.

**MECH 2543 - Advanced CAD Applications, 3 Credits**

Prerequisite(s): MECH 1603 with D or better

Level: Lower

Advanced CAD is a continuation of the basic drafting standards and techniques facilitated through the course pre-requisite, MECH 1603. Delving into other mechanical drafting disciplines, this course will help students develop additional skill sets required in a variety of other mechanical fields. This course will cover, but not be limited to, machine design, weldments, structural steel, process piping, and pressure vessels. The major emphasis of this course will be the creation of working industrial drawings for fabrication and or successful integration into a mechanical assembly. The following standards will be used: 1, ASME Sec. VIII, Div. 2, Pressure Vessel Code, ASME Y14.5M-Geometric Dimensioning & Tolerancing, ASME B31: Standards of Pressure Piping, ANSI B4.1: Limits and Fits, AISC: Standard Structural Steel Construction.

**MECH 2603 - Applied Mechanics, 3 Credits**

Prerequisite(s): PHYS 1024 with D or better and MATH 1054 with D or better or MATH 2043 with D or better

Level: Lower

This course is a study of introductory mechanics through the application of the principles of statics. Students will focus on the equilibrium of particles and rigid bodies in two and three dimensions. Additional topics will include centroids, centers of gravity, and analysis of structures, friction, area, and mass moments of inertia. The course includes a basic study of strength and rigidity of mechanical elements in tension, compression, shear, and bending. The course will also emphasize the importance of basic design concepts such as stress, strain, deflections, elastic moduli, yield strength, ultimate strength, stiffness and safety factor with the focus on problem-solving by using algebraic and trigonometric computations.

**MECH 3003 - Machine Design I, 3 Credits**

Prerequisite(s): MECH 1012 with D or better and MECH 1022 with D or better

Corequisite(s): MECH 2603

Level: Lower

This course will emphasize the application of mechanical design for industrial machinery. The lecture material for this course will be enhanced through a laboratory experience using design techniques that include the creation of working industrial drawings, parametrically driven spreadsheet solutions of design problems, component sizing and dimension determinations. The course will include the study of mechanical power systems such as gear trains, belt and chain drives, linkages, clutch-coupling brake components, torque transmission devices, shaft and component design calculations. The techniques of component design will also include the extensive use of online database information, standards and manufacturer's specifications. At all times in this class, the design and development for manufacturability will be paramount.

**MECH 3113 - Statics, 3 Credits**

Prerequisite(s): ( PHYS 1024 with D or better or PHYS 1044 with D or better or PHYS 1064 with D or better ) and ( MATH 1054 with D or better or MATH 2043 with D or better )

Level: Lower

## COURSE DESCRIPTIONS

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This course is a study of introductory mechanics through the application of the principles of statics. Students will focus on the equilibrium of particles and rigid bodies in two and three dimensions. Additional topics will include centroids, centers of gravity, and analysis of structures, friction, area and mass moments of inertia. The course will also emphasize the importance of problem-solving in statics by using algebraic and trigonometric computations.

### **MECH 3124 - HVAC Systems, 4 Credits**

Level: Lower

This course introduces the student to the fundamental principles of heating, ventilation and air conditioning systems. Topics include psychometric principles and processes, equipment selection, heating and cooling load calculations and heating system principles including forced warm air, hot water, electric and steam systems and geothermal heating and cooling systems.

### **MECH 3203 - Computer Aided Manufacturing, 3 Credits**

Level: Lower

This course is a study of Computer Aided Manufacturing (CAM) using a variety of software, programming languages and methods to produce Computer Numerical Control (CNC) machining programs. Programming languages will include Machinist/Conversational, Word Address and APT. CAM software is used to develop detailed CAD drawings, generate machine tool cutter paths and to develop the machining programs via post processing for specific CNC machine tools. Laboratory exercises include programming, machine tool setup and machine operation. Communication between the CAD/CAM computers and the machine tools using RS-232 communication protocol is also studied.

### **MECH 3223 - Mechanical Design Principles, 3 Credits**

Prerequisite(s): MECH 1603 with D or better or ( MECH 1012 with D or better and MECH 1022 with D or better )

Corequisite(s): MECH 3113

Level: Lower

This course will emphasize the application of mechanical design for industrial machinery. The lecture material for this course will be enhanced through a laboratory experience using design techniques that include the creation of working industrial drawings, parametrically driven spreadsheet solutions of design problems, and component sizing and dimension determinations. The course will include the study of mechanical power systems such as gear trains, belt and chain drives, linkages, clutch-coupling brake components, torque transmission devices, shaft and component design calculations. The techniques of component design will also include the extensive use of online database information, standards and manufacturers specifications. At all times in this class, the design and development for manufacturability will be paramount.

### **MECH 3304 - Engine Characteristics Theory, 4 Credits**

Prerequisite(s): MECH 2123 with D or better

Level: Lower

A study of the chemistry of hydrocarbon families obtained from crude oil, their refinement and use of fuels and lubricants. Physical characteristics of various fuels and lubricants and ASTM testing procedures. Methods to determine the air fuel ratios through exhaust gas analysis. Study of engine performance characteristics. Study of electronic engine controls and automotive systems. Experiments and demonstrations covering combustion phenomena, injection, ignition, lubrication and emission systems, dynamometer characteristics and test instrumentation. SAE and ASTM testing procedures for fuels, lubricants and carburetion devices. Evaluation of air-fuel ratios. Application of test instrumentation and analysis techniques and computer analysis of test results. Experience with computer based data acquisition/data reduction procedures.

### **MECH 3643 - Manufacturing Management, 3 Credits**

Level: Lower

This course supplements the study of manufacturing processes with emphasis on techniques, processes and factors that contribute to manufacturing management decision making. Previous manufacturing process exposure is desirable but not essential. Selected topics to be discussed include: motion and time study, engineering economics, project planning and scheduling, Computer Integrated Manufacturing/Management (CIM), Just in Time manufacturing strategy, design for manufacturability, Statistical Process Control (SPC),

Statistical Quality Control (SQC), and other management policies and strategies.

**MECH 4003 - Solid Modeling, 3 Credits**

Prerequisite(s): MECH 1603 with D or better or ( MECH 1012 with D or better and MECH 1022 with D or better )

Level: Lower

This course is an introduction to 3D solid modeling techniques utilizing feature-based, constraint-based parametric design. This course encourages the student to visualize parts in the 3D world and have a design intent" plan for each part in which they will design. This will help in the arrangement of assemblies

**MECH 4013 - Machine Design II, 3 Credits**

Prerequisite(s): MECH 3223 with D or better or MECH 3224 with D or better

Level: Lower

This course will emphasize the mechanical design of industrial machinery. The lecture material for this course will be enhanced through a laboratory experience using design techniques that include the creation of working industrial drawings, parametrically driven spreadsheet solutions of design problems, and component sizing and dimension determinations. This course will include the study of linear motion devices, fluid power, rigid coupling design and flywheels. Also covered in this class is spring design and selection, bolted and welded joint design, column support and lifting lug design. The techniques of component design will also include extensive use of online database information, standards and manufacturers' specifications, and manufacturing for assembly. At all times in this class, the design and development for manufacturability will be paramount.

**MECH 4024 - Dynamics, 4 Credits**

Prerequisite(s): ( MATH 1063 with D or better or MATH 1084 with D or better ) and ( MECH 2603 with D or better or MECH 3113 with D or better )

Level: Lower

The course will emphasize applications of material involving the two basic concepts of dynamics, i.e., kinematics and kinetics and will introduce the students to vibrations. The course will include the study of levers, links, slide mechanisms, scotch yoke and the principles of force, torque, velocity, acceleration, inertia and friction. The course will use the principals of Equilibrium, Work-Energy and Impulse-Momentum along with Newton's Second Law to examine a variety of problems.

**MECH 4224 - Mechanical Systems Design, 4 Credits**

Prerequisite(s): MECH 3224 with D or better or MECH 3223 with D or better

Level: Lower

This course will emphasize the application of mechanical design for industrial machinery. The lecture material for this course will be enhanced through a laboratory experience using design techniques that include the creation of working industrial drawings, parametrically driven spreadsheet solutions of design problems, and component sizing and dimension determinations. This course will include the study of linear motion devices, fluid power, rigid coupling design and flywheels. Also covered in this class is spring design and selection, bolted and welded joint design, column support and lifting lug design. The techniques of component design will also include extensive use of online database information, standards and manufacturers' specifications, and manufacturing for assembly. At all times in this class, the design and development for manufacturability will be paramount.

**MECH 4333 - CAM II, 3 Credits**

Prerequisite(s): MECH 3204 with D or better or MECH 3203 with D or better

Level: Lower

Advanced CAM is a follow-up course to MECH 3204/3203 CAM (Computer Aided Manufacturing) and MECH 1423 (Intro to Solid Modeling). The course will introduce advanced Computer Aided Manufacturing topics such as APT (Automatically Programmed Tools) programming, additional CNC machine programming, solid modeling using Mastercam and/or Pro/E and Reverse Engineering Projects using a Coordinate Measurement Machine/System (CMM).

**MECH 4423 - Robotics, 3 Credits**

Level: Lower

A basic study of robotics and automation. The course will emphasize applications of robotic devices and mechanisms in industrial and commercial applications. The study will be enhanced by laboratory experience where the student will study computer programming of

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robot mechanisms, and the different types of mechanisms by which robots are operated. The course will include the study of computer programming, electrical, electronic and microprocessor control and sensing detection devices and the mechanical and hydraulic linkage power devices involved in the robots. This course also explores the societal impact of robotics and automation in industry.

### **MECH 4523 - Control System Fundamentals, 3 Credits**

Prerequisite(s): MATH 1033 with D or better or MATH 1034 with D or better or MATH 1054 with D or better or MATH 1063 with D or better or MATH 1084 with D or better or MATH 2003 with D or better or MATH 2074 with D or better or MATH 2094 with D or better or MATH 6114 with D or better

Level: Lower

This course introduces students to the electronic components commonly used to monitor and control mechanical systems. Topics include principles of both electronic and pneumatic control systems with an emphasis on mechanical engineering technology applications. Students build simulated control systems using switches and both traditional and solid state relays common on modern industrial machines. Electronic and pneumatic safety interlock systems, delay circuits, and motor circuits are designed and implemented. Lab projects allow students to experience a variety of design solutions and trouble-shoot electronic control systems.

### **MECH 4900 - Directed Study, 1 to 5 Credits**

Level: Lower

A student may contract for one to five credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

### **MECH 5334 - Mechanics of Materials, 4 Credits**

Prerequisite(s): MATH 2074 with D or better and ( MECH 2603 with D or better or MECH 3113 with D or better )

Corequisite(s):

Level: Upper

This course is a calculus-based study of advanced concepts in Mechanics of Materials. It addresses the behavior of deformable mechanical components when subjected to tension, compression, torsion, flexure/bending or a combination of these loads. Extensive use is made of free body diagrams as well as Mohr's Circle for stress and strain. Experience is gained in the analysis of beam deflection, shafts in torsion, power, column buckling and thin walled pressure vessels. Analysis includes examination of stress concentrations, elastic and inelastic response, residual stresses, indeterminate structures and thermal effects. Superposition, singularity functions and theories of failure are studied. Laboratory experiences include traditional mechanical material testing and computer software applications.

### **MECH 5900 - Directed Study, 1 to 5 Credits**

Level: Upper

A student may contract for one to five credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

### **MECH 6003 - Machine Design III, 3 Credits**

Prerequisite(s): ( MECH 3003 with D or better and MECH 4013 with D or better ) or ( MECH 3223 with D or better and MECH 4224 with D or better )

Level: Upper

This course is a study of advanced concepts in designing machine elements for static and dynamic applications. Major topics include structural steel selection and welded structure design, lubricants and the viscosity/temperature relationship, stress analysis and failure theories of machine elements, reliability engineering including Weibull analysis, planetary gear set design, and hydraulic system design including accumulators, pumps, and circuit design.

### **MECH 6123 - Tool, Die & Fixture Design, 3 Credits**

Prerequisite(s): MECH 1643 with D or better and MECH 1603 with D or better



Level: Upper

Tool, Die & Fixture design is a specialized phase of manufacturing that develops the tooling and work holding devices for manufacturing operations. This course will introduce the student to the design of tools, machining tooling, jigs and fixtures and other work holding devices. Students will be required to create working industrial drawings for various work holding devices and fixtures for a myriad of metal removal applications. This will require students to research, analyze, and select the most equitable and safe design solution through calculations, component selection, and mechanical design.

**MECH 6133 - Intro to Finite Elements, 3 Credits**

Prerequisite(s): MATH 4114 with D or better \* or MATH 6114 with D or better \*

Corequisite(s):

Level: Upper

The finite element method is a numerical method for solving engineering problems. This course will introduce engineering technology students to the principles of finite element method by formulating differential equations for solving simple engineering-oriented problems in the areas of structural analysis, heat transfer and fluid flow. The students will also learn to apply a programming environment such as VBA for methods in solving more complex finite element applications by iterative means. A commercial finite element analysis software system will be used as a solver for larger scale 2D and 3D models.

**MECH 6204 - Mechanical Power Systems, 4 Credits**

Prerequisite(s): MECH 7114 with D or better

Level: Upper

Basic principles involved in the transformation of heat into mechanical energy. Fundamentals of the heat engines and turbomachinery including hydraulic, steam and gas turbines, compressors, pumps as well as reciprocating and rotary engines. Study of alternative energy technologies and variations in design of various components. An emphasis is placed on the general arrangement and construction practices used by equipment manufacturers, with an objective to apply knowledge and adapt to emerging technologies and applications.

**MECH 6334 - Fluid Mechanics, 4 Credits**

Prerequisite(s): MATH 2074 with D or better \*

Corequisite(s):

Level: Upper

This course is an introduction to the theory and application of continuum fluid mechanics. Fluid properties and state relations are studied. Incompressible laminar and turbulent flows are investigated using control volume, Reynolds Transport Theorem, and momentum and energy equations. Navier-Stokes Equations are developed. Dimensional analysis, Buckingham Pi Theorem and modeling are covered. Flow rate, pipe sizing and minor losses in pipe systems are addressed. Compressible flow and gas dynamics are introduced and include topics in boundary layer theory, mach number, stagnation properties and shock waves. Turbomachinery, pumps and turbines are included. Weekly laboratory experiences address most of the above topics.

**MECH 7114 - Applied Thermodynamics, 4 Credits**

Prerequisite(s): MATH 2074 with D or better \* or MATH 2094 with D or better \*

Level: Upper

The theory and application of thermodynamics to pumps, compressors, turbines, heat exchangers; power cycles - Carnot, Rankine, Otto, Diesel, Stirling, and Brayton; refrigeration cycles - Carnot compression, absorption, gas; heat pump; problem-solving on ideal as well as actual cycles, psychrometry, stoichiometry, chemical equilibrium.

**MECH 7123 - Metrology & Inspection, 3 Credits**

Prerequisite(s): MECH 1643 with D or better

Level: Upper

The concepts and the practices of quality control, precision measurements and inspection needed in the manufacturing environment are studied. Advanced concepts of direct and indirect measurements, contact and non-contact gauging, angular measurement and surface texture/finish are covered. Expanded coverage of geometric dimensioning and tolerancing and drawing specifications as related to inspection will be emphasized. Precision measurements and part inspection using both manual and computer-controlled coordinate measurement machines and optical comparators will also be covered. The students will play

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an active role in a team" project involving research and reporting on various aspects of the field of metrology."

### **MECH 7143 - Fundamentals of Machine Elements, 3 Credits**

Prerequisite(s): MECH 2603 with D or better

Level: Upper

This course is designed to provide a general knowledge of the various components and elements of devices utilized in a manufacturing process system design. The emphasis is on use, selection and specification of the components, not on the aspects of individual mechanical design principles best left to the mechanical engineers and designers. The students will be able to select and specify individual machine elements" or incorporate them into a system. The selection criteria will involve comparisons of the various available elements utilizing charts

### **MECH 7153 - Fluid Power Systems Design, 3 Credits**

Prerequisite(s): ( MECH 4523 with D or better or ELET 4143 with D or better or ELET 6143 with D or better ) and ( MECH 2603 with D or better or MECH 3113 with D or better )

Level: Upper

This is an upper level design course for all aspects of fluid power systems. Both hydraulic and pneumatic systems are covered. Topics covered in this class include pneumatic circuits, hydraulic power systems, hydrostatic transmissions, and electro-hydraulic control systems. Emphasis will be placed on system design and hydraulic and pneumatic component specification. The course prepares students to sit for the Hydraulic Specialist industry certification exam hosted by the National Fluid Power Society.

### **MECH 7173 - Computational Methods, 3 Credits**

Prerequisite(s): MATH 6114 with D or better and MECH 5334 with D or better and MECH 7334 with D or better

Level: Upper

This course will introduce engineering technology students to the principles of computational methods such as iterative processes, finite difference and finite element methods in the solution of engineering-oriented problems in the areas of structural analysis, heat transfer and fluid flow. The students will also learn to apply a programming environment such as VBA in a structured manner for solving complex applications by iterative means. A commercial finite element analysis software system will be used as a solver for large-scale 2D and 3D models.

### **MECH 7223 - Energy Systems, 3 Credits**

Prerequisite(s): MECH 7334 with D or better and MECH 6334 with D or better

Corequisite(s): MATH 7113

Level: Upper

This course evaluates the concepts of energy and identifies how it relates to current and future technology. Topics include the data analysis of various types of energy systems, conversion among the several forms of energy, environmental impacts, and cost analyses. Lecture is supported by laboratory activities that may include: experiments, data collection and analysis, field trips to energy production facilities, design activities, and a final group project emphasizing principles discussed and experienced throughout the lecture and laboratory portions of the course.

### **MECH 7334 - Heat Transfer of Sustainable Energy, 4 Credits**

Prerequisite(s): MECH 7114 with D or better

Corequisite(s): MECH 6334

Level: Upper

This course is a study of the physical effects of heat transfer phenomena including conduction, convection, and radiation. This will include the concepts of control volume analysis, conservation laws of mass, momentum and energy, steady state and transient conduction, laminar and turbulent convection and phase change. A wide range of engineering problems will be presented to the students for solution using algebraic, differential and/or finite-difference methods. The heat transfer process will be directly applied in the design and analysis of sustainable thermal energy systems such as geothermal heat pump and thermal solar applications.

### **MECH 7503 - Mechanical Vibrations, 3 Credits**

Prerequisite(s): MECH 5334 with D or better and MATH 6114 with D or better

Level: Upper

The course initially develops a foundation in analyzing elementary single and two degree of freedom systems subjected to natural and various types of forced motion. Using this foundation, multi-degree of freedom systems are investigated for both natural and forced motion. Modeling, damping, resonance, force transmissibility and modal analysis are discussed. Emphasis is placed on practical vibrations problems in several engineering fields. In class demonstrations supplement the theory development.

**MECH 8123 - Simulation of Indu & Manuf Sys, 3 Credits**

Prerequisite(s): MECH 1641 with D or better and MECH 5643 with D or better

Level: Upper

Simulation is the process of building a model of a system or decision problem, and experimenting with the model to obtain insight and support decision making. This course introduces students to computer based simulation and modeling with applications to all areas of business, engineering, and industry where management, strategic and operational decision making can be enhanced through the modeling and analysis of complex systems. Applications are designed to depict industrial system modeling including manufacturing processes and production systems, inventory analysis and management, and other aids to decision making, with a particular emphasis on understanding the impact of resource bottlenecks and time delays on system behavior. Hands-on modeling skills are developed using such as Promodel" and/or "Arena" simulation software packages. Through project works

**MECH 8143 - Six-Sigma, Techniques & Strate, 3 Credits**

Prerequisite(s): MATH 2124 with D or better and MECH 5643 with D or better and MECH 6243 with D or better and MECH 7243 with D or better

Level: Upper

Six-Sigma is a quality improvement methodology structured to reduce product or service failure rates to a negligible level (roughly 3.4 failures per million opportunities). The Six-Sigma process encompasses all aspects of a business, including management, service delivery, design, production and customer satisfaction. This course explores the principles and practices of Six-Sigma in manufacturing oriented industries. Students will be introduced to the key concepts of Six-Sigma to better prepare them to support a company's continuous improvement efforts. Students will also learn how to select, justify, and apply the principles, tools, and techniques to improve manufacturing and/or business performance. Topics covered include: quality function deployment, teams and teamwork, DMAIC problem-solving, measures and metrics, project management, statistical methods, control charts, design of experiments, reliability, failure modes and effects analysis, and lean manufacturing. A realistic capstone industry project will be developed and defended by students, individually or in teams, to support understanding and deployment of the Six-Sigma strategies on the factory floor and beyond.

**MECH 8233 - Plant and Process Design, 3 Credits**

Prerequisite(s): MECH 1643 with D or better

Level: Upper

Plant and Process Design is a course that studies the layout and design or redesign of manufacturing facilities to develop part or process production in the most cost effective manner. Current increased productivity trends such as Lean Manufacturing, Agile Manufacturing, Just in Time, etc. will be studied. Work flow and process analysis will be included and plant layout and design software will be utilized for simulated projects.

**MECH 8243 - Reliability Engineering, 3 Credits**

Prerequisite(s): MATH 1123 with D or better and MECH 1641 with D or better

Level: Upper

This course covers such topics as recognizing and using the proper probability distribution to model product times to failure, the analysis of life data to determine the reliability characteristics and to achieve reliability improvement of a product or a process. Also covered are concepts and methods for the design, testing, and estimation of component and system reliabilities, reliability design and implementation, and design procedures that are necessary to insure a reliable product or process. The course also gives an in-depth knowledge about failures and failure rates; troubleshooting through failure modes, effects, and criticality analysis (FMECA); life tests, series-parallel, and standby systems; stress levels; redundancy and reliability apportionment; maintainability, availability, and safety.

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### **MECH 8323 - Design of Machine Elements, 3 Credits**

Prerequisite(s): MECH 5334 with D or better

Level: Upper

Advanced concepts in designing machine elements for static and dynamic applications. Special techniques of design will utilize finite element and parametric computer software. Particular emphasis is placed on designing hydrodynamic bearings, welded machine frames for steady and fatigue loads, stepped shafts for fatigue design failure theories. Flywheels with brake and clutch systems.

### **MECH 8643 - Lean Manuf & Prod Operations, 3 Credits**

Prerequisite(s): MATH 1123 with D or better and MECH 1641 with D or better and MECH 5643 with D or better

Level: Upper

This course provides an understanding of the fundamentals concepts in automation and manufacturing and expands the concepts of Lean Manufacturing introduced in previous courses. It is an integrated approach to efficient manufacturing with emphasis on synchronized production, takt time, quick changeover, cell design, visual factory, value stream-mapping, one-piece flow, and lean metrics. Topics covered include the elimination of waste or non added value activities or processes, automation strategies, production technology and operations, design and analysis of different types of manufacturing and automated systems such as automated flow lines, manual and automated assembly systems, group technology and cellular manufacturing, flexible manufacturing systems, transfer lines and semi-automated manufacturing systems, material handling and storage. Other topics including control issues in manufacturing systems such as facility scheduling, batch sizing, assembly line balancing and bottleneck management, inspection principles and technology, economic analysis in production, supply chain management, material requirement planning (MRP), Just-In-Time (JIT) delivery are also revisited.

### **MECH 8712 - MECH Internship, 12 Credits**

Level: Upper

Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of educational experiences under direct supervision of an owner, manager or supervisor of technology in an organization. Each intern will be supervised by a member of the faculty. Written and oral reports and a journal of work experience activities will be required. Evaluation will be based on the quality of experiences gained from the internship. Students will be required to complete a series of 4 brief investigative or evaluative papers while completing the internship in areas such as career development, organizational structures, organized labor, business management, security, policies, and/or industry and market trends. At the end of the internship students will be required to give an oral presentation to the faculty about their internship experience.

## **HEALTH INFO TECH/MED REC**

### **MEDR 1114 - Intro to Health Info Managemnt, 4 Credits**

Prerequisite(s): MEDR 1132 with C or better \* and COMP 1503 with C or better \* and ( BIOL 1114 with C or better \* or BIOL 1404 with C or better \* )

Level: Lower

This is a lecture- and lab-based course that covers the study of health data structure, content and standards; healthcare information requirements and standards; healthcare privacy, confidentiality, legal, and ethical issues; data storage and retrieval; recording committee minutes; and telephone technique.

### **MEDR 1132 - Essentials of Pharmacology, 2 Credits**

Prerequisite(s): MEDR 1133 with C or better \*

Level: Lower

This is a lecture-based online course for those entering a health care profession, and it covers the study of basic concepts and terminology associated with medication structure, function, interaction, and administration. Core concepts in pharmacology are introduced, including terminology, consumer safety and drug regulations, sources and bodily effects of drugs, medication preparation, abbreviations and systems of measurements, responsibilities, and principles of drug administration. Students also identify diseases associated with certain

medications as well as medications that would be prescribed for certain diseases. Commonly used drugs are organized according to classification, and each classification is described along with characteristics of typical drugs, purpose, side effects, cautions and interactions. Patient education for each category is included.

**MEDR 1133 - Medical Terminology, 3 Credits**

Prerequisite(s): BIOL 1114 with C or better \* or BIOL 1404 with C or better \*

Level: Lower

This is a lecture-based online course that includes the study of body systems and functions, including the structure, meaning, and use of medical terms related to diseases and operations of the human body. Body systems studied include integumentary, musculoskeletal, nervous, sensory organs, endocrine, cardiovascular, respiratory, reproductive, genitourinary, and digestive. Units on psychiatry, psychology and pharmacology (drugs) are also covered. Students also learn how to use research medical information (e.g., such as reputable electronic medical references).

**MEDR 1223 - Health Data Management, 3 Credits**

Prerequisite(s): MEDR 1114 with C or better and MEDR 1132 with C or better

Level: Lower

This is a lecture- and lab-based online course that covers health data structure, content, and standards as well as healthcare statistics and research. Topics of study include the collection and maintenance of health data; application of policies and procedure to ensure the accuracy of health data; verification of timeliness, completeness, accuracy, and appropriateness of data and data sources for patient care, management, billing reports, registries, and databases; collection, maintenance, and reporting of data for clinical indices, databases, and registries to meet organizational needs; and comprehensive of basic descriptive, institutional and healthcare vital statistics.

**MEDR 1234 - ICD-10-CM & ICD-10-PCS Coding, 4 Credits**

Prerequisite(s): ( MEDR 1114 with C or better and MEDR 1132 with C or better ) and ( BIOL 2214 with C or better \* or BIOL 2504 with C or better \* ) and BIOL 4403 with C or better \* and MEDR 1223 with C or better \*

Level: Lower

This is a lecture- and lab-based online course that includes a study of clinical classification systems (e.g., ICD-10-CM and ICD-10-PCS) and reimbursement methodologies. Topics of study include the use and maintenance of electronic applications and work processes that support clinical classification and coding; assignment of diagnosis and procedure codes using current nomenclature; ensuring the accuracy of diagnostic and procedural groupings (e.g., DRGs, MS-DRGs); interpretation of regulations and coding guidelines; validation of coding accuracy by using clinical information located in the health record; use and maintenance of applications and processes to support other clinical classification and nomenclature systems (e.g., DMS-5, SNOMED-CT); and use of clinical data for reimbursement and prospective payment systems.

**MEDR 1244 - CPT & HCPCS Level II Coding, 4 Credits**

Prerequisite(s): ( MEDR 1114 with C or better and MEDR 1132 with C or better ) and ( BIOL 2214 with C or better \* or BIOL 2504 with C or better \* ) and BIOL 4403 with C or better \* and MEDR 1223 with C or better \*

Level: Lower

This is a lecture- and lab-based online course that includes a study of clinical classification systems (e.g., CPT, HCPCS level II) and reimbursement methodologies. Topics of study include the use and maintenance of electronic applications and work processes that support clinical classification and coding; assignment of procedure codes using current nomenclature; ensuring the accuracy of procedural groupings (e.g., ambulatory payment classifications); interpretation of regulations and coding guidelines; validation of coding accuracy by using clinical information located in the health record; and use of clinical data for reimbursement and prospective payment systems.

**MEDR 2614 - Advanced Coding & Reimbursement, 4 Credits**

Prerequisite(s): ( MEDR 1214 with C or better or MEDR 1234 with C or better ) and ( MEDR 1224 with C or better or MEDR 1244 with C or better )

Level: Lower

A lecture- and lab-based course that includes intermediate and advanced study of the ICD-10-CM and ICD-10-PCS (abbreviated as ICD-10-CM/PCS), CPT, and HCPCS level II

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classification systems. Application-based assignments allow students to demonstrate their mastery of coding conventions, coding principles, and official inpatient and outpatient coding guidelines. Students use inpatient and outpatient (e.g., ambulatory surgery, emergency department, physician office) case studies and patient records to assign codes to diagnosis/procedure statements and generate physician queries. ICD-10-CM, ICD-10-PCS, CPT, and HCPCS level II coding manuals and encoders (e.g., CodeFinder, CodeCorrect.com, Encoder Pro, Quantim) are required. Students generate diagnosis-related groups (DRGs) and ambulatory patient classifications (APCs) for inpatient and outpatient cases, respectively, and complete assignments to master other prospective payment systems (e.g., ambulatory surgical center payments, resource utilization groups, home health resource groups).

### **MEDR 3114 - Electronic Health Record Mgmt, 4 Credits**

Prerequisite(s): MEDR 1223 with C or better and MEDR 1234 with C or better and MEDR 1244 with C or better

Level: Lower

This is a lecture- and lab-based online course that includes a study of information and communication technologies; data, information, and file structures; data storage and retrieval; and data security. Topics also include new trends in the management and processing of health information with an emphasis on the electronic health record (EHR). The course also explores implementation of the EHR, including infrastructure required, legal issues that impact implementation, project management techniques, information technology systems, and workflow processes and redesign in health care settings (e.g., acute care, long term care, and mental health care).

### **MEDR 3414 - Quality & Legal Aspects of HIM, 4 Credits**

Prerequisite(s): MEDR 3114 with C or better \* or MEDR 5114 with C or better \*

Level: Lower

This is a lecture- and lab-based online course that includes a study of healthcare information requirements and standards, healthcare statistics and research with an emphasis on data quality and integrity; quality management and performance improvement; healthcare delivery systems with an emphasis on external standards, regulations, and initiatives; healthcare privacy, confidentiality, legal, and ethical issues.

### **MEDR 4111 - Health Informatn Tech Seminar, 1 Credit**

Prerequisite(s): MEDR 4312 with C or better \* and MEDR 4322 with C or better \*

Level: Lower

This is a lecture-based online course that includes content new to the health information management (HIM) profession and to which students did not receive instruction in previous course(s). Examples of such content includes, but is not limited to, new and revised coding classification systems, federal and state statutes (laws) and regulations, information technology initiatives, and so on. Appropriate preparation for taking the Registered Health Information Technology (RHIT) exam is integrated throughout the course, during which students will complete practice exams in HIM content areas and interact with the instructor(s) in discussion board forums to receive clarification about concepts and study techniques. This course should be taken in the student's last semester of study.

### **MEDR 4214 - Insurance&Reimbursmt Processng, 4 Credits**

Prerequisite(s): MEDR 1234 with C or better and MEDR 1244 with C or better and MEDR 1223 with C or better \*

Level: Lower

An internet-based course whose content includes a lecture and lab that includes study of the principles and practice of insurance and reimbursement processing. The course will include the assignment and reporting of codes for diagnoses and procedures/services; completion of CMS-1450 and CMS-1500 claims for inpatient, outpatient, emergency department, and physician office encounters. In addition the course will cover the review of inpatient and outpatient cases to identify issues of fraud and abuse. Textbook cases and patient records will be used to code diagnoses/services/procedures and complete claims. Inpatient and outpatient reimbursement will be determined and source documents interpreted (e.g., Medicare Summary Notice).

### **MEDR 4312 - Intro to HIM PPE, 2 Credits**

Prerequisite(s): MEDR 3114 with C or better or MEDR 5114 with C or better

Level: Lower

Course Attributes: Clinical Liability Insurance

A professional practical experience (PPE) that includes a combination of Internet-based laboratory projects/assignments and the completion of on-site hours in the health information management (HIM) department of a hospital (or other healthcare facility) with adequate facilities to provide varied work opportunities in HIM. Internet-based laboratory HIM projects/assignments are evaluated by college faculty. On site at the hospital (or other healthcare facility), students will work under the supervision of a qualified Registered Health Information Administrator, Registered Health Information Technician or other qualified personnel to whom they are assigned. The PPE is designed to enable students to obtain actual work experience in theoretical and application-based procedures previously studied. Students will complete a maximum of 80 hours on site, which can be completed on a full-time basis (40 hours/week for two weeks) or on a part-time basis over an extended period of time (e.g., eight hours/week for 10 weeks).

**MEDR 4322 - Coding PPE, 2 Credits**

Prerequisite(s): ( MEDR 5214 with C or better or MEDR 4214 with C or better ) and ( MEDR 3114 with C or better or MEDR 5114 with C or better )

Level: Lower

Course Attributes: Clinical Liability Insurance

A professional practical experience (PPE) that includes a combination of Internet-based laboratory coding projects/assignments and the completion of on-site hours in the health information department of a hospital (or other healthcare facility) with adequate facilities to provide varied work opportunities in ICD-9-CM, ICD-10-CM, ICD-10-PCS, CPT and HCPCS level II coding. Internet-based laboratory coding projects/assignments are evaluated by college faculty. On site at the hospital (or other healthcare facility), students will work under the supervision of a qualified Registered Health Information Administrator, Registered Health Information Technician or other qualified personnel to whom they are assigned. The PPE is designed to enable students to obtain actual work experience in theoretical and application-based procedures previously studied. Students will complete a maximum of 80 hours on site, which can be completed on a full-time basis (40 hours/week for two weeks) or on a part-time basis over an extended period of time (e.g., 8 hours/week for 10 weeks).

**MEDR 4514 - Alternate Care Hlth Info Mgmt, 4 Credits**

Prerequisite(s): MEDR 3114 with C or better \* or MEDR 5114 with C or better \*

Level: Lower

This is a lecture- and lab-based online course that includes a study of health information management (HIM) consulting, cancer registry management, healthcare information requirements and standards in alternate healthcare settings (e.g., behavioral healthcare facilities, correctional facilities, long-term healthcare facilities, etc.), clinical classification systems for alternate health care (e.g., DSM-5, ICD-O-3, SNOMED-CT), alternate healthcare delivery systems, HIM human resources, and HIM financial and resource management.

**MEDR 4900 - Directed Study, 1 to 6 Credits**

Level: Lower

An internet-based elective course for students interested in advanced work in health information management in an area of special interest. Enrollment is limited in order to allow each student the opportunity to pursue his/her area of special interest.

**MARKETING****MKTG 1033 - Advertising Principles, 3 Credits**

Prerequisite(s): MKTG 2073 with D or better

Level: Lower

Students will learn the uses and power of advertising and how to apply these concepts to daily business. Students will get a basic understanding of advertising concepts and how to apply them to various media. Using good design and marketing techniques, students will analyze and create advertisements for business use.

**MKTG 1063 - Principles of Sales, 3 Credits**

Prerequisite(s): MKTG 2073 with D or better

Level: Lower

Principles of Sales examines the principles and methods of sales with respect to the salesperson, his/her company, products and customers. Emphasis is placed on the selling

## COURSE DESCRIPTIONS

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process: prospecting, pre-approach, approach, presentation, trial close, meeting objections, and closing. Students will design and implement an industrial sales presentation.

### **MKTG 2073 - Principles of Marketing, 3 Credits**

Level: Lower

Principles of Marketing introduces students to the field of marketing. The course emphasizes marketing functions and institutions as they pertain to the product, price, place, and promotion aspects of bringing goods and services to the consumer.

### **MKTG 3153 - Web Design & Marketing, 3 Credits**

Prerequisite(s): MKTG 2073 with D or better

Level: Lower

This course will examine the uses and power of the Internet, web pages, and e-commerce and how to apply these concepts to daily business. Integration of marketing and web design techniques will be utilized in the creation of effective web pages.

### **MKTG 4900 - Directed Study, 1 to 4 Credits**

Level: Lower

A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the progress of the study.

### **MKTG 6003 - Strategic Marketing, 3 Credits**

Prerequisite(s):

Level: Upper

Strategic Marketing provides students with an overview of the marketing discipline and a framework that presents marketing as a value creation process. Participants learn how to evaluate marketplace potential and risk from the perspective of the entity's unique ability to develop and deliver goods and services of meaningful customer value. Students participate in classroom presentations, discussions, team problem solving, and in-depth analysis of a series of real-life marketing situations with a diverse range of entities and industries. The course explores the principal concepts and tools of contemporary marketing management, from market segmentation and product positioning to the design of distribution channels and communications strategy, in order to maximize the value delivered to customers. A Strategic Marketing Plan will be required.

## **NATURAL SCIENCE**

### **NASC 1001 - Astronomy Laboratory, 1 Credit**

Level: Lower

Course Attributes: Liberal Arts and Science

This laboratory course is designed to accompany NASC 1003 for the student who wishes a laboratory component to astronomy. It will cover many of the same topics as the astronomy course but using a laboratory setting including the use of a telescope, computers, graphing, and various measuring instruments, and astronomical charts.

### **NASC 1003 - Astronomy, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is designed to introduce the principles of astronomy. Emphasis will be placed on scientific process critical thinking, and modeling. This course is suitable for science majors or as a science elective. Topics to be covered are: light spectroscopy, solar system evolution, planetology, comets and asteroids. An optional laboratory course will be offered.

### **NASC 1043 - Physical Science Survey, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

Course surveys principles and applications of physical and earth science. Half of course is devoted to physical phenomena relating to life on earth, including: gravitation, energy, thermal and electrical phenomena, etc. Other half is concerned with earth and its surroundings including: geologic history and structure of earth, tides, atmosphere and solar radiation, meteorology, climate phenomena, astronomy, etc.



**NASC 2001 - Astronomy II Laboratory, 1 Credit**

Corequisite(s): NASC 2003

Level: Lower

Course Attributes: Liberal Arts and Science

The laboratory course will emphasize modern measuring techniques as they relate to theory presented in NASC 2003. Students will benefit from practical problem solving opportunities which provide both tactile and visual learning approaches to astronomy knowledge. Technology introduced will include computer simulations, WEB site data retrieval, Charge Coupled DIsply (CCD) Camera, Schmit Cassagrain telescopes, Geiger-Muller system and spectrographs.

**NASC 2003 - Astronomy II, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is designed as a continuation of NASC 1003, Astronomy, or as a separate introduction to stellar evolution and cosmology. It will introduce advanced topics from the fields of astronomy and cosmology. Emphasis will be placed on scientific process and critical thinking. This course is suitable for science majors or as a science elective. Topics to be covered are: star cycles, galactic evolution and cosmology. An optional laboratory course will be offered.

**NURSING****NURS 1001 - Seminar in Nursing, 1 Credit**

Level: Lower

This elective course is designed to familiarize entering nursing students with the kind of academic, social, and personal experiences that all students preparing for nursing are likely to encounter. The purpose of the course is to assess the student's knowledge and expectations regarding nursing practice, identify the significance of supportive liberal arts courses, and provide strategies to assist the student to meet the academic requirements essential for the nursing curriculum.

**NURS 1109 - Nursing I, 9 Credits**

Prerequisite(s): BIOL 1404 with C or better \*

Level: Lower

Course Attributes: Clinical Liability Insurance

Nursing I is the foundation course in the nursing curriculum. Its content represents commonalities of knowledge and skills considered fundamental to subsequent nursing courses. Emphasis is placed on basic needs of an individual and how these vary, depending on their physical and emotional state and level of development. The student is introduced to the nursing process with an emphasis on assessment and planning. The student develops beginning skills in assisting patients with major health concerns to meet their basic needs. Areas of concentration include: legal/ethical responsibilities of the nurse, concepts of mental health, nutrition, growth and development, pharmacology, drug computations, and antepartal care. Communication skills, health promotion, teaching - learning and asepsis principles are incorporated throughout the course. The development of basic nursing skills begins in a structured campus lab setting and continues in the clinical lab.

**NURS 2001 - Seminar in Nursing II, 1 Credit**

Level: Lower

Course Attributes: Clinical Liability Insurance

This course is designed to familiarize students with the expectations of the nursing program. It is an elective course to be taken by interested students the semester before their first nursing course. The objectives focus on an overview of the philosophy of nursing, theoretical and practical applications of nursing process concepts, and roles of the nurse. Classroom discussions, observations of actual nursing classes and field trips are planned to enhance the student's awareness of the expectations of the nursing program.

**NURS 2201 - Trans to Assoc Degree Nursing, 1 Credit**

Level: Lower

This course orients the student to the philosophy, objectives and curriculum design of the nursing program and focuses on the nursing process, therapeutic communication, documentation, skills and computation competency. This course is required for the transfer

## COURSE DESCRIPTIONS

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student who successfully challenges or receives transfer credit for Nursing I and/or Nursing II and seeks advanced placement in the Nursing program.

### **NURS 2209 - Nursing II, 9 Credits**

Prerequisite(s): BIOL 1404 with C or better and ( NURS 1108 with C or better or NURS 1109 with C or better ) and BIOL 2504 with C or better \*

Corequisite(s):

Level: Lower

Course Attributes: Clinical Liability Insurance

In Nursing II, the student uses the nursing process to assess, plan, implement, and evaluate nursing care to meet basic needs of clients with major health concerns. Health problems are studied in depth with emphasis on therapeutic communication, client education and prevention. Areas of concentration include: crisis, maternal-child health, the surgical experience, diabetes, and caring for individuals with respiratory, cardiovascular and gastrointestinal problems. The campus lab continues to be used for the acquisition, practice and evaluation of technical skills. In the clinical area, the student cares for clients whose conditions are relatively stable and predictable. Observational experiences include rotations to obstetrics, operating and recovery rooms. The student uses a variety of methods to acquire competence in learning objectives and demonstrates increased responsibility for learning.

### **NURS 3002 - Preceptorship, 2 Credits**

Prerequisite(s): NURS 2208 with C or better or NURS 2209 with C or better

Corequisite(s):

Level: Lower

Course Attributes: Clinical Liability Insurance

The focus of this elective course is to increase efficiency and self-confidence. The student works as a member of a nursing team in association with a faculty member and RN preceptor. The exposure to entire shifts under the direction and guidance of a preceptor is expected to increase students' abilities to identify factors influencing client needs. The nursing process is used to determine appropriate nursing interventions with emphasis on organization and priority setting. Increased competency in nursing skill performance, as well as increased ability to evaluate self-performance and increased levels of self-confidence are anticipated.

### **NURS 3311 - Nursing III, 11 Credit**

Prerequisite(s): ( NURS 2209 with C or better or NURS 2208 with C or better ) and BIOL 4254 with D or better \*

Corequisite(s):

Level: Lower

Course Attributes: Clinical Liability Insurance

In Nursing III, the student applies the nursing process in assessing/analyzing, planning, implementing, and evaluating nursing care for one or more clients with chronic and/or critical health concerns. The student further develops his/her role as a teacher by formulating and implementing teaching plans based upon a client's individual needs. Major health concerns addressed include psychiatric problems, blood disorders, hepatic problems, immunological problems, musculoskeletal disorders, cancer, genitourinary problems, gynecological problems, neurological disorders, and acute cardiac problems. The student considers some of the major health problems of children. Further incorporation of therapeutic verbal and nonverbal communication skills is pursued in complex situations. Clinical experience is increased to two seven-hour days per week. The student begins to care for clients in more complex situations in the clinical setting. Each student completes a psychiatric rotation and a rotation to an agency for treatment of dependency disorders.

### **NURS 4001 - Decision-Making in Nursing, 1 Credit**

Corequisite(s): NURS 4410

Level: Lower

This one credit elective course focuses on decision making in nursing and application of a problem-solving approach. The course is designed to assist the student to identify nursing behaviors as steps of the nursing process and define client needs and scope of nursing care to be provided. The emphasis is on applying the nursing process to selected health problems. Stress-reduction techniques and test-taking strategies are also included.

**NURS 4002 - Preceptorship, 2 Credits**

Prerequisite(s): NURS 3310 with C+ or better or NURS 3311 with C+ or better

Corequisite(s):

Level: Lower

Course Attributes: Clinical Liability Insurance

The focus of this senior level elective course is to increase clinical efficiency and self-confidence. The student works as a member of a nursing team in association with a faculty member and RN preceptor. The nursing process is used to determine appropriate nursing interventions with emphasis on organization and priority setting among patients. Increased skill in using the nursing process, particularly the assessment and implementation phases, as well as increased ability to evaluate self-performance and increased levels of self-confidence are expected.

**NURS 4201 - Preceptorship, 1 Credit**

Prerequisite(s): NURS 3310 with C+ or better or NURS 3311 with C+ or better

Level: Lower

Course Attributes: Clinical Liability Insurance

The focus of this senior level elective course is to increase clinical efficiency and self-confidence. The student is able to work as a member of the nursing team in association with a faculty member and RN preceptor. The nursing process is used to determine appropriate nursing interventions with emphasis on organization and priority setting among patients. Increased skill in using the nursing process, particularly the assessment and implementation phases, as well as increased ability to evaluate self-performance and increased levels of self-confidence are expected.

**NURS 4411 - Nursing IV, 11 Credit**

Prerequisite(s): NURS 3311 with C+ or better or NURS 3310 with C+ or better

Level: Lower

Course Attributes: Clinical Liability Insurance

In Nursing IV, the student increases skills in applying the nursing process to a group of clients with chronic and/or critical health problems. The student develops his/her professional role as a leader and manager and is prepared for the transition from student to graduate. Nursing IV involves the student in specialty areas such as the Emergency Department, Intensive Care Unit and community agencies. Major health areas which are investigated include: Endocrine, Neurology, Cardiac, Respiratory, Obstetrical and Trauma Emergencies. To develop the role as a professional, the student participates in a group leader rotation and in a Manager of care rotation with freshman nursing students. Clinical experience continues to be two seven-hour days per week. A pediatric experience, public health rotation and a two day preceptorship are included. Students continue to focus on prevention and health education in the clinical and community setting. In the clinical lab, the student cares for clients in a more critical and complex situation.

**NURS 4900 - Directed Study, 1 to 6 Credits**

Level: Lower

Directed study may be arranged for students interested in study in the field of nursing relative to areas of special interest.

**NURS 5003 - Ethical Issues in Health Care, 3 Credits**

Prerequisite(s):

Corequisite(s):

Level: Upper

This hybrid course examines ethical positions arising from the advancement of modern medicine. Emphasis is placed on ethical theories and principles that guide decision-making in healthcare. Critical reasoning skills are used to analyze ethical issues and to help students understand how to make action oriented decisions for controversial healthcare questions. Aspects of inquiry and ways of knowing are explored, relative to selected ethical dilemmas or issues. Students will research and present a case study on an ethical health care issue.

**NURS 5023 - Contemporary Nursing, 3 Credits**

Prerequisite(s):

Level: Upper

This hybrid course focuses on issues and trends in nursing and healthcare delivery to achieve a broad professional perspective for the expanded role of the baccalaureate prepared nurse. Selected issues and concepts will also be analyzed with depth to determine the impact on

## COURSE DESCRIPTIONS

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rural healthcare delivery. The course also focuses on principles related to critical reasoning and decision-making processes to help the student to better understand the challenges and opportunities in the political, social, and healthcare environment. In addition, issues related to workforce and workplace, policy development, advancement of the profession, and advocacy will be addressed. Lastly, concepts of service learning and social justice will be explored relative to undeserved and/or vulnerable populations. Students will research and present information on a service learning project.

### **NURS 6003 - Nursing Leadership/Management, 3 Credits**

Prerequisite(s): NURS 5003 with C or better and NURS 5023 with C or better

Level: Upper

Course Attributes: Clinical Liability Insurance

This nursing course focuses on the development of decision-making knowledge and skills for the nurse leader. The principles of management and leadership are addressed in the course. Course content includes role concepts, change theory, fiscal management, organizational structure, conflict resolution, impact of unionization, quality control, and performance appraisal. In addition, evidence-based leadership and decision-making for public policy are explored in the course. Lastly, service learning will be further explored with an in-depth focus on concepts of social justice and the nursing leadership role.

### **NURS 6403 - Adv Phrmclgy, Herbal Ther, Nut, 3 Credits**

Prerequisite(s):

Level: Upper

This advanced course involves the study of drug preparations relative to their mechanism of action, physiological effects, methods of administration, therapeutic dosages, healthcare practitioner responsibilities, interactions, untoward effects, and legal implications. The course also explores the use of common herbal therapies, over the counter medications, and nutritional supplements. In addition, the course addresses off-label use of drugs and bioidentical preparations and their therapeutic use. Students will present a patient teaching plan.

### **NURS 6413 - Health Assmt & Promotion Across, 3 Credits**

Prerequisite(s): NURS 5003 with C or better and NURS 5023 with C or better

Level: Upper

Course Attributes: Clinical Liability Insurance

This course focuses on a wholistic approach to health assessment and promotion across the life span. The course builds on previously acquired knowledge and skills to allow a student to complete a comprehensive health assessment. Technological aspects for health assessment and promotion are addressed with the use of simulation where appropriate. Socio-cultural influences, growth and development, and gender are concepts integrated in the course. Students will be required to produce and present a health promotion plan.

### **NURS 7003 - Nursing Research, 3 Credits**

Prerequisite(s): ( MATH 1123 with D or better or MATH 1113 with D or better ) and NURS 6003 with C or better and NURS 6413 with C or better

Level: Upper

This course provides the student with the opportunity to examine the role of the nurse in the generation and application of research in the healthcare domain. The course focuses on the study and analysis of research in nursing practice to optimize client outcomes. Course content includes problem formulation; identification of variables; research design and methodology; data collection and analysis; and interpretation of findings. In addition, the course will focus on how theory and research relate to evidence-based practice. The steps of the research process will have sufficient depth covered to allow for a beginning appreciation of scholarly inquiry and evaluation of selected nursing research studies. Student groups will present a topical research literature review.

### **NURS 7004 - Population Focused Care in Com, 4 Credits**

Prerequisite(s): NURS 6003 with C or better and NURS 6403 with C or better and BIOL 6403 with C or better

Level: Upper

Course Attributes: Clinical Liability Insurance

This course focuses on the study of the role of the nurse in evaluation of current public health issues and population-focused health care delivery. Key public health concepts and

frameworks will be examined from an evidenced based perspective. Principles of social justice and public health policy will be discussed as they interrelate with a variety of populations, with an emphasis on specific needs of rural communities. A forty-five hour preceptor guided community health immersion experience will provide an opportunity for the student to utilize the public health nursing model to participate in community assessment, identification of resources, and planning of primary health prevention/promotion activities.

**NURS 7023 - The History & Image of Nursing, 3 Credits**

Prerequisite(s):

Level: Upper

This course is designed to provide an overview of the history of nursing and nursing images as they relate to the American health care system and society. The course also includes an overview of historiography or historical research as well as fundamental principles for critiquing historical studies or narratives. The course also addresses issues of class, race, gender, and societal values as possible influences on the development of the nursing profession. Lastly, the course includes a review of selected past nursing leaders within his/her context and influence upon modern nursing. Students will produce presentations on topical nursing image concerns.

**NURS 7033 - Healthy Aging in Rural Areas, 3 Credits**

Prerequisite(s):

Level: Upper

This course focuses on the healthcare of elders including the unique aspects of aging across the adult lifespan. Elders and their needs are framed from a physical, psychological, social, cultural and spiritual perspective and within a family and community environment. Emphasis in the course is on health maintenance, prevention, and promotion as well as maintaining function and preventing disability in the elderly. The student will offer a presentation addressing contemporary nursing and healthcare issues affecting elders in rural areas.

**NURS 8002 - Informatics & Tech App in Hlth, 2 Credits**

Prerequisite(s): NURS 7003 with C or better and NURS 7004 with C or better

Level: Upper

This course will focus on informatics and technology applications in the healthcare setting. The course covers the use of information systems and technologies such as telehealth, electronic health record (EHR), distance and e-learning, digital personal record, and databases. In addition, the course will explore the use of portable and personal devices such as personal digital assistant (PDA), IPOD Touch portable media player, portable computer, and other mobile platforms in the healthcare setting. The course will also address the integration of topics related to legal, ethical, and policy issues affecting information management and technology in healthcare delivery. Finally, the course will explore information technology systems as they relate to workflow and redesign in various healthcare settings to improve client outcomes. Students will offer a presentation to implement a telehealth or e-learning application in health care.

**NURS 8013 - Professional Capstone, 3 Credits**

Prerequisite(s): NURS 7003 with C or better and NURS 7004 with C or better

Level: Upper

Course Attributes: Clinical Liability Insurance

This capstone course continues to expand and explore content to prepare the student for an autonomous role as a baccalaureate-prepared practitioner in health care. Course activities help the student identify a health care need in a rural setting in order to design and implement a project to address the selected concern. In addition, the course content allows the student to further develop a personal philosophy through the culminating socialization process to the expanded and autonomous role. Students will offer both written and oral capstone presentations.

**NURS 8043 - Political Activism & Nursing, 3 Credits**

Prerequisite(s): NURS 3311 with C+ or better

Level: Upper

This course is designed to provide the student with a knowledge base and develop skills for implementation of political activism for the nursing profession within the United States of America or U. S. healthcare system. The course focuses on the politics of health policy in terms of legislative and executive processes at the local, state, and federal level. The course

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also explores economic, social, ethical and political factors related to activism and healthcare delivery. In addition, political aspects are explored relative to individuals or groups of importance, including special interest groups, lobbyists, the press, elected officials, legislative staff, and public agencies. Students will produce an analysis of healthcare systems and policies of selected countries compared to the U.S. healthcare system and industry.

### PHILOSOPHY

#### PHIL 1073 - Problems of Philosophy, 3 Credits

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

Problems in Philosophy examines some of the fundamental questions, controversial issues, and major problems faced by people in relationship to the world. It also focuses on some of the methods for inquiry and problem-solving that people have devised to make their world more comprehensible. The course is designed, through readings and class discussions, to promote critical thinking and to develop effective techniques of systematic inquiry.

#### PHIL 2013 - Critical Thinking, 3 Credits

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

This course has a three part structure: 1. Logic. At root, critical thinking is the ability to reason; to think logically. Students will learn core concepts such as validity, soundness, logical form, and informal fallacies. 2. Applied Argument Construction. Students will learn to construct and critique ordinary and scientific arguments, both in written and oral form, using the logical principles learned in the Logic component of the course. 3. Alternative Reasoning Methods. Students will be encouraged to identify and examine arguments based on cultural background, gender, religious convictions, requirements of classical logic. Students will be encouraged to identify and examine such arguments. The purpose of this examination is not to invalidate or endorse alternative reasoning methods, but to encourage students to talk with each other about the difference and similarities in the ways they make judgments, and other factors. Writing is continued in assignments related to readings, class discussions, and lectures.

#### PHIL 2173 - Ethics, 3 Credits

Level: Lower

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

Ethics is a course designed to inquire into the nature of values and how we acquire them. It studies some major ethical systems derived from such values that have been used to evaluate man's conduct. It encourages students to discuss theories as applied to existing moral dilemmas. Writing is continued in assignments related to readings, class discussions, and lectures.

#### PHIL 2900 - Directed Study, 1 to 3 Credits

Level: Lower

Course Attributes: Gen Ed - Humanities

The student may contract for one to three credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student must submit a plan acceptable to the instructor and the department chairperson. To be substituted for the listed humanities requirements, a directed study course must be so designated by the department chair. Writing is continued in assignments related to readings, class discussions, and lectures.

#### PHIL 5013 - The Meaning of Life, 3 Credits

Prerequisite(s): LITR 2603 with C or better

Level: Upper

A survey of the existing literature that seeks to answer the question "What is the Meaning of Life?" Major topics include: free will vs. determinism

#### PHIL 6033 - Biomedical Ethics, 3 Credits

Prerequisite(s): COMP 1503 with D or better and BIOL 1104 with D or better or BIOL 1303 with D or better or BIOL 1404 with D or better or BIOL 1813 with D or better or BIOL 2204 with D or better or BIOL 2504 with D or better or BIOL 2803 with D or better or BIOL 4254 with D or better or CHEM 1114 with D or better or CHEM 1514 with D or better or CHEM

1984 with D or better or CHEM 2124 with D or better or CHEM 2984 with D or better or CHEM 3514 with D or better or CHEM 4524 with D or better or NURS 1108 with D or better or NURS 2001 with D or better or NURS 2201 with D or better or NURS 2208 with D or better or NURS 3310 with D or better or NURS 3403 with D or better or NURS 4001 with D or better or NURS 4410 with D or better or NURS 4502 with D or better or NURS 5513 with D or better or NURS 6403 with D or better or VETS 2013 with D or better or VETS 2014 with D or better or VETS 3002 with D or better or VETS 3004 with D or better or VETS 3024 with D or better or VETS 3204 with D or better or VETS 4103 with D or better or VETS 4202 with D or better

Level: Upper

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

This course is a study of specific ethical problems in the practice of medical science. Ethical issues examined include abortion, impaired infants, euthanasia, paternalism, truth-telling, confidentiality, human and animal experimentation, reproduction, cloning, and scarcity of resources. The purpose of the course is to provide an accepted ethical and biomedical framework to enable the student to reason clearly and effectively about the ethics involved in medical science and technology. Class sessions emphasize student participation and debate and use case studies as a format for discussion. The course assumes no prior knowledge of philosophical ethics. The course has also been designed to help students refine their ability to read and write scholarly work.

**PHIL 6053 - Philosophy of Science, 3 Credits**

Prerequisite(s): COMP 1503 with D or better or BIOL 1303 with D or better or BIOL 1404 with D or better or BIOL 1813 with D or better or BIOL 2204 with D or better or BIOL 2504 with D or better or BIOL 2803 with D or better or BIOL 4254 with D or better or CHEM 1114 with D or better or CHEM 1514 with D or better or CHEM 1984 with D or better or CHEM 2124 with D or better or CHEM 2984 with D or better or CHEM 3514 with D or better or CHEM 4524 with D or better or PHYS 1024 with D or better or PHYS 1044 with D or better or PHYS 1064 with D or better or PHYS 2014 with D or better or PHYS 2023 with D or better or PHYS 2044 with D or better or PHYS 2064 with D or better and BIOL 1104 with D or better

Level: Upper

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

This course is designed to develop and refine students' views about the nature of science, and the nature of change, both gradual and revolutionary, in scientific theory. This course uses work in the history of science and philosophy of science to address the nature of scientific disciplines (the theories and problems which characterize them); the relations between theory and the empirical work; and the nature of theory changes in the sciences. The course has also been designed to help students refine their ability to read and write scholarly work, including a major research project.

**PHYSICS**

**PHYS 1014 - Introductory Physics, 4 Credits**

Level: Lower

This course is appropriate for students lacking a strong math and science background and is designed to develop physical concepts in the classroom in a highly interactive laboratory. The laboratory portion of the course will include traditional and conceptual physics experiments, computer work and time devoted to physics problem solving. Considerable attention is paid to problem solving and the development of problem analysis skills.

**PHYS 1024 - General Physics I, 4 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

Prerequisite: a working knowledge of algebra. This is the first semester of a one-year course designed primarily for students at the Engineering Technology level. The topics covered include: vectors, linear and rotational kinematics, linear dynamics, equilibrium, friction, work, energy, power, momentum and collisions, and gravitation, and rotational momentum and collisions and gravitation.

**PHYS 1044 - College Physics I, 4 Credits**

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This is the first semester of a two semester sequence, which is appropriate for a Liberal Arts

## COURSE DESCRIPTIONS

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or technical student who plans to complete a four year degree. The course describes the fundamental laws of natural environment and provides the student with an appreciation of how physics impacts nature and society. Problem solving is stressed. The course studies motion, force, energy, collision, rotational motion, heat, and fluids. This course includes a laboratory each week covering the topics listed for this course.

### **PHYS 1064 - Physics for Engr & Science I, 4 Credits**

Prerequisite(s): MATH 1084 with D or better

Corequisite(s):

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is the first of a sequence of three semesters intended to cover elementary classical physics for those students who are planning to transfer into a four-year program in engineering, mathematics, or one of the natural sciences. The topics covered include: measurements, vectors, kinematics, dynamics, work and energy, momentum and collision, equilibrium or rigid bodies, and gravitation. This course includes a lab each week covering the topics listed for this course.

### **PHYS 2023 - General Physics II, 3 Credits**

Prerequisite(s): PHYS 1024 with D or better

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is a continuation of PHYS 1024. Topics covered include: wave motion, sound, electrostatics, current, electricity, electric circuits, magnetic effects, light and illumination, reflection, refraction, mirrors, thin lenses, dispersion, interference, and diffraction. Laboratory work is also included covering most of these topics.

### **PHYS 2044 - College Physics II, 4 Credits**

Prerequisite(s): PHYS 1044 with D or better

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is a continuation of PHYS 1044. It is appropriate for a Liberal Arts or technical student who plans to complete a four-year degree. The topics covered include: simple harmonic motion, waves, light, electricity and magnetism. Problem solving is stressed. The course includes a lab each week covering the topics listed for this course.

### **PHYS 2064 - Physics for Engr & Sci II, 4 Credits**

Prerequisite(s): PHYS 1064 with D or better

Level: Lower

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This course is a continuation of PHYS 1064. Topics include: wave motion, simple harmonic motion, electricity, and circuit analysis. The course includes a lab each week covering the topics listed for this course.

### **PHYS 2900 - Directed Study, 1 to 5 Credits**

Level: Lower

A student may contract for one to five credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

### **PHYS 8013 - Modern Physics, 3 Credits**

Prerequisite(s): ( PHYS 2023 with D or better or PHYS 2044 with D or better or PHYS 2064 with D or better ) and ( MATH 2094 with D or better or MATH 2074 with D or better )

Level: Upper

Course Attributes: Gen Ed - Natural Sciences, Liberal Arts and Science

This is a one-semester course designed primarily for BT/BS students, but can be taken by any students who meet the pre-requisites. This course is designed to provide students with information about the discoveries made, ideas and concepts advanced, and the knowledge gained in physics during the past hundred years. Topics include: relativity, corpuscular nature, matter waves, atomic physics, quantum mechanics, quantum theory or hydrogen, many-electron atoms, molecular structure, statistical mechanics, and properties of solids. Lecture/Laboratory. This course includes lab work covering the topics listed for this course.



**POLITICAL SCIENCE****PLSC 1043 - American Government, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - American History, Gen Ed - Social Sciences, Liberal Arts and Science

This course provides an introduction to American government. Students will examine the basic framework and institutions of government, including the U.S. Constitution and branches of government. The development and historical growth of government will be discussed as well as the effect of government on diverse social groups. Emphasis will also be on national policies regarding the economy, foreign relations, natural resources, and various moral/ethical issues, including civil rights and individual liberties.

**PLSC 1053 - International Relations, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Other World Civ, Liberal Arts and Science

This course examines the dynamics of the nation-state and the interrelationship among states. Attention will be given to the position of the United States as a world power in the past, present and future. Topics will include the history of international relations; U.S. foreign policy and security challenges; the problems faced by less developed countries; international organizations; globalization" and the dynamics of the world economy; and regional and national perspectives. An emphasis will be placed on current events and areas of conflict around the world."

**PLSC 2900 - Directed Study, 1 to 4 Credits**

Level: Lower

This course allows students who have successfully completed a previous course in political science to continue study in that subject. A student may contract for one to four credit hours. Directed study may be contracted by a student only with the approval of the directing instructor and the department chairperson.

**PSYCHOLOGY****PSYC 1013 - General Psychology, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

The major emphasis of this course is on normal human behavior. Both the biological structure of the human organism and the effect of the environment upon behavior are studied. The major areas of psychological study, including research methods, sensation and perception, learning theories, and cognitive processes are surveyed.

**PSYC 1023 - Human Development, 3 Credits**

Prerequisite(s): PSYC 1013 with D or better

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

This introductory course is designed to help students understand the basic concepts and principles of physical, cognitive, and psychosocial development at each major stage of life - from conception until old age. Major theories are explained and fully integrated throughout the human life span.

**PSYC 1033 - Human Relations, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

This course covers the problems of human adjustment using the psychoanalytic, social-learning, and humanistic perspectives. The course also focuses on stress, its effects and its management. The third area of study concerns interpersonal and social aspects of adjustment.

**PSYC 1053 - Intro to Social Psychology, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

The course is an introduction to social psychology - the scientific discipline which studies the psychology of the individual in society. It focuses on the individual during social interaction, social influence, and interaction processes. Among topics considered are: attitude change,

## COURSE DESCRIPTIONS

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person perception, attribution theory, verbal and nonverbal communication, conformity and nonconformity, aggression and affiliation, power, social justice, and interpersonal attraction.

### **PSYC 1063 - Basic Helping Skills, 3 Credits**

Prerequisite(s): PSYC 1013 with D or better

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

This course is designed to assist the student in developing the helping skills necessary to conduct a productive, helping session. Helping models, ethical considerations, and interview methods will be examined, particularly as they apply to the human services field. Students will video and participate in mock counseling sessions.

### **PSYC 2033 - Adolescent Development, 3 Credits**

Prerequisite(s): PSYC 1013 with D or better

Level: Lower

Course Attributes: Liberal Arts and Science

Adolescent Development is an introduction to the physical, cognitive, and social changes which occur between puberty and young adulthood. Contemporary issues of gender, sexuality, morality, and education are discussed. Psychological theories and developmental stages of life will be explored by the student and applied to adolescent behavior.

### **PSYC 2093 - Abnormal Psychology, 3 Credits**

Prerequisite(s): PSYC 1013 with D or better

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

The major emphasis of this course is the understanding of the symptoms, etiology, diagnostic classification, and theories pertaining to psychopathology. Special attention is paid to the medical model, the psychological model, and the behaviorist model as they apply to the causes and treatment of the behavioral disorders. Newer developments in therapy which treat mental disorders as problems of living rather than specific diseases are analyzed.

### **PSYC 2900 - Directed Study, 1 to 4 Credits**

Level: Lower

This course allows students who have successfully completed a previous course in psychology to continue study in that subject. A student may contract for one to four credit hours. However, directed study may be contracted by a student only with the approval of the directing instructor and the department chairperson.

### **PSYC 5013 - Counseling Theory, 3 Credits**

Prerequisite(s): PSYC 1063 with D or better

Level: Upper

Course Attributes: Liberal Arts and Science

This course is intended to provide students with an overview of current psychological approaches to helping. Topics will include theories of counseling, cultural issues, professional concerns and ethical standards of the field. The course will also address issues related to the historical and theoretical bases of crisis intervention.

### **PSYC 5093 - Health Psychology, 3 Credits**

Prerequisite(s): PSYC 1013 with D or better

Level: Upper

Course Attributes: Liberal Arts and Science

Health Psychology is an inter-disciplinary field concerned with the biological, psychological and sociological factors associated with health and disease. In this course, students will study various health determinants, the impact of socio-economic and cultural influences on health-related behaviors, the physiology of stress and effective ways to manage or reduce its negative consequences and how to evaluate research in health related fields. In addition, students will critically examine global health concerns from a health systems and health policy perspective. Topics will include the global impact of disease, theories of health-related behavior change, stress, coping, communicable and chronic diseases including cancer, cardiovascular disease, HIV, chronic pain management and the placebo effect. Strategies for individual and community health advocacy will also be discussed.

### **PSYC 5103 - Industrial/Organizational Psychology, 3 Credits**

Prerequisite(s): PSYC 1013 with D or better or PSY 1013 with D or better

Level: Upper

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

Industrial/Organizational Psychology is an advanced course which applies the principles of psychology to the workplace. The focus of the course is on such topics as scientific management, human relations, motivation, group dynamics, and personnel selection. Students will learn about performance appraisal, leadership skills, labor-management relations, and organizational communication. Other topics for discussion include employment discrimination, sexual harassment, and the abuse of drugs.

## **READING**

### **READ 2193 - Effective College Reading, 3 Credits**

Level: Lower

Students may be placed in this course based on test scores or may take it as an elective to expand reading skills beyond the literal comprehension level, improve flexibility and efficiency, and effectively apply these proficiencies. Vocabulary development, critical reading, critical thinking, and discussion skills will be emphasized and will enable the student to apply learning strategies and processes to the reading of college texts.

## **RELIGION**

### **RELG 7003 - Religions of the World, 3 Credits**

Prerequisite(s): COMP 1503 with D or better

Level: Upper

Course Attributes: Gen Ed - Humanities, Liberal Arts and Science

Students will explore diverse religious perspectives and ways of thinking and writing about religious themes and religious experience. Through the study of primary religious texts and secondary critical analyses, the student will develop a broad understanding of the diversity of religions that have shaped and continue to influence and direct the course of human civilization. Class sessions emphasize student discussion, and assignments encourage student reflection about the meaning and role of religion and religious diversity in their lives and those of others. Research and substantial writing assignments will further develop the student's writing, interpretation, critical thinking, and information literacy skills.

## **SOCIOLOGY**

### **SOCI 1133 - Russian Culture and Society, 3 Credits**

Level: Lower

A study abroad course that explores Russian society and culture through readings, discussions, presentations, field trips to sites in Moscow and Perm, a home stay, a participant observation study with accompanying paper, and a project at an orphanage (or other site where project-based learning can be done).

### **SOCI 1163 - General Sociology, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

Sociology is the scientific study of society and social groups. This introductory course discusses the research methods, basic concepts, theories and perspectives used by sociologists. Among the topics covered are culture, socialization, social structure, deviance, social stratification, diversity, globalization, minority groups, gender, and selected social institutions.

### **SOCI 1183 - Contemporary Social Problems, 3 Credits**

Prerequisite(s): SOCI 1163 with D or better

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

The purpose of the course is to acquaint the student with a broad spectrum of social problems within the contemporary United States. The factors causing social and cultural problems will be emphasized. Each student will be required to use sociological principles to analyze one selected problem.

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### **SOCI 1193 - Marriage & Family Acrs Wrld Cit, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Other World Civ, Gen Ed - Social Sciences, Liberal Arts and Science

This course provides a cross-cultural and global perspective on society's two vital institutions: Marriage and the Family. Comparative analysis is used throughout the course to enhance student appreciation of the intercultural variability and similarity in these institutions.

### **SOCI 1223 - Minority Cultures, 3 Credits**

Prerequisite(s): SOCI 1163 with D or better

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

The course is a survey of historical and contemporary majority group-minority group relations in the United States. Using a sociological perspective, it focuses on the impact of ethnicity, race and gender on the distribution of power, opportunity and privilege. The emphasis is on the social construction of systems of difference. The course requires either a student research paper or a student presentation.

### **SOCI 1233 - Gerontology, 3 Credits**

Prerequisite(s): SOCI 1163 with D or better

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

This course provides an introduction to the study of human aging. Emphasis is placed on social gerontology, though research from both bio-gerontology and psycho-gerontology is discussed. The focus is primarily on aging in the United States, though some cross-cultural data is presented.

### **SOCI 1243 - Criminology, 3 Credits**

Prerequisite(s): SOCI 1163 with D or better

Level: Lower

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

The course provides an introduction to the sociological study of crime and criminal behavior. Emphasis is given to the variable definitions of crime with respect to time and place, the causes and theories of crime, topologies of criminal behavior, and crime prevention strategies. An overview of the criminal justice system (law enforcement, the court process, and correction) is presented.

### **SOCI 2900 - Directed Study, 1 to 4 Credits**

Level: Lower

This course allows students who have successfully completed a previous course in Sociology to continue study in that subject. A student may contract for one to four credit hours. Directed study may be contracted by a student only with the approval of the directing instructor and the department chairperson.

### **SOCI 4900 - Directed Study, 1 to 6 Credits**

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chair. The instructor and student will confer regularly regarding the process of the study.

### **SOCI 5023 - Research Methods, 3 Credits**

Prerequisite(s): MATH 1123 with D or better or MATH 1113 with D or better

Level: Upper

Course Attributes: Liberal Arts and Science

With an emphasis on human service agencies and evaluation research, this upper-level course focuses on the how's and why's of doing research. The research techniques used by human services practitioners and social scientists are discussed. Ethical ways to build knowledge and to conduct program evaluation are examined. Students gain practical experience in doing research by designing their own agency-focused research project. SPSS will be the data analysis package utilized.

### **SOCI 5213 - Science, Technology & Society, 3 Credits**

Prerequisite(s): HIST 1113 with D or better or HIST 1143 with D or better or HIST 2153 with D

or better or PLSC 1043 with D or better or SOCI 1163 with D or better

Level: Upper

Course Attributes: Gen Ed - Social Sciences, Liberal Arts and Science

This course is a survey of the growth of science and technology and their impact upon society as a whole with primary emphasis upon the United States. Major concentration is on the period since the mid-nineteenth century emphasizing the intellectual climate leading to and resulting from scientific and technological changes and the influence of these developments upon industry, government, education, agriculture, ecology and other areas.

## **SPANISH**

### **SPAN 1203 - Spanish I, 3 Credits**

Level: Lower

Course Attributes: Gen Ed - Foreign Languages, Liberal Arts and Science

This course focuses on developing the student's ability to speak, to write, and to read Spanish. Additional emphasis is given to learning about the diverse cultures of the Spanish-speaking world. Instruction centers on oral communication, grammar (especially formation of verbs), and cultural awareness. Writing is continued in assignments related to readings, class discussions, and lectures.

### **SPAN 2203 - Spanish II, 3 Credits**

Prerequisite(s): SPAN 1203 with D or better

Level: Lower

Course Attributes: Gen Ed - Foreign Languages, Liberal Arts and Science

This second semester course is designed to suit the needs of persons who wish to learn to communicate orally in the Spanish language for purposes of travel, business, personal pleasure, and academia environment. The student's listening, speaking, reading and writing skills in Spanish will be further developed.

### **SPAN 4900 - Directed Study, 1 to 6 Credits**

Level: Lower

A student may contract for an independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

### **SPAN 5303 - Spanish III, 3 Credits**

Prerequisite(s): SPAN 2303 with D or better

Level: Upper

Course Attributes: Liberal Arts and Science

This course focuses on strengthening the student's ability to speak, write, and read Spanish. Through a balanced integration of listening, reading, speaking, writing, and critical thinking activities, students will broaden their grammar, vocabulary, and knowledge of Hispanic culture, art, history, literature, film, and music. The class will be conducted completely in Spanish. Readings and literary selections will come from different Hispanic and Latin American sources. Students will enhance their speaking skills through class discussions, debates, and short presentations on topics of current issues such as globalization, technology, environment, society, or culture. Writing will be enhanced in assignments related to readings, media, lectures, and discussions. This course is aligned with the five language areas referred in the National Standards for Foreign Language Learning in the 21st Century (1999).

### **SPAN 5503 - Spanish III, 3 Credits**

Prerequisite(s): SPAN 2303 with D or better

Level: Upper

This course focuses on strengthening the student's ability to speak, write, and read Spanish. Through a balanced integration of listening, reading, speaking, writing, and critical thinking activities, students will broaden their grammar, vocabulary, and knowledge of Hispanic culture, art, history, literature, film, and music. The class will be conducted completely in Spanish. Readings and literary selections will come from different Hispanic and Latin American sources. Students will enhance their speaking skills through class discussions, debates, and short presentations on topics of current issues such as globalization, technology, environment, society, or culture. Writing will be enhanced in assignments related

## COURSE DESCRIPTIONS

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to readings, media, lectures, and discussions. This course is aligned with the five language areas referred to in the National Standards for Foreign Language Learning in the 21st Century (1999).

### SPEECH

#### **SPCH 1083 - EFFECTIVE SPEAKING, 3 CREDITS**

Prerequisite(s): COMP 1503 with D or better

Level: Lower

Course Attributes: Gen Ed - BC-COMP1503/SPCH1083, Gen Ed - BC-COMP3503/SPCH1083, Liberal Arts and Science

This course deals with preparing, presenting, and critiquing the basic speech types: reporting, demonstration, and argumentation. Special attention is given to collecting, selecting, and arranging of material; to presenting and delivering; and to active listening and critical evaluating. The course stresses principles of interpersonal communication and provides a basis for the understanding of speech through utilizing various media. The course is designed to help students obtain the speaking skills with which to respond to various oral communication situations encountered throughout college and in professional, civic, and social areas before and after graduation. This course cannot be used to satisfy the six (6) hour humanities requirement for graduation. Writing is continued in assignments related to readings, class discussions, and lectures.

#### **SPCH 2900 - Directed Study, 1 to 3 Credits**

Level: Lower

The student may contract for one to three credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student must submit a plan acceptable to the instructor and the department chairperson. Writing is continued in assignments related to readings, class discussions, and lectures.

#### **SPCH 5083 - Communication in the Workplace, 3 Credits**

Prerequisite(s): COMP 1503 with D or better and SPCH 1083 with D or better

Level: Upper

Course Attributes: Gen Ed - BC-COMP1503/SPCH5083, Gen Ed - BC-COMP3503/SPCH5083, Liberal Arts and Science

The class is designed to give students the opportunity to obtain the communications skills encountered throughout college and his or her personal and professional life. Special attention is given to the theory of organizational communication, basic communication skills, interpersonal communication, employer-employee relations, group communication, and presentational speaking.

### SPORTS MANAGEMENT

#### **SPMG 1123 - INTRO TO SPORTS MANAGEMENT, 3 CREDITS**

Level: Lower

This course is an investigation of the scope of the sport industry, which is a growing major business enterprise in the United States and in much of the world. The various functions of effective management, and the skills, attributes and roles required of the sport manager are discussed. Attention will be focused on how the managerial process relates to sport organizations and the products they provide. Students become acquainted with career opportunities in the sport management field. The course is designed to provide an overview of sports administration with an emphasis on management principles and career opportunities. Course content will include lectures, guest speakers, and group discussions.

#### **SPMG 2003 - Sport in Society, 3 Credits**

Prerequisite(s): SPMG 1123 with D or better

Level: Lower

This course provides an in-depth examination of sport in society, particularly in the United States. A review of the role of sport participants, spectators, and the media on society is included. Various organizational levels of sporting opportunity and sporting behavior, including sport ethics, resulting from the influence of society will be covered.

**SPMG 2123 - History of Sport, 3 Credits**

Level: Lower

This course focuses on the role of sport in past and contemporary societies. Consideration and discussion of sport as a microcosm of society, and a mirror of American life, will be conducted. Political, economic, military, and societal issues of sports participation are examined, as well as the impact of sport on the shaping of society and culture. Lecture, discussion, research and case assignments will comprise the instructional methodology.

**SPMG 3001 - Field Experience I, 1 Credit**

Prerequisite(s): SPMG 1123 with D or better

Level: Lower

This course encompasses a semester of supervised, hands-on experience working in the field of sport management. A minimum of 45 hours of work throughout the semester is required.

**SPMG 3013 - Sport Communication, 3 Credits**

Prerequisite(s): COMP 1503 with D or better and BUAD 2033 with D or better and SPMG 1123 with D or better

Level: Lower

This course is an introduction to the study of policies and procedures utilized in dealing with communication issues occurring within the sports industry, including print and electronic media, the internal and external constituencies to be served, and the development of specific forms of communication approaches. Heavy emphasis will be placed on the practical as opposed to the theoretical, as well as, a thorough understanding of the unique aspects of communication in sport.

**SPMG 4001 - Field Experience II, 1 Credit**

Prerequisite(s): SPMG 1123 with D or better and SPMG 3001 with D or better

Level: Lower

This course encompasses a semester of supervised, hands-on experience working in the field of sport management. A minimum of 45 hours of work throughout the semester is required. At the end of this internship the student will produce a four-page paper outlining their evaluation of their career future.

**SPMG 4003 - Sport Law, 3 Credits**

Prerequisite(s): SPMG 1123 with D or better and ( BUAD 3043 with D or better or BUAD 7023 with D or better )

Level: Lower

This course is designed to expose students to the legal environment within which sport management professionals function. It focuses on sport's relationship with government agencies (public law issues) as well as with other businesses, consumers, suppliers, etc., (private law issues). It is intended to better equip the sport business manager for decision making by exploring the legal issues involved in contracts, torts, business organizations, employment law, risk management, intellectual property law and Constitutional Law. Legislation specifically related to sport will be highlighted. A variety of specific problems for the business of sport, found within the law will be examined and analyzed through case briefs and studies, research projects and advocacy exercises. Students will have an opportunity to explore law-related topics of particular interest to themselves with oral presentations to the class.

**SPMG 4123 - Sport Facility Management, 3 Credits**

Prerequisite(s): SPMG 1123 with D or better

Level: Lower

This course investigates the elements, issues, and problems that shape the planning and management of sport facilities and events. Similarities and differences of facility types, reasons for development, terminology, types of events held, service contracts, financial operations, marketing and economic impacts are some of the issues covered. Building revenues from the sport facility, even services, and financing sources are all critical to the successful management of the multi-million dollar facilities that house today's major sport events. Course content will include lectures, guest speakers, and group discussions.

**SPMG 4900 - Directed Study, 1 to 6 Credits**

Level: Lower

A student may contract for one to six credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and

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student will confer regularly regarding the process of the study.

### **SPMG 5003 - Sport Business and Finance, 3 Credits**

Prerequisite(s): SPMG 1123 with D or better and ACCT 1124 with D or better

Level: Upper

This course is a focus on business topics as they relate to the fiscal and budgetary control of public and private sport organizations, leagues, and facilities. Topics include sources of funding and revenue, the implementation and use of an economic impact analysis, and a review of budgeting and financial statements.

### **SPMG 6003 - Sport Marketing, 3 Credits**

Prerequisite(s): MKTG 2073 with D or better

Level: Upper

This course is designed to be an examination of the unique nature of Sport Marketing. This course will examine the elements of the marketing mix from that perspective. Major topics include an overview of the sport market, the critical nature of market research and market segmentation, developing an understanding of the special nature of the sport product, pricing within sport marketing, the role of promotion in the sport market, and the theory of place" in sport. Students will be responsible for designing

### **SPMG 6013 - Licensing and Endorsements, 3 Credits**

Prerequisite(s): SPMG 1123 with D or better and SPMG 6003 with D or better

Level: Upper

This course covers the details involved in the development of a corporate licensing program, as well as the licensing of intellectual property from corporations. The student will be exposed to the necessary details of becoming a licensee or licensor. Product value, agreements, endorsements, royalties, enforcement, and legal issues will all be included.

### **SPMG 6023 - Event Promotion and Sales, 3 Credits**

Prerequisite(s): SPMG 1123 with D or better and SPMG 4123 with D or better

Level: Upper

This course is a comprehensive review of the skills and tasks required to successfully sell a sporting event to the consumer. Creating an effective sales culture, examining incentives for sport consumers, sales management and servicing, and the role of technology in sport promotion and sales are included. Additionally, this course explores sales training, the art of ticket sales, customer retention, branding, and sales risk management.

### **SPMG 6033 - Sponsorship, 3 Credits**

Prerequisite(s): SPMG 1123 with D or better and SPMG 6003 with D or better

Level: Upper

This course is a study of corporate sponsorships. Topics will include acquisition, service, sponsor and property objectives, rights, negotiations, sponsorship evaluations, contracts, proposals, and presentations.

### **SPMG 7001 - Pre-Internship Seminar, 1 Credit**

Prerequisite(s): SPMG 1123 with D or better

Level: Upper

This course is a focus on the development, analysis, and pursuit of internship and career goals. Emphasis is placed on the development of a professional portfolio, including cover letters, resumes, and basic interviewing techniques. Related issues, professional ethics, and etiquette will be explored.

### **SPMG 7023 - Strategic Mgmt in Sport Organtn, 3 Credits**

Prerequisite(s): SPMG 1123 with D or better and BUAD 3153 with D or better

Level: Upper

This course is a study of the administrative structure of sport organizations including those operating at a local, national, and international level. Emphasis will be placed on existing structures and how best to function within each to accomplish objectives.

### **SPMG 8112 - Internship, 12 Credits**

Prerequisite(s): SPMG 7001 with D or better

Level: Upper

This course is a work experience designed to assist the student in making the transition from the classroom to a segment of the sport management field. The internship permits a degree of independence and an element of learning that is not possible in a conventional classroom.



The intent of the internship is to provide each student with an experiential learning opportunity as a pre-professional in sport management. Students will complete supervised field work in a sport management segment, that segment to be determined mutually by the Internship Coordinator and the student. Each student will have a planned program of educational objectives approved by the student, Site Supervisor, and Internship Coordinator. A written paper, and a public, oral presentation, along with a journal of work activities and experiences, will be required. The final grade will be determined by the Internship Coordinator and the Site Supervisor. Approval by the Internship Coordinator is required for registration.

**TECHNOLOGY MANAGEMENT****TMGT 5001 - Professional Business Seminar, 1 Credit**

Level: Upper

This course helps students transition from college to their professional career. General topics such as managing self (including time and stress), professional communications, effective meeting management, and internship preparation will be presented to aid the students' success in their professional career. Specific discipline-focused sessions will also be included. Students will prepare a professional portfolio throughout the course.

**TMGT 5900 - Directed Study, 1 to 9 Credits**

Level: Upper

A student may contract for one to nine credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

**TMGT 7003 - Managing Technology Innovation, 3 Credits**

Prerequisite(s): TMGT 7153 with D or better or BUAD 3153 with D or better

Level: Upper

This course is an application of theoretical approaches to technology management and innovation. Major concepts, tools, and processes will be explored through lecture, readings, team activities, and case study applications. Major topics include technology innovation, the assessment of technology and the importance of technology forecasts. Students will learn how to manage innovation strategy, technological evolution, and organizational context for technology management. Additional topics will also include strategic actions required by business, developing a firm's organizational innovation capabilities, creating and implementing a development strategy, new product development, and challenges to managing innovation.

**TMGT 7153 - Principles of Management, 3 Credits**

Level: Upper

This course deals with understanding management concepts and functions of encouraging employee's enthusiasm and creativity; finding shared vision, norms, and values, sharing information and power; and encouraging teamwork and participation. The concepts of planning, organizing, leading, and controlling are explored to show how these basic principles can be used to create a healthy and thriving environment in today's global environment of business and technology.

**TMGT 8112 - Tech Management Internship, 12 Credits**

Level: Upper

This internship is designed to assist the student in making the transition from the classroom to industry. This integration of work allows a degree of independence and an element of learning that is not possible in a conventional classroom. The intent of the internship is to provide each student with an experiential learning opportunity in a management situation as a pre-professional supervisor or manager. Students will complete supervised field work in a selected business, industry, government or educational setting. Students carry out a planned program of education experiences under the direct supervision of an owner, manager or supervisor in their technical field or professional area. The interns will also be supervised by a faculty member who serves as Internship Coordinator. Written and oral reports, along with a journal of work activities and experiences, will be required. Evaluation will be based on the quality of experiences gained from the internship and student work performance.

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### VETERINARY TECHNOLOGY

#### **VETS 1203 - Intro to Veterinary Technology, 3 Credits**

Level: Lower

The course introduces the student to the terminology and specialization of the Veterinary Technology Curriculum. The nature of professional and ethical practices will be explored. Breeds and strains of domesticated animals will be studied and the student will be introduced to the basic concepts of animal behavior. The nature and form of medicines and the calculation of dose and dosages will be studied. The small animal handling laboratories will be held on site using animals from the local SPCA and Humane Society. A kennel assignment will be performed as a required part of the class.

#### **VETS 1214 - Anatomy & Physiology of Large, 4 Credits**

Level: Lower

Course Attributes: Liberal Arts and Science

This course is an organ systems approach to the study of anatomy and physiology using large animal species as the primary model. The course provides a functional integration of basic science and clinical information as it relates to the normal healthy animal in an integrated lecture and laboratory approach. Prosected large animal specimen both fresh and preserved, as well as skeletons and models will be utilized in the laboratory to allow applied reinforcement of concepts presented in the lecture. Histologic slides, kodachromes and radiographs will be utilized to enhance organ recognition through multiple formats and give the student a better understanding of organ function. The students will explore in greater depth and detail the course materials through questions and discussions fostered by the development of group Power Point presentations on topics that are related to the organ systems studied.

#### **VETS 2013 - Pathophysiology of An Diseases, 3 Credits**

Prerequisite(s): VETS 1203 with C or better and VETS 2014 with C or better

Level: Lower

Pathophysiology of Animal Disease is a course which provides the student with the understanding of basic science and clinical information as it relates to health and the process of disease in companion animals. It will utilize the body systems approach.

#### **VETS 2014 - Anat & Phys of Sm Animals, 4 Credits**

Prerequisite(s): VETS 1214 with D or better and VETS 1203 with C or better

Level: Lower

Course Attributes: Liberal Arts and Science

Anatomy and Physiology of small animals is a continuation of the study of anatomy and physiology which began using the organ system in VETS 1214 Large Animal Anatomy and Physiology. This course uses both companion and laboratory animals as the models on which we complete the discussion of the normal anatomy and physiologic function of animals. The course provides a functional integration of basic science and clinical information as it relates to the healthy animal in an integrated lecture and laboratory approach. Histological slides, kodachromes, and radiographs will also be utilized to enhance organ recognition and understanding of organ function. The students will explore in greater depth and detail the course materials through questions and discussions fostered by the development of group Power Point presentations on topics that are related to organ system studied.

#### **VETS 3003 - Animal Health Care, 3 Credits**

Prerequisite(s): VETS 1203 with D or better and VETS 1214 with D or better

Level: Lower

This course is designed to give first year students intensive animal handling skills and familiarity with basic procedures such as injections, venipuncture, bandaging, and dosage and fluid therapy calculations. Dentistry prophylaxis, recognition of dental abnormalities, and charting using both anatomic and Triadan systems will also be covered thoroughly. Students will also go on regular visits to a local Humane Society to perform technician-related duties.

#### **VETS 3004 - Anesthesia & Surgical Nursing, 4 Credits**

Prerequisite(s): VETS 2014 with C or better and VETS 3003 with C or better and VETS 3023

with C or better

Level: Lower

This course is designed to prepare the second year Veterinary Technology student to become the individual who can induce, maintain and recover small animal surgical patients. The student will also prepare the animals for surgery and assist in the surgical procedures. Upon course completion, the student will possess an understanding of all procedures done in vet practice with anesthesia and surgical nursing.

**VETS 3013 - Animal Parasitology, 3 Credits**

Prerequisite(s): VETS 1214 with D or better and VETS 1203 with C or better

Level: Lower

Parasitology is a multidisciplinary approach to the study of internal and external parasites of companion, exotic and farm animals. This course will integrate the student's knowledge of anatomy and pharmacology while providing the student the opportunity to understand life cycles, diagnostic protocol, control and treatment of the most common internal and external parasites. The course will also develop the students' understanding of how to appropriately provide both verbal and written communications for the client concerning management, prevention and potential zoonosis of the common parasites. The laboratory will emphasize the common techniques used to identify the parasites of companion, laboratory and farm animals.

**VETS 3023 - Radiography, 3 Credits**

Prerequisite(s): VETS 2014 with D or better

Level: Lower

In this course students will examine body systems using radiographic and ultrasound procedures as tools in the evaluation of animals for the diagnosis and prognosis of numerous traumas, diseases and illnesses. The course integrates the production of the radiograph and its clinical use as it relates to the evaluation of healthy and ill animals. In the laboratory, students will utilize animal models, inanimate objects and living animals to perfect their understanding of patient positioning, radiographic exposures and film developing techniques. Emphasis is placed on safely producing diagnostic quality radiographs using both conventional and digital radiographic techniques, as well as providing the basic skills in the set up and operation of an ultrasound unit.

**VETS 3024 - Clinical Laboratory Techniques, 4 Credits**

Prerequisite(s): VETS 2014 with C or better and BIOL 5254 with C or better or VETS 3012 with D or better \*

Level: Lower

This course introduces laboratory techniques performed in veterinary offices and clinics. Examination and testing of blood, feces, urine, and exudates are performed for diagnostic and prognostic purposes. Lectures deal with testing theories and relevance to animal health and disease. Laboratories develop skills necessary to maintain a safe laboratory working environment, institute quality control programs, collect, process, store, and transport clinical biological specimens. Major emphasis of the course is development of skills necessary to operate and maintain clinical analyzers, accurately perform laboratory tests, interpret, and report laboratory results on clinical specimens.

**VETS 3204 - Farm Animal Management, 4 Credits**

Level: Lower

This course is designed to provide the student insight into the behavior, care and management of farm animals. Dairy cattle, horses, sheep, swine, goats and other animals will be discussed. Emphasis will be placed on the practical aspects of veterinary nursing such as proper handling, restraint, evaluation, medication, treatment, and examination procedures that apply to farm animal species. Characteristics of the major breeds, terminology, disease control measures, housing, and basic management practices will also be covered.

**VETS 4002 - Advanced Animal Health Care, 2 Credits**

Prerequisite(s): VETS 3003 with D or better

Level: Upper

This course will serve two functions. The first is to introduce concepts in veterinary critical care and advanced medical and surgical cases including advanced diagnostics, treatment options, and long term and follow-up animal care. The second is to serve as both a review of classroom material provided throughout the Veterinary Technology curriculum and as a

## **COURSE DESCRIPTIONS**

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preparation for actual cases and client communication requirements in a veterinary practice.

### **VETS 4103 - Laboratory Animal and Exotics, 3 Credits**

Prerequisite(s): VETS 1214 with D or better and VETS 1203 with C or better

Level: Lower

This course is designed to provide the student with basic knowledge and understanding of research facilities and their function. Students will be instructed in the care and handling of small animals used in the research laboratory. Emphasis will be placed on species differences, housing requirements, nutrition, reproduction, health, sanitation, and laboratory techniques applied in animal research and pharmaceutical facilities. Animal handling, observation and management time will be provided during the laboratory as well as during assigned vivarium duty. In addition, an exotic animal section has been added to familiarize students with the care and identification of common exotic species. (Exotics in this case will not include dogs or cats or species commonly found on farms.)

### **VETS 4202 - Small Animal Nutrition, 2 Credits**

Prerequisite(s): VETS 1203 with C or better

Level: Lower

This is an introductory course for students accepted in the veterinary technology program, providing identification and function of nutrients, understanding pet food labels, and applications for wellness, life stage, and therapeutic nutrition (prescription food) for dogs and cats. The course will utilize an interactive Internet connection in the classroom.

### **VETS 4303 - Pharmacology for Veterinary Tech, 3 Credits**

Prerequisite(s): VETS 2013 with D or better and VETS 2014 with D or better

Level: Lower

This course will review and consolidate information on pharmacology that is touched upon in other Veterinary Technology Courses and add additional topics in pharmacology to provide the student with a comprehensive and organized overview of veterinary pharmacology.

### **VETS 4900 - Directed Study, 1 to 4 Credits**

Level: Lower

A student may contract for one to four credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

## **WELDING**

### **WELD 1104 - INTRO SHIELDED METAL ARC WELDG, 4 CREDITS**

Level: Lower

This course provides the student with an introduction to shielded metal arc welding, welding safety and power sources. Through hands-on technical training, the student will develop the skills necessary to make quality fillet welds on mild steel using the shielded metal arc welding process in all positions and on varying plate thickness.

### **WELD 1204 - SMAW I, Carbon Arc Cutting & Goug, 4 Credits**

Level: Lower

This course provides the student with a thorough technical understanding of shielded metal arc welding (SMAW), carbon arc cutting, welding and cutting safety, power sources, and electrodes. Through hands-on technical training, the student will develop skills necessary to make quality groove welds on mild steel, in all positions and on varying plate thickness. Carbon arc skills will include cutting and gouging of mild steel.

### **WELD 1723 - Welders Calculations I, 3 Credits**

Level: Lower

Basic mathematical functions used by the welder in the performance of their duties will be the subject of this course. Mathematical operations such as manipulation of fractions, decimals and unilaterally converting between the two and into the metric measurement system along with calculating perimeter, volumes, weight and bend calculations will be taught in this course. This mathematics course will be trade related and will focus on the math needed by the welder to perform their required tasks. All of the math topics taught in this course are trade related. This course is designed to meet the daily needs of welders. This

course is not intended for a general math audience.

**WELD 1724 - Gas Wldng/Cutng & Plasma Cutng, 4 Credits**

Level: Lower

This course is designed to teach the student the fundamental skills of oxy-fuel and plasma processes used in industry. Major topics include principles of operation, component identification, equipment set up, minor repairs, process variables, and manual and automatic performance exercises. Laboratory exercises emphasize technique and skill development.

**WELD 1728 - ArcWldng, Crbn Arc Ctnng Gaugng, 8 Credits**

Level: Lower

This course provides the student with a thorough technical understanding of shielded metal arc welding, carbon arc cutting, welding and cutting safety, power sources, and electrodes. Hands-on technical training will develop skills necessary to make quality arc welds on mild steel, in all positions and on varying plate thickness. Carbon arc skills will include cutting, gouging, and weld washing of mild steel.

**WELD 1733 - Weld Mtlrgy,Blpnt Rdng,Insp,Ts, 3 Credits**

Level: Lower

This course provides the student with a thorough technical understanding of blueprint reading for welders, and welding trades, symbol interpretation and application. The welding symbol and its meaning will be stressed through-out the course. Students will also learn methods of inspection, and practical application and interpretation of welding code.

**WELD 2715 - Shld Mtl Arc & Flx Crd Arc Wld, 5 Credits**

Level: Lower

This course is designed to provide instruction on those welding processes used in industry that are in high demand including flux cored arc welding and shielded metal arc welding. All processes, positions, and joint types studied will be in accordance with American Welding Society specifications. Students will be active in the American Welding Society.

**WELD 2725 - Gas Metal Arc Welding, 5 Credits**

Level: Lower

This course is designed to provide instruction on those welding processes used in industry that are in high demand including flux cored arc welding and shielded metal arc welding. All processes, positions, and joint types studied will be in accordance with American Welding Society specifications. Students will be active in the American Welding Society.

**WELD 2733 - Tolerancing & Working Drawings, 3 Credits**

Level: Lower

This course is designed for the welding student to understand the typical working drawing and any tolerances that may apply. These tolerances include unilateral, bilateral and geometric tolerances. The importance of accuracy and proper orientation of weldments will be stressed. This application will address all possible tolerancing and drawing applications the student will need to be effective as an industrial welder.

**WELD 2735 - Gas Tungsten Arc Weldng I, 5 Credits**

Level: Lower

This course provides the student with a thorough technical understanding of gas tungsten arc welding, welding safety, arc characteristics and welder certification. Hands-on technical training will develop skills necessary to make quality gas tungsten arc welds on mild steel, stainless steel, and aluminum using both direct and alternating current. Certification documentation for the student will be performed for all welding processes with special attention placed on code conformance and welding procedure development.

**WELD 3005 - SMAW II, Codes/ Insp Basic CNC, 5 Credits**

Level: Lower

This course covers safety standards, CNC machine set-up and operation, programming, theory, practice and performance of Shielded Metal Arc Welding (SMAW II). Students will learn and apply OSHA standards and correct CNC machine operation. CNC programming and SMAW II theory will also be covered. Students will be performing a variety of fillet and groove welds. All position qualification testing will prepare students for welder certification testing.

**WELD 3015 - GMAW II, FCAW II, 5 Credits**

Level: Lower

This course will cover the practice and proper use of protective clothing, equipment, and hand

## COURSE DESCRIPTIONS

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tools for the safe use of constant voltage welding equipment. Students will learn to work with different shielding gas mixtures, make adjustments and repairs to equipment according to manufacturer's recommendations. Proper set up, operation and theory will qualify the student for certification in gas metal arc welding of steel, stainless and aluminum in the short arc, spray and globular modes of metal transfer. Qualification testing will also be performed in outer shield and inner shield flux cored arc welding.

### **WELD 3025 - GTAW II Comp of Materials, 5 Credits**

Level: Lower

Students will learn setup and operating procedures, gas cylinder handling, flow meter and torch operations for welding aluminum, carbon and stainless steel pipe, tube and plate. The course will also cover the various methods of testing and inspection of welds. All position qualification testing will prepare students for welder certification testing.

### **WELD 3813 - Metlgy, Code, Cert, Insp & Tst, 3 Credits**

Level: Lower

This course will cover the principles related to the welding metallurgy, the properties of metals, and the residual stress and distortion caused by the welding process. Locate the essential information for codes and standards pertaining to the industry and work assignments for the materials used. Students will be able to perform inspections of cut surfaces of prepared metals (pre-welding) and inspect, as well as test welds during and post welding.

### **WELD 4013 - Senior Project, 3 Credits**

Level: Lower

This course is designed as a capstone project to verify a student's ability in all aspects of welding. The student will be required to identify a need for a new product or improvement on an existing product. After identification, the completion of the project will occur with minimal instructor guidance. This will allow the student to demonstrate their ability to perform independently. Upon completion, the student will demonstrate the functionality of their project in the form of a formal presentation. This will be a functional model of the student's own design.

### **WELD 4425 - GMAW III, FCAW III, SAW, 5 Credits**

Level: Lower

This course will involve the safety inspections of the MIG welding equipment and its accessories. Student will be capable of making minor repairs to this equipment and accessories. This will also include the changing of wire electrodes and cable liners. Students will learn the troubleshooting of welding equipment problems, how to recognize them, and the correct procedures in the use of the equipment. As before, setup and safe operation would be taught for both short circuit welding and for the pulsed spray transfer methods of welding. Students will perform welds on both carbon steel pipe and aluminum pipe. Using flux cored electrode, the student will be instructed in the use of self-shielding and gas shielding methods of filler transfer. Students will learn each method of welding as well as combinations of each.

### **WELD 4435 - SMAW III, GTAW III, 5 Credits**

Level: Lower

This course involves the safety inspections of welding equipment and accessories. Student will be able to make external repairs to the equipment and accessories. Setup the components and accessories for a complete shielded metal arc welding system. Setup and operate the SMAW equipment for alloy pipe. Execute corrective actions to repair surface flaws on welds and base metals. Perform an unlimited thickness performance qualification test on carbon steel pipe. Perform a limited thickness performance qualification test on carbon steel and 300 series stainless steel pipe using stainless steel electrodes. Refinement will be made to student capabilities in SMAW, GTAW, and GMAW using various materials. Pipe welding using a variety of processes will be stressed. All instruction shall lead toward student certification for Level II AWS certification.

**WELD 4445 - Welding Fabrication, 5 Credits**

Level: Lower

This course will be conducted as though the student were employed in an actual work environment. The student will perform all necessary work in the fabrication of various parts. Safe and proper set up and use of appropriate equipment for various applications will be expected. Along with the setup and use of equipment, the student will be required to generate and apply weld process sheets and inspect each weld using industrially accepted inspection processes. The student will be observed in performing various duties common in industry today, as well as applications of any certifications, codes, and standards that must be met for qualifications. The student must also interpret destructive and non-destructive test results, as well as perform bend, penetrant and magnetic particle testing. They will perform visual examination and complete inspection records and reports.

**WELD 4900 - Directed Study, 1 to 5 Credits**

Level: Lower

A student may contract for one to five credit hours of independent study through an arrangement with an instructor who agrees to direct such a study. The student will submit a plan acceptable to the instructor and to the department chairperson. The instructor and student will confer regularly regarding the process of the study.

## **President's Council**

**VALERIE NIXON** (1987) - Interim President

BS - SUNY Fredonia  
MPS - Alfred University  
SUNY Chancellor's Award for Excellence in Professional Service, 1994-95

**CRAIG R. CLARK** (1989) - Interim Vice President for Academic Affairs

AS - Jamestown Community College  
BS - University of Colorado  
MS - North Carolina State University

**TAMMY B. CONRAD** (2004) - Assistant to the President

Olean Business Institute

**JULIAN DAUTREMONT-SMITH** (2012) - Chief Sustainability Officer

BA - Lewis & Clark College  
MBA - University of Michigan  
MS - University of Michigan

**DEBORAH GOODRICH** (1978) - Interim Vice President for Administration and Enrollment

AAS - Erie Community College  
BS - University at Buffalo  
MS - Buffalo State College  
New York State/United University Professions Excellence Award, 1991  
SUNY Chancellor's Award for Excellence in Professional Service, 1993-94

**JAMES J. GRILLO** (1972) - Faculty Senate Chair & SUNY Distinguished Teaching Professor, Business

BS, MS - Alfred University  
SUNY Chancellor's Award for Excellence in Professional Service, 1979-80

**DEBRA A. ROOT** (2000) - Senior Director of Marketing and Communications

AAS, BFA - Rochester Institute of Technology  
MPS - Alfred University

**GREG SAMMONS** (1996) - Vice President for Student Affairs

AAS - Finger Lakes Community College  
BS - Houghton College  
MSC - Norwich University  
SUNY Chancellor's Award for Excellence in Professional Service, 2011-12

**DR. TERRY W. TUCKER** (2010) - Dean of the School of Arts and Sciences

BA - University of Pennsylvania  
MEd - Pennsylvania State University  
PhD - Cornell University

**DR. DEREK WESLEY** (2011) - Vice President Institutional Advancement

BA - UMass Amherst  
MEd, MA - Providence College  
EdD - Johnson & Wales University

**DR. JOHN C. WILLIAMS** (2002) - Dean of the School of Architecture, Management, and Engineering Technology

BS, MS, PhD - Clarkson University

## **College Faculty and Staff**

### **SUNY DISTINGUISHED PROFESSORS**

**ROBERT J. ALBRECHT** (1967) - SUNY Distinguished Teaching Professor, English and Humanities

BA, MA - Alfred University  
MEd - University at Buffalo  
New York State/United University Professionals Excellence Award, 1990  
SUNY Chancellor's Award for Excellence in Teaching, 1997-98



**VICTORIA L. BOLTON** (1974) - SUNY Distinguished Teaching Professor, Agriculture and Veterinary Technology  
AS - SUNY College of Technology at Alfred  
BS, MT (ASCP) - SUNY Upstate Medical University  
MS - Alfred University  
SUNY Chancellor's Award for Excellence in Teaching, 1986-87

**LAWRENCE E. BURNS** (1968) - SUNY Distinguished Teaching Professor, Mathematics and Physics  
AAS - SUNY College of Technology at Alfred  
BS - Purdue University  
MS - University at Buffalo  
SUNY Chancellor's Award for Excellence in Teaching, 1995-96

**ANIKO V. CONSTANTINE** (1974) - SUNY Distinguished Teaching Professor, English and Humanities  
BA - Hartwick College  
MA, PhD - University of Illinois  
SUNY Chancellor's Award for Excellence in Teaching, 1979-80

**MICHELLE A. GREEN** (1984) - SUNY Distinguished Teaching Professor, Physical and Health Sciences  
AAS - SUNY College of Technology at Alfred  
BS - Daemen College  
MPS - Alfred University  
RHIA, CMA, CPC  
SUNY Chancellor's Award for Excellence in Teaching, 1999-00

**JAMES J. GRILLO** (1972) - SUNY Distinguished Teaching Professor, Business  
BS, MS - Alfred University  
SUNY Chancellor's Award for Excellence in Professional Service, 1979-80

**ROBERT E. REES** (1986) - SUNY Distinguished Service Professor, Mechanical and Electrical Engineering Technology  
AS - Community College of Allegheny County  
BSEE, MSEE - University of Pittsburgh  
PE - Pennsylvania, Vermont  
SUNY Chancellor's Award for Excellence in Teaching, 1991-92

**EDWARD G. TEZAK** (1998) - SUNY Distinguished Service Professor, Mechanical and Electrical Engineering Technology  
BS - U.S. Military Academy  
MS - UCLA  
PhD - VPI & SU  
PE - Virginia

## **FACULTY AND STAFF**

**ANWAR ABUBAKR** (2010) - Residence Hall Intern, Residential Life  
BS - SUNY College of Technology at Alfred

**ROBERT J. ALBRECHT** (1967) - SUNY Distinguished Teaching Professor, English and Humanities  
BA, MA - Alfred University  
MEd - University at Buffalo  
New York State/United University Professions Excellence Award, 1990  
SUNY Chancellor's Award for Excellence in Teaching, 1997-98

**JILL AMATI** (2012) - Assistant Professor, Social & Behavioral Sciences  
BA - University of Washington  
MA - Oregon State University  
MPA & PhD - Syracuse University

**MARK J. AMMAN** (1983) - Professor & Chair, Physical and Life Sciences  
BS - University of Pittsburgh  
MS - Penn State University

**MOLLY E. ANDRUS** (2008) - Senior Staff Assistant, Office of Communications  
BA - Plattsburgh State University

**COLLEEN H. ARGENTIERI** (1988) - Director of Alumni Affairs, Institutional Advancement  
AAS - SUNY College of Technology at Alfred

**TRAVIS ARMISON** (2011) - Instructional Support Assistant  
BT - SUNY Cobleskill

**DARRYL ARROYO** (2011) - Director of Athletics  
PhD - University of Connecticut

## COLLEGE FACULTY AND STAFF

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**MAJAHBEEN AZIZ**, MD (2011) - College Doctor

**KARLA M. BACK** (2004) - Professor, Business  
BA - University of Houston-University Park  
MA - University of Houston-Clear Lake  
PhD - Texas A&M University  
SUNY Chancellor's Award for Excellence in Teaching, 2012-13

**ANN BALDWIN** (2006) - Admissions Assistant  
BA - Wilmington College  
SUNY Chancellor's Award for Excellence in Professional Service, 2002-03

**THOMAS BARBER** (1997) - Systems Manager, Technology Services  
AS - SUNY College of Technology at Alfred  
BS - SUNY Institute of Technology at Utica/Rome

**ANDREW J. BAYUS** (1986) - Director of College Housing  
BS, MAEd - Edinboro University

**ERIC BEILER** (2012) - Instructional Support Assistant  
BS - Berea College

**WAYNE BENSLEY** (2007) - Associate Professor, Physical and Life Sciences  
BA - Syracuse University  
MSFS - University of Alabama at Birmingham

**JASON BERNAGOZZI** (2011) - Lecturer, Digital Media and Animation  
MFA - Alfred University

**U. MAX FRIEDRICH BESEMANN** (2002) - Lecturer, Civil Engineering Technology  
BA - University at Buffalo  
NYS Land Surveyor License

**KRISTOFER BIANCHI** (2012) - University Police Officer I  
BS - SUNY College at Oneonta

**LYNN BIANCUZZO** (2011) - Nurse I, Health and Wellness Services  
AAS, RN - SUNY College of Technology at Alfred

**M. WILLIAM BIGELOW** (2006) - Assistant Professor, Building Trades  
AAS - Pennsylvania College of Technology

**SCOTT BINGHAM** (2006) - University Police Officer II  
AAS - Finger Lakes Community College

**MELISSA BLAKE** (2005) - Assistant Professor, Business  
AAS, BBA - SUNY College of Technology at Alfred  
MBA - SUNY Institute of Technology at Utica-Rome

**KATHLEEN BLISS** (2001) - Assistant Professor, Agriculture and Veterinary Technology  
AAS - SUNY College of Technology at Alfred  
AS, LVT, NYS - Medaille College  
BS - Purdue University  
MALS - Excelsior College

**JAMES BOARDMAN** (2004) - Assistant Professor and Chair, Computer and Information Technology  
BS - Cornell University  
MS - University of Southern Mississippi

**TIMOTHY BOCCHI** (2005) - Assistant Professor, Mathematics and Physics  
BS - Purchase College  
MPhil, PhD - CUNY Graduate Center

**VICTORIA L. BOLTON** (1974) - SUNY Distinguished Teaching Professor, Agriculture and Veterinary Technology  
AAS - SUNY College of Technology at Alfred  
BS, MT (ASCP) - SUNY Upstate Medical University  
MS - Alfred University  
SUNY Chancellor's Award for Excellence in Teaching, 1986-87

**REGINA BOYD** (1990) - Staff Associate, Athletics; Women's Basketball Coach  
AAS - Cayuga Community College  
BSE - SUNY Cortland  
MS - The College at Brockport

**MICHAEL P. BOYLE** (1999) - University Police Officer II  
AAS - Niagara County Community College

**TAMMY BRACKETT** (2008) - Assistant Professor and Chair, Digital Media and Animation  
BA, MFA - Alfred University

**JENNIFER BREMSER** (2011) - Assistant Professor, Social & Behavioral Sciences  
BA - SUNY Plattsburgh

**ROBERT E. BRETZIN** (1991) - Assistant Professor, Drafting/CAD  
AOS - SUNY College of Technology at Alfred

**MATTHEW BROWN** (2011) - Residence Hall Intern, Residential Life  
Adv. Cert., EdM - University at Buffalo

**DENISE BROWNELL** (1991) - Assistant to Dining Director, Central Dining Hall, Auxiliary Campus  
Enterprises and Services  
AS - SUNY College of Technology at Alfred

**GLENN BRUBAKER** (2004) - Director of Facilities Services  
AOS - SUNY College of Technology at Alfred  
BPS - SUNY Empire State College  
Certified OSHA Outreach Trainer

**VICTORIA BRYANT** (2005) - Accountant, Business Affairs  
BS - Lockhaven State University  
MBA - St. Bonaventure University

**JANNA BUCKWALTER** (2012) - Director of Drama/Theater  
BA - Messiah College

**LEON S. BUCKWALTER** (2001) - Associate Professor, Research Foundation, Building Trades

**JAMES BUELL** (2004) - Associate Professor, Mathematics and Physics  
MS, PhD - University of Oklahoma

**DEBRA BURCH** (1998) - Associate Professor, Culinary Arts  
AOS - SUNY College of Technology at Alfred

**JOHN BURKE** (2012) - Assistant Professor, Computer and Information Technology  
MBA - Indiana University-Bloomington  
PhD - University of Illinois at Urbana-Champaign

**JOSEPH BURKE** (2010) - University Police Officer I  
AAS - Jamestown Community College

**DALE BURNS** (2000) - Senior Network Manager, Technology Services  
AAS, BS - SUNY College of Technology at Alfred

**LAWRENCE E. BURNS** (1968) - SUNY Distinguished Teaching Professor, Mathematics and Physics  
AAS - SUNY College of Technology at Alfred  
BS - Purdue University  
MS - University at Buffalo  
SUNY Chancellor's Award for Excellence in Teaching, 1995-96

**DAWN BUTTS** (2012) - Academic Advisement Assistant, The Learning Center  
BS - SUNY College at Brockport  
MS - Alfred University

**MICHAEL CABA** (2002) - Senior Staff Assistant, Athletics  
BS - Georgetown College

**MICK CABA** (2000) - Senior Staff Assistant, Athletics; Football Coach  
BA - Georgetown College  
MA - Western Michigan University

**KAREN CANNE** (1982) - Director of Dining Services, Auxiliary Campus Enterprises and Services  
BS - SUNY Oneonta

## COLLEGE FACULTY AND STAFF

---

**MARLEE CANNON** (2001) - Coordinator of Tutoring & Student Disability Services  
BA, MA - Alfred University

**DAVID CARLI** (2007) - Associate Professor, Architecture and Design  
AAS - Genesee Community College  
BS, MFA - University at Buffalo

**RICHARD T. CARLO** (1980) - Professor, Architecture and Design  
AAS - SUNY College of Technology at Alfred  
BPSArch, MArch - University at Buffalo  
Registered Architect, New York  
SUNY Chancellor's Award for Excellence in Teaching, 1989-90

**JOY M. CARLSON** (1988) - Professor, Architecture and Design  
BArch, MSArch - The Pennsylvania State University  
Registered Architect - New York, Pennsylvania  
SUNY Chancellor's Award for Excellence in Teaching, 2004-05

**MICHAEL CASE** (2002) - Director, Technology Services  
AAS - SUNY College of Technology at Alfred  
BS - Rochester Institute of Technology

**DONALD W. CATINO** (1985) - Professor, Automotive Trades  
AOS - SUNY College of Technology at Alfred  
ASE Master Certification, Auto

**MAUREEN CAVANAUGH** (2006) - Instructional Support Assistant, Nursing  
AAS - SUNY College of Technology at Alfred  
LPN

**BENJAMIN CAWLEY** (2011) - Web Programmer, Technology Services  
AAS - Devry University

**MELVIN C. CHAMBLISS** (1999) - Associate Professor, Agriculture and Veterinary Technology  
BS, DVM - Tuskegee University

**PETER CHATAIN** (2001) - Instructional Support Technician, College Farm  
AS - SUNY Cobleskill

**AUSTIN CHENEY** (2006) - Associate Professor, Mechanical & Electrical Engineering Technology  
BME, MS - University of Dayton  
PhD - Vanderbilt University  
Registered Professional Engineer - Ohio  
Certified Manufacturing Engineer

**DEBORAH CLAIRE** (1989) - Senior Programmer/Analyst, Technology Services  
BA - SUNY Genesee  
SUNY Chancellor's Award for Excellence in Professional Service, 2009-10

**GLEN CLINE** (2004) - Director, Procurement and Payment Services  
AS, BS - SUNY Empire State College

**MICHAEL COBB** (1979) - Lecturer & Chair, Social and Behavioral Sciences  
AA - Northern Virginia Community College  
BA - George Mason University  
MA - Penn State University

**BRENT COBIN** (1998) - Senior Staff Assistant, Document Center

**TIMOTHY COCHRAN** (1999) - Professor, Mechanical & Electrical Engineering Technology  
MS - University of Wisconsin - Madison

**CINDY COLEMAN** (2008) - Assistant Professor, Nursing  
AOS - SUNY College of Technology at Alfred  
BSN - SUNY Brockport  
MS - SUNY Buffalo

**MICHAEL A. COLOMAIO** (2002) - Lecturer, Social and Behavioral Sciences  
BA - SUNY Genesee  
MS - Alfred University

**DENNIS E. CONRAD** (2006) - Instructor, Automotive Trades  
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**ANIKO V. CONSTANTINE** (1974) - SUNY Distinguished Teaching Professor, English and Humanities  
BA - Hartwick College  
MA, PhD - University of Illinois  
SUNY Chancellor's Award for Excellence in Teaching, 1979-80

**GORDON COOK** - Instructional Support Assistant, Dean's Office, School of Applied Technology

**CASEY COWBURN** (2012) - ASOP Coordinator, The Learning Center  
BA, MED - University of Massachusetts-Lowell

**MARK CRAGG** (2006) - Instructional Support Assistant, College Farm  
AAS - SUNY College of Technology at Alfred

**JASON CRONIN** (2012) - Senior Staff Assistant, Athletics, Head Baseball Coach  
MS - Ithaca College

**ROBERT CURRY** (2004) - Associate Professor & Chair, English and Humanities  
BA - San Francisco State University  
MA - Chico State University  
PhD - University of Connecticut

**RHONDA CUSHMAN** (2010) - Assistant Professor, Nursing  
BA - SUNY Fredonia

**MARK D'ARCY** (2004) - Assistant Professor, Mathematics and Physics  
BA, MEd - Alfred University  
MS - Clemson University

**JOSEPH DAMRATH** (2003) - Associate Professor, Business  
BA - LeMoyne College  
MA - Duquesne University  
JD - University of Toledo  
SUNY Chancellor's Award for Excellence in Teaching, 2010-11

**JULIAN DAUTREMONT-SMITH** (2012) - Chief Sustainability Officer, Office of the President  
BA - Lewis & Clark College  
MBA, MS - University of Michigan - Ann Arbor

**MARY LOUISE DAVIS** (2011) - Academic Advisement Assistant, EOP  
BA - University at Buffalo  
MSW - University at Buffalo

**DANIEL DAVISON** (2006) - Instructional Support Associate, Automotive Trades

**WILLIAM DEAN** (2000) - Professor, Architecture and Design  
AAS - SUNY College of Technology at Alfred  
BPS, MArch - University at Buffalo  
Registered Architect - New York

**BRIAN J. DECKER** (2009) - Instructor, Culinary Arts  
AOS - SUNY College of Technology at Alfred

**STEVE DICKERSON** (1997) - Assistant Professor, Computerized Design and Manufacturing

**EUGENE DOORLEY** (2003) - Staff Associate, Athletics, Fitness Center Manager/Volleyball Coach  
AS - SUNY College of Technology at Alfred  
BS - SUNY Cortland  
NYS Teaching Certificate - St. Bonaventure University

**WENDY DRESSER-RECKTENWALD** (2000) - Senior Director, Center for Community Education & Training and Human Resources  
BA - SUNY Geneseo  
MS - St. John Fisher College

**NANCY DRISCOLL** (2000) - Assistant Director, Admissions  
BA, MS - Buffalo State College

**ROGER A. DRUMM** (1984) - Associate Professor, Building Trades  
AOS - SUNY College of Technology at Alfred

## COLLEGE FACULTY AND STAFF

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**JOEL DUDLEY** (2006) - Lead Programmer/Analyst, Technology Services  
AAS, BTech - SUNY College of Technology at Alfred

**STEPHEN DUDLEY** (2011) Programmer/Analyst, Technology Services  
MBA - Canisius College

**LAURIE L. DUNN** (2009) - Assistant Professor, Nursing  
MSN - Daemen College

**KATHLEEN C. EBERT** (1993) - Professor & Chair, Mathematics and Physics  
AA - SUNY College of Technology at Alfred  
BA - Alfred University  
MA - University at Buffalo  
PhD - University at Buffalo

**TAMMY WOODS EDWARDS** (2003) - Senior Staff Assistant, Center for Community Education and Training  
AA - SUNY College of Technology at Alfred  
BA - Alfred University

**SHERINE EL HAG** (2012) Assistant Professor, Business  
MA, MBA, PHD - Claremont Graduate University

**NORMAN ELLIS** (2002) - Associate Professor, Building Trades  
AAS - Morrisville State College  
SUNY Chancellor's Award for Excellence in Teaching, 2011-12

**EVAN ENKE** (1998) - Assistant Professor, Computer and Information Technology  
BS, MPS - Alfred University  
SUNY Chancellor's Award for Excellence in Teaching, 2002-03

**CAROLINE FALCONE** (2012) - Admissions Assistant, Admissions  
MS - Alfred University

**DOROTHEA FITZSIMMONS** (2002) - Assistant Professor & Coordinator Animal Science, Agriculture and Veterinary Technology  
BS, DVM - Cornell University  
MS - University of Wisconsin

**JAMES FLEISCHMAN** (2002) - Assistant Professor, Automotive Trades  
AOS - SUNY College of Technology at Alfred  
Ford Master Certified  
ATTP Certified  
ASE Auto Certified

**GERALD FONG** (1993) - Professor, Physical and Life Sciences  
BSc - University of California at Berkeley  
MS, PhD - University of Michigan  
SUNY Research & Scholarship Award, 2005  
SUNY Chancellor's Award for Excellence in Teaching, 2005-06

**MICHAEL J. FOSTER** (1982) - Senior Staff Assistant, Facilities Services

**MICHAEL FOX** (2012) - Residence Hall Intern, Residential Life  
BA, MA - Shepherd University

**MICHELLE FRANCISCO** (1998) - Staff Associate, Business Affairs  
AAS - SUNY College of Technology at Alfred  
BA - St. Bonaventure University

**LOREN FULLER** (2011) - Financial Aid Assistant, Student Financial Services  
BA - Rice University  
MA - University of Connecticut

**RHEMA FULLER** (2011) - Assistant Professor, Sport Management  
PhD - University of Connecticut

**JOHN M. GARIPPA** (1994) - Associate Professor, Automotive Trades  
AOS - SUNY College of Technology at Alfred  
ASE Master Certification, Auto  
ASE Advance Level Certification  
ASE Alternative Fuels Certification

**KENNETH GEER** (1996) - Associate Professor, Building Trades  
AOS - SUNY College of Technology at Alfred

**KANDI GEIBEL** (1995) - Interim Director, Admissions  
AA - SUNY College of Technology at Alfred  
BA, MS - Alfred University  
SUNY Chancellor's Award for Excellence in Professional Service, 2006-07

**JAMES GERBEC** (1999) - Assistant Professor, Automotive Trades  
AOS - SUNY College of Technology at Alfred  
ASE Certification Auto Body

**SANDRA S. GERLING-YELLE** (1977) - Professor, Business  
AAS - SUNY College of Technology at Alfred  
BS - Nazareth College  
MS - University at Buffalo  
SUNY Chancellor's Award for Excellence in Teaching, 2004-05

**LAURA GIGLIO** (1987) - Director of Tutoring Services, The Learning Center  
AAS - SUNY College of Technology at Alfred  
BS, MPS-CSA - Alfred University

**JASON GILDNER** (2006) - Instructional Support Assistant, Instructional Technologies  
AAS - SUNY College of Technology at Alfred

**JANE GILLILAND** (2008) - Senior Director, Student Records and Financial Services  
BS - Alfred University

**RAY GLEASON** (2003) - Instructional Support Technician, School of Architecture, Management & Engineering Technology  
AAS - SUNY College of Technology at Alfred

**MARY GOLDEN** (2008) - Assistant Professor, Architecture and Design  
BA, MFA - University at Buffalo

**JEFFREY G. GOODRICH** (1982) - Senior Programmer/Analyst, Technology Services  
BA - SUNY Potsdam  
SUNY Chancellor's Award for Excellence in Professional Service, 2012-13

**JAMES L. GRAHAM** (1994) - Instructional Support Associate, Computerized Design and Manufacturing  
AOS - SUNY College of Technology at Alfred

**GARTH M. GRANTIER** (1993) - Academic Adviser, The Learning Center  
BS, MS - Alfred University

**DANIELLE GREEN** (2011) - Instructor, Business Technology  
AAS - Alfred State College

**MICHELLE A. GREEN** (1984) - SUNY Distinguished Teaching Professor, Physical and Life Sciences  
AAS - SUNY College of Technology at Alfred  
BS - Daemen College  
MPS - Alfred University  
RHIA, FAHIMA, CPC  
SUNY Chancellor's Award for Excellence in Teaching, 1999-00

**JOSEPH GREENTHAL** (2010) - Controller, Business Affairs  
BBA - SUNY College of Technology at Alfred

**BARBARA J. GREIL** (1977) - Librarian, Hinkle Memorial Library  
BA - Carnegie-Mellon University  
MLS - Rutgers University  
SUNY Chancellor's Award for Excellence in Librarianship, 1998-99

**CASEY GROSS** (2000) - Staff Associate, Judicial Affairs  
BA - SUNY Fredonia

**SEAN M. HAGGERTY** (2010) - Assistant Professor, Automotive Trades  
AOS - SUNY College of Technology at Alfred

**DAVID G. HAGGSTROM** (1979) - Librarian, Director of Libraries  
BA - Hobart College  
MLS - University at Buffalo

**ROBERT HALEY** (2004) - Staff Associate, Facilities Services  
AAS - SUNY College of Technology at Alfred

## COLLEGE FACULTY AND STAFF

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**HOLLIE M. HALL** (2007) - Senior Director, Health and Wellness Services  
MA - Alfred University

**FRANK HAMMONDS** (2011) - Staff Assistant, Technology Services

**ROBERTA G. HANSEN** (1996) - Senior Staff Assistant, Document Center

**LISA HARMON** (2012) - Assistant Professor, Nursing  
BS - Pennsylvania State University  
MS - Saint Josephs College  
PhD - Walden University

**SCOTT HARMON** (2012) - Instructor, Building Trades

**ROBIN HARRINGTON** (1990) - Senior Financial Aid Adviser, Student Records and Financial Services  
BA - St. Bonaventure University

**TIMOTHY HAUBER** (2011) - Staff Assistant, Technology Services  
AAS - Corning Community College

**MATTHEW HELLER** (1996) - University Police Officer II  
AAS - Finger Lakes Community College  
BS - Houghton College

**JEFFREY B. HELLWIG** (1998) - Associate Professor, Computerized Design and Manufacturing  
Diploma in Machine Tool Technology - Rochester Institute of Technology

**HEINRICH HERMANN** (2012) - Professor & Chair, Architecture and Design  
M.Arch - Cornell University  
PhD - Harvard University

**TRICIA HERRITT** (1999) - Coordinator of International Programs  
BS - Toccoa Falls College  
MPS - Alliance Theological Seminary

**JONATHAN HILSHER** (2012) - Director, Office of Civic Engagement  
MS - Eastern University

**KATHLEEN HOBSON** (2011) - Residence Hall Director, Residential Life  
MA - University of Akron

**IAN HODKIN** (2012) - University Police Officer I  
AS - Jamestown Community College

**CHARLES HOLMES** (2005) - Laptop Technician, Technology Services  
AOS - SUNY College of Technology at Alfred

**ANNE HOLMOK** (2007) - Staff Assistant, Athletics  
BA - Alfred University

**STEPHANIE M. HOYER** (2006) - Senior Staff Assistant, Office of Communications  
AA - SUNY College of Technology at Alfred  
BA - Alfred University

**RUSSELL HUBER** (2011) - Staff Associate, Facilities Services  
BS - University of Virginia

**DAVID HUNT** (1997) - Associate Professor, Mechanical & Electrical Engineering Technology  
BS - SUNY College of Technology at Alfred  
MS - Alfred University

**JESSICA HUTCHINSON** (2010) - Lecturer, Agriculture and Veterinary Technology  
MS - University of Georgia

**GERALD IVES** (2007) - Staff Assistant, Student Engagement

**STEVEN JACOBI** (2007) - Instructor, Automotive Trades



**STEVEN R. JAKOBI** (1993) - Associate Professor, Physical and Life Sciences  
BS - University of Cincinnati  
MA - West Chester University  
PhD - West Virginia University  
HTL (ASCP) - University of Pennsylvania

**JAMES JERLA** (1985) - Associate Professor & Chair, Electrical Trades

**CAROL JOHN** (1998) - Assistant to the Vice President for Academic Affairs

**KENT JOHNSON** (1993) - Associate Professor & Chair, Automotive Trades  
ASE Master Certification, Auto  
ASE Truck Certification

**JEFFREY F. JOHNSTON** (1991) - Assistant Professor, Architecture and Design  
BArch - University of Notre Dame  
Licensed Architect, New York  
SUNY Chancellor's Award for Excellence in Faculty Service, 2004-05

**YOGENDRA B. JONCHHE** (1982) - Professor, Mechanical & Electrical Engineering Technology  
IntSc - Amrit Science College (Nepal)  
MSME - Friendship University (USSR)  
MSME - Syracuse University  
SUNY Chancellor's Award for Excellence in Teaching, 1993-94

**ROBERT JONES** (2010) - Instructor, Building Trades  
BA - Mansfield University

**JERRY JUSIANIEC** (1999) - Senior Staff Assistant, Athletics; Men's Basketball Coach/Facilities and Equipment Manager  
BS - Elmira College

**MARK KANELIS** (2009) - Staff Assistant, Athletics  
MS - SUNY Cortland

**BRENT KELLEY** (1998) - Assistant Professor, Culinary Arts  
BSS - Buffalo State College

**KAREN KELLY** (2008) - Lecturer, Mathematics and Physics  
MA - Cornell University

**DAVID KENDALL** (2004) - Associate Professor, Mathematics and Physics  
BS - Lamar University  
MS - Rice University  
PhD - University of Massachusetts

**EDWARD KENNEY** (2007) - University Police Officer I  
AS - Monroe Community College

**DEBRA KERR** (2004) - Help Desk Coordinator, Technology Services  
AAS - SUNY College of Technology at Alfred

**NAWAZ M. KHAN** (2001) - Professor, Mechanical & Electrical Engineering Technology  
BSc - Punjab University (Pakistan)  
BSEE - University of Engineering (Pakistan)  
BS - Baluchistan University (Pakistan)  
MSEE - Michigan State University

**STEPHEN KIELAR** (2007) - Instructor, Electrical Trades  
AOS - SUNY College of Technology at Alfred

**WILLIAM A. LAUBERT** (1990) - Associate Professor, English and Humanities  
AA - East Central College  
BS - Southwest Baptist University  
MA - Central Missouri State University

**DAVID LAW** (1989) - Associate Professor, Computer and Information Technology  
AAS - Community College of the Air Force  
BS - SUNY Plattsburgh  
MS - Canisius College

**MATTHEW LAWRENCE** (2007) - Associate Professor, Mechanical & Electrical Engineering Technology  
PhD - Penn State University

## COLLEGE FACULTY AND STAFF

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**LEO LEJEUNE** (1978) - Manager, Transportation and Maintenance, Auxiliary Campus Enterprises and Services  
AS - SUNY College of Technology at Alfred

**KATHRYN LINK** (2008) - Assistant Professor, Physical and Life Sciences

**DAWN M. LINKE** (1980) - Instructional Support Specialist, Manager, Instructional Technologies  
BA - SUNY Fredonia

**TRACY LOCKE** (2006) - Associate Professor, Physical and Life Sciences  
AAS - Monroe Community College  
BPS - SUNY Institute of Technology at Utica/Rome  
MS - New School University  
RHIA

**CHRISTINA LOPER** (1991) - Manager, Cash Operations, Auxiliary Campus Enterprises and Services  
AOS - SUNY College of Technology at Alfred

**CYNTHIE LUEHMAN** (1985) - Professor, Nursing  
BS - Alfred University  
MS - University at Buffalo  
RN  
SUNY Chancellor's Award for Excellence in Teaching, 1994-95

**CORWIN MACKNEY** (2012) - University Police Officer I  
AA - SUNY College of Technology at Alfred

**KERA A. MARIOTTI** (2008) - Assistant Professor, Civil Engineering Technology  
BS - SUNY College of Technology at Alfred  
MGIS - Pennsylvania State University

**KATHRYN A. MARKEL** (1990) - Associate Director, Admissions  
AAS - SUNY College of Technology at Alfred  
BS - Nazareth College  
MS - SUNY Fredonia  
SUNY Chancellor's Award for Excellence in Professional Service, 2002-03

**JEFFREY K. MARSHALL** (1998) - Associate Professor & Chair, Civil Engineering Technology  
AAS - SUNY College of Technology at Alfred  
BSCE - University at Buffalo  
MBA - Rochester Institute of Technology  
PE - New York

**TRACEY MARTIN** (2003) - Instructional Support Technician, Agriculture and Veterinary Technology  
AAS, LVT - NYS - SUNY Delhi  
BS - SUNY Empire State College

**STEVEN J. MARTINELLI** (1991) - Professor, Computerized Design & Manufacturing  
AOS - SUNY College of Technology at Alfred  
BS - SUNY Empire State College  
ME - Pittsburgh State University  
SUNY Chancellor's Award for Excellence in Teaching, 2005-06

**MARYLOU MASSARA** (1993) - Nurse I (part time), Health and Wellness Services  
AAS - SUNY College of Technology at Alfred  
RN

**ERICA MATTESON** (2009) - Instructional Support Assistant, Physical and Life Sciences  
BPS - SUNY Institute of Technology at Utica/Rome  
RHIA

**DEBRA A. MAYES** (2000) - Computer Specialist, Technology Services  
AAS - Northern Virginia Community College  
Comptia A+ Certified Technician

**CALISTA A. MCBRIDE** (2002) - Professor, English and Humanities  
BA, MA - Kansas State University  
SUNY Chancellor's Award for Excellence in Teaching, 2006-07

**PETER MCCLAIN** (2005) - Administrative Coordinator, Business Affairs  
BA - Alfred University

**LISA MCCOOL** (2011) - Assistant Professor, Business  
PhD - Oakland City University

**SEAN MCDONOUGH** (1993) - General Manager, Campus Stores, Auxiliary Campus Enterprises and Services  
AS - SUNY College of Technology at Alfred  
BS - University at Buffalo

**MARTHA MCGEE** (2007) - Bursar, Student Records and Financial Services  
AAS - SUNY College of Technology at Alfred  
BS - Alfred University

**LUKE MCINTOSH** (2011) - Instructor, Automotive Trades  
AOS - SUNY College of Technology at Alfred

**CLIFFORD MCPEAK** (2008) - Associate Professor, Business  
BS, MEd - Miami University  
PhD - Ohio State University

**GEORGE J. MERRY** (2009) - Assistant Professor, Computerized Design and Manufacturing

**JASON MILLER** (2011) - Instructor, Building Trades  
AOS - SUNY College of Technology at Alfred

**RICHARD A. MITCHELL** (1985) - Professor, English and Humanities  
AA - Broome Community College  
BA, MA - SUNY Oswego  
PhD - University of Nevada, Reno

**TROY MOREHOUSE** (2011) - Residence Hall Intern, Residential Life  
MA - Lewis University

**TERRENCE MORGAN** (1980) - Professor, English and Humanities; Honors Program Coordinator  
BA - St. Bonaventure University  
MA - Gannon University

**GARY E. MOORE** (1978) - Staff Associate, Athletics; Track/Cross Country Coach, Coordinator of Intramurals  
AAS - SUNY College of Technology at Alfred  
BS - The College at Brockport  
MS - University of Southern Mississippi  
SUNY Chancellor's Award for Excellence in Professional Service, 2008-09

**YVONNE MORRIS** (2011) - Assistant Professor, Nursing  
MS - Roberts Wesleyan College

**ELAINE MORSMAN** (2002) - Director of Career Planning  
BA, MA - St. Bonaventure University

**THOMAS G. MURPHY** (1998) - Instructor, Building Trades  
Master Trainer, National Center for Construction Educational Research  
OSHA Outreach Safety Instructor  
Carpentry Instructor, National Center for Construction Education and Research

**MICHAEL T. MURRAY** (1990) - Manager, Friendly's & Taco Bell, Auxiliary Campus Enterprises and Services  
AS - SUNY College of Technology at Alfred

**JONATHAN MYERS** (2004) - Senior Staff Assistant, Technology Services  
AS - SUNY College of Technology at Alfred

**CHARLES V. NEAL** (1977) - Associate Vice President for Academic Affairs  
AAS - SUNY College of Technology at Alfred  
BS - University at Buffalo  
MBA - St. Bonaventure University  
SUNY Chancellor's Award for Excellence in Teaching, 2001-02

**ANDREW NELSON** (2000) - Instructional Support Assistant, Instructional Technologies  
AS - Massachusetts Communications College

**LAWRENCE NEUBERGER** (2002) - Associate Professor, Digital Media and Animation  
BFA - Kutztown University  
MFA - Rochester Institute of Technology

## COLLEGE FACULTY AND STAFF

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**RONALD S. NICHOLS** (1981) - Professor, Civil Engineering Technology  
BSCE, MSCE - University of New Hampshire  
PE - Kentucky

**BRON NORESTHEPORN** (2000) - Manager, Special Events Operation, Auxiliary Campus Enterprises and Services  
BS - Alfred University

**MALLORY NORTON** (2013) - Staff Assistant, Student Engagement  
BA - Syracuse University

**DANIEL B. NOYES** (1987) - Associate Professor, Electrical Trades  
AAS - Jamestown Community College  
AS - Community College of Air Force  
Certified National VUE Test Administrator; International Certified Electronic Technician  
SUNY Chancellor's Award for Excellence in Teaching, 1998-99

**SCOTT O'CONNOR** (2011) - Associate Professor, Computer and Information Technology  
BS, MS - Clarkson University

**CALVIN H. O'DELL** (1996) - Instructional Support Assistant, Outside Project Supervisor, Electrical Trades  
AOS, AOS - SUNY College of Technology at Alfred

**KIMBERLY OGORZALEK** (2003) - Computer Specialist, Technology Services  
AAS - SUNY College of Technology at Alfred  
BS - Rochester Institute of Technology

**REX OLSON** (2001) - Director of Counseling Services, Health and Wellness Services  
BA - University of California  
MA, MPhil, PhD - Syracuse University  
MA, PhD - Duquesne University

**JON OWEJAN** (2013) - Assistant Professor, Mechanical & Electrical Engineering Technology  
BS, MS - Rochester Institute of Technology

**EARL PACKARD** (2003) - Assistant Professor, Mathematics and Physics  
BS - Mansfield State College  
BSE - Mansfield University  
PhD - Tulane University

**JAIME L. PALMATIER** (2007) - Staff Assistant, Health and Wellness Services  
AAS - SUNY College of Technology at Alfred

**TERRY PALMITER** (1999) - Assistant Professor, Architecture and Design  
BArch - Virginia Polytechnic University  
MArch - University of Colorado

**LINDA PANTER** (1993) - Professor, Nursing  
AAS - SUNY College of Technology at Alfred  
BS - The College at Brockport  
MS - FNP - Binghamton University  
RN

**ALEXE PASK** (2012) - Assistant Athletic Trainer, Athletics  
BS, MS - Daemen College

**JEFFREY G. PATRONEK** (2008) - Instructor, Building Trades

**MARK PAYNE** (2007) - Assistant Professor, Building Trades

**SPENCER PEAVEY** (2006) - Senior Director of Student Engagement & Greek Life and New Orientation  
BA - University of Massachusetts at Lowell  
MSEd - St. Bonaventure University

**CONSTANCE PENNISI** (2000) - Instructor, Digital Media and Animation  
BFA - NYS College of Ceramics at Alfred University  
MSEd - Alfred University  
SUNY Chancellor's Award for Excellence in Scholarship and Creative Activities, 2006-07

**KRYSTAL PERLMAN** (2012) - Staff Assistant, Technology Services  
BTech - SUNY College of Technology at Alfred

**JACOB PERRY** (2013) - Instructor, Culinary Arts  
BS - Johnson & Wales University

**JOSEPH PETRICK** (2000) - Librarian, Hinkle Memorial Library  
BA - Hobart College  
MLS - Clarion University  
SUNY Chancellor's Award for Excellence in Librarianship, 2006-07

**MATTHEW PETTIS** (2012) - Instructor, Mechanical and Electrical Engineering Technology  
MEd - Grand Canyon University

**DAVID PHILLIPS** (2012) - Staff Assistant, Technology Services  
AOS - SUNY College of Technology at Alfred

**DOUGLAS J. PIERSON** (2009) - Assistant Professor, Agriculture and Veterinary Technology  
DVM - University of Pennsylvania

**TIMOTHY J. PIOTROWSKI** (2008) - Assistant Professor, Civil Engineering Technology  
MS - University at Buffalo

**REGINA POLLARD** (1997) - Professor, Social and Behavioral Sciences  
BS - Juniata College  
MS - Drake University  
SUNY Chancellor's Award for Excellence in Teaching, 2000-01

**NICHOLE PRESTON** (2006) - Instructional Support Assistant, Physical and Life Sciences  
AAS - SUNY College of Technology at Alfred

**MICHAEL J. PUTNAM** (1998) - Professor, Physical and Life Sciences  
AAS - SUNY College of Technology at Alfred  
BS, MS - University at Buffalo  
SUNY Chancellor's Award for Excellence in Teaching, 2003-04

**STEVEN J. QUAGLIATO** (1993) - Associate Professor, Mathematics and Physics  
BS - University of Massachusetts  
MS - University of Rhode Island

**BRIAN QUINN** (2011) - Assistant Professor, English & Humanities  
MA, DA - St. Johns University

**CARL H. RAHR Jr.** (1998) - Assistant Director, Senior Programmer/Analyst, Technology Services  
AAS - SUNY College of Technology at Alfred  
BA - SUNY Geneseo  
SUNY Chancellor's Award for Excellence in Professional Service, 2004-05

**ALLEN RAISH** (2004) - Lecturer, Mathematics and Physics  
BA - Alfred University  
MAT - Binghamton University

**ELIZABETH RATERMAN** (2011) - Director, Multicultural Affairs  
MS - Ohio State University

**TIMOTHY L. RAY** (2009) - Instructional Support Assistant, Athletics

**TIMOTHY J. REAGAN** (2007) - Senior Staff Assistant, Technology Services  
AAS - SUNY College of Technology at Alfred

**ROBERT E. REES** (1986) - SUNY Distinguished Service Professor, Mechanical & Electrical Engineering Technology  
AS - Community College of Allegheny County  
BSEE, MSEE - University of Pittsburgh  
PE - Pennsylvania, Vermont  
SUNY Chancellor's Award for Excellence in Teaching, 1991-92

**STEVEN A. REYNOLDS** (2000) - Associate Professor, Business  
AS - Corning Community College  
BS - SUNY Fredonia  
MS - Elmira College  
MBA - Syracuse University

**RON RHOADES** (2011) - Assistant Professor, Business  
JD, CFP - University of Florida College of Law

## COLLEGE FACULTY AND STAFF

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**STEPHEN B. RICHARD** (2004) - Associate Professor, Building Trades  
BS - Cheyney University

**RICK R. RICHARDS** (1994) - Distance Learning Technician, Instructional Technologies

**GEORGE RICHARDSON** (1980) - Professor & Chair, Building Trades

**KARA RICKICKI** (2013) - Admissions Assistant, Admissions  
BA - SUNY Buffalo  
MBA - Saint Bonaventure University

**RUSSELL RITTENHOUSE** (2011) - Instruction Support Associate, School of Architecture, Management & Engineering  
Technology  
BTech - SUNY College of Technology at Alfred

**MARILYN ROBIN** (2012) - Personnel Assistant, Human Resources  
BA - SUNY Oswego

**MECHELE ROMANCHOCK** (2012) - Instructional Support Assistant, Hinkle Library  
BA - Alfred University  
MLS - Clarion University of Pennsylvania

**MICHAEL E. RONAN** (1985) - Professor, Automotive Trades  
BA - SUNY Fredonia  
ASE Auto Certification  
ATRA Testing Proctor  
SUNY Chancellor's Award for Excellence in Teaching, 1995-96  
SUNY Chancellor's Award for Excellence in Faculty Service, 2003-04

**SAMANTHA R. ROOSA** (2009) - Coordinator of Internal and External Education and Training, Human Resources  
BA - SUNY Empire State College

**JEANINE S. ROSE** (2008) - Counselor, Health and Wellness Services  
MSE - St. Bonaventure University

**JULIE A. ROSE** (2008) - Admissions Adviser, Admissions  
BS - SUNY Geneseo

**MELINDA ROUNDS** (2003) - University Police Officer I  
AAS - Jamestown Community College

**MATTHEW RYAN** (2002) - Sr. Director of Residential Services and Student Leadership Programs  
BA - SUNY Cortland  
MPA - SUNY College at Brockport

**MELANIE RYAN** (2002) - Academic Advisor, The Learning Center  
BS, MS - SUNY Cortland

**JOHN M. SANTORA** (1979) - Associate Professor & Chair, Culinary Arts  
AOS - SUNY College of Technology at Alfred  
SUNY Chancellor's Award for Excellence in Scholarship and Creative Activities, 2004-05

**PHILIP SCHROEDER** (2010) - Associate Professor & Chair, Agriculture & Veterinary Technology  
PhD - University of Georgia

**WILLIAM H. SCHULTZE** (1997) - Instructional Support Associate, Instructional Technologies  
BS - Alfred University

**JEREMY SCHWARTZ** (2011) - Assistant Professor, Digital Media and Animation  
MFA - California Institute of the Arts

**CHRISTINA SEIDEL** (2011) - Assistant Professor, Agriculture and Veterinary Technology  
DVM - Iowa State University

**KATHLEEN SELLERS** (2011) - Professor & Chair, Nursing  
PhD - Adelphi University

**DAVID SENGSTOCK** (1980) - Executive Director, Auxiliary Campus Enterprises and Services  
BS - Niagara University

**AMY SHAVER** (2012) - Associate Professor, Nursing  
MA - SUNY Institute of Technology at Utica-Rome

**MARK SHAW** (2004) - Assistant Professor, Computerized Design and Manufacturing  
AWS-certified Welding Inspector  
AWS-certified Welding Educator

**NANCY B. SHEARER** (1977) - Director of Institutional Research  
BS - Elmira College  
MS - Alfred University  
SUNY Chancellor's Award for Excellence in Professional Service, 1995-96

**MAUREEN SIBBLE** (2002) - Senior Career Planning & Development Associate, Career Development  
BS - The College at Brockport  
MSEd - Alfred University

**REX SIMPSON** (1984) - Professor, Architecture and Design  
BPSArch, MArch - University at Buffalo  
Registered Architect - New York  
SUNY Chancellor's Award for Excellence in Faculty Service, 2006-07

**MICHAEL SMITH** (2009) - Staff Assistant, Technology Services  
BA - SUNY College of Technology at Alfred

**PATRICK SMITH** (2011) - Residence Hall Intern, Residential Life  
BA - SUNY College of Technology at Alfred

**RACHEL SMITH** (2011) - Instructional Support Assistant, College Farm  
AAS - SUNY College of Technology at Alfred

**DAVID SNYDER** (2006) - Assistant Professor, Architecture and Design  
BA - Trinity College  
MArch - University of Pennsylvania

**CHRISTOPHER M. STABA** (1997) - Associate Professor, Automotive Trades  
AOS - SUNY College of Technology at Alfred  
VTE - Buffalo State College

**FRANCINE D. STABA** (1994) - Associate Professor & Chair, Business  
BS - Bloomsburg University  
MBA - Alfred University

**MARIA VANESSA STACHOWSKI** (1990) - Nurse II, Health and Wellness Services  
AAS - SUNY College of Technology at Alfred  
RNC - Certification in College Health Nursing

**JANICE L. STAFFORD** (2002) - Lecturer, English and Humanities  
MA - Ohio State University

**LINDA STAIGER** (2012) - Staff Assistant, Student Engagement  
MM - SUNY at Fredonia

**CHERYL STANTON** (2012) - Senior Staff Assistant, Institutional Advancement  
MS - Saint John Fisher College

**FLORENCE STEPHENS** (2005) - Admissions Advisor, Admissions  
BA - SUNY Geneseo  
MS - SUNY College at Buffalo

**JEFFREY L. STEPHENS** (1991) - Manager, Vending, Auxiliary Campus Enterprises and Services  
BS - Alfred University

**JEFFREY S. STEVENS** (2002) - Associate Professor, Electrical Trades  
AOS, AOS - SUNY College of Technology at Alfred  
SUNY Chancellor's Award for Excellence in Faculty Service, 2011-12

**CAROL W. STEWART** (1991) - Assistant Professor, Mathematics and Physics  
BS - Clarkson College of Technology  
MS - Canisius College

**THOMAS E. STOLBERG** (1988) - Associate Professor, Business  
AAS - SUNY College of Technology at Alfred  
BBA, MBA - St. Bonaventure University  
CPA

## COLLEGE FACULTY AND STAFF

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**MAGAN STRAIGHT** (2013) - Counselor, Health and Wellness Services  
BA, MS - Alfred University

**CRAIG STURDEVANT** (2000) - Telecommunications Manager, Auxiliary Campus Enterprises and Services  
AOS - SUNY College of Technology at Alfred

**JAYNE E. SWANSON** (2009) - Associate Vice President, Academic Affairs  
PhD - University at Buffalo

**TAKAO TAKEUCHI** (1983) - Professor, Mathematics and Physics  
BS - Nagoya University (Japan)  
MS - Kanazawa University  
PhD - University of North Carolina at Chapel Hill

**EDWARD G. TEZAK** (1998) - SUNY Distinguished Service Professor & Chair, Mechanical & Electrical Engineering Technology  
BS - U.S. Military Academy  
MS - UCLA  
PhD - VPI & SU  
PE - Virginia

**JANETTE THOMAS** (1979) - Director, The Learning Center/EOP  
AAS - SUNY College of Technology at Alfred  
BS - Daemen College  
MPS - Alfred University  
SUNY Chancellor's Award for Excellence in Teaching, 1996-97

**BRADLEY J. THOMPSON** (1997) - Assistant Professor, Electrical Trades  
AOS - SUNY College of Technology at Alfred

**CYNTHIA THORP** (2005) - Instructional Support Assistant, School of Arts & Sciences  
BSE, MSE - Mansfield University

**CHRISTOPHER TOMASI** (2000) - Associate Professor, Mechanical & Electrical Engineering Technology  
AAS - Niagara CCC  
BSIE, MSED - Buffalo State College  
MS - Pittsburgh State University  
SUNY Chancellor's Award for Excellence in Teaching, 2008-09

**ROBIN L. TORPEY** (1991) - Associate Professor, Computer and Information Technology  
AAS - Community College of the Air Force  
AS - Park College  
BS - SUNY Empire State College  
MLS - University at Buffalo  
A+, Network+, CCNA, CCAI

**LIBBY TSIBULSKY** (2013) - Counselor, Health and Wellness Services  
BA, MS - Alfred University

**DIANNE TUZZOLINO** (2004) - Associate Professor, Business  
AS, BS, MBA - SUNY Empire State College

**DEAN TZIVANIS** (2011) - Residence Hall Intern, Residential Life  
MS - Binghamton University

**JANE A. VAVALA** (2004) - Associate Librarian, Hinkle Memorial Library  
BS - University of Pittsburgh/Bradford  
MLS - Clarion University  
SUNY Chancellor's Award for Excellence in Librarianship, 2012-13

**CHRISTIAN A. VERNAM** (2008) - Assistant Director, Student Records and Financial Services  
BS - The College at Brockport

**ERIN VITALE** (2001) - Associate Professor, Civil Engineering Technology  
BS - University of California, Riverside  
MSCE - Stanford University

**NICHOLAS WADDY** (2002) - Associate Professor, Social and Behavioral Sciences  
BA - Washington and Lee University  
PhD - University of Rochester



**SCOTT WALDEIS** (2003) - Lecturer, Physical and Life Sciences

AS - Finger Lakes Community College

BS - SUNY Empire State College

MS - University of Bridgeport

DC - New York Chiropractic College

**SCOTT WATERMAN** (2012) - Instructor, Automotive Trades

BS, MS - SUNY at Buffalo

**WILLIAM WEAVER** (2011) - Instructor, Automotive Trades

AOS - SUNY College of Technology at Alfred

**PAUL WELKER** (2001) - Senior Staff Assistant, Sports Information

AS - Finger Lakes Community College

BA - Mercyhurst College

**TAMMY WELLINGTON** (1997) - Staff Associate, Student Records and Financial Services

BS - SUNY Geneseo

**AMY L. WERNER** (2006) - Instructional Support Technician, Physical and Life Sciences

AAS - SUNY College of Technology at Alfred

**JOHN C. WERNER** (2006) - Assistant Professor, Building Trades

**JAMES WHEDON** (2012) - Director of Printing and Mailing Services, Document Center

BS - Central Michigan University

**ALICIA WHEATON** (2002) - Assistant Professor, English & Humanities

MEd - University of Texas at El Paso

MS - Instituto Tecnologico de Monterrey

PhD - New Mexico State University

**JASON WHITE** (1998) - Senior Staff Assistant, Student Records and Financial Services

BS - LeMoyne College

**DANIELLE M. WHITE** (2009) - Director of Annual Giving, Institutional Advancement

MBA - University of Phoenix

**SIMON WHITEHOUSE** (2008) - Lecturer, Mathematics and Physics

MA - University at Buffalo

**JEFFREY WILCOX** (2011) - University Police Officer I

BS - SUNY Brockport

**ROGER WILCOX** (2005) - Instructional Support Assistant, Electrical Trades

**ERIC WILMOT** (2005) - Assistant Professor, Automotive Trades

AOS - SUNY College of Technology at Alfred

**MARK WOODWORTH** (2007) - University Police Officer I

AAS - SUNY College of Technology at Alfred

BA - Houghton College

**PATRICK WOODWORTH** (2004) - Computer Specialist, Technology Services

BS - SUNY College of Technology at Alfred

**LUANN WOOLMAN** (2011) - Associate Professor, Social and Behavioral Sciences

PhD - University of Nebraska-Lincoln

**BARBARA WOOLSTON** (2001) - Nurse I (Part-time), Health and Wellness Services

AAS - SUNY College of Technology at Alfred

**CHRISTOPHER W. WORTH** (2002) - Instructional Support Assistant, Automotive Trades

AOS - SUNY College of Technology at Alfred

**CHOICHIRO YATANI** (1991) - Professor, Social and Behavioral Sciences

BS - Utah State University

MA - Oregon State University

PhD - Stony Brook University

## COLLEGE FACULTY AND STAFF

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**LISA YATES** (2003) - Associate Professor, Nursing

AAS - SUNY College of Technology at Alfred

BS - The College at Brockport

MS, NP - Binghamton University

RN

**JO ELLEN YORK** (2000) - Instructional Support Assistant, Health and Wellness Services

AS - SUNY College of Technology at Alfred

**CHRISTINE L. YOUNG** (1984) - Instructional Support Associate, Mathematics and Physics

**KAREN K. YOUNG** (1993) - Associate Professor & Chair, Computerized Design & Manufacturing Department

AOS - SUNY College of Technology at Alfred

**CARI ZOBRIST** (2012) - Instructor, Culinary Arts

AOS - California School of Culinary Arts

**ALYSHIA ZURLICK** (2012) - Senior Staff Assistant, Student Engagement

BS, MS - SUNY College at Brockport

**LOUIS ZVER** (2010) Lecturer, Building Trades

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