

2023-2024

# Iowa Western Community College General Catalog

## **Council Bluffs Campus**

2700 College Road  
Council Bluffs, Iowa 51503  
(712) 325-3200  
1-800-432-5852

## **Clarinda Center**

923 E. Washington Street  
Clarinda, Iowa 51632  
(712) 542-5117  
1-800-521-2073

## **Buss Regional Center**

115 S Harrison Street  
Missouri Valley, Iowa 51555  
(712) 325-3404

## **Cass County Center**

705 Walnut Street  
Atlantic, Iowa 50022  
(712) 243-5527

## **Page/Fremont County Center**

1001 W. Sheridan Ave.  
Shenandoah, Iowa 51601  
(712) 246-1499

## **Shelby County Center**

1901 Hawkeye Ave., Ste. 102  
Harlan, Iowa 51537  
(712) 755-3568



**IOWA WESTERN**

The world is waiting

[www.iwcc.edu](http://www.iwcc.edu)

\*Current as of 6/7/2023

# Disclaimer Statement

## Equal Opportunity and Non-Discrimination

It is the policy of Iowa Western Community College to provide equal educational opportunities and not to discriminate on the basis of race, color, creed, religion, national or ethnic origin, ancestry, genetic information, physical or mental disability, age, sex, sexual orientation, gender identity or expression, veteran status, citizenship, medical condition, and actual or potential parental, family or marital status as those terms are defined under applicable laws, in its educational programs, activities, or employment practices, as required by Iowa Code sections 216.6 and 216.9, Titles VI and VII of the Civil Rights Act of 1964 (42 U.S.C. § 2000d and 2000e), the Equal Pay Act of 1973 (29 U.S.C. § 206, et seq.), Title IX (Educational Amendments, 20 U.S.C. §§ 1681 – 1688), Section 504 (Rehabilitation Act of 1973, 29 U.S.C. § 794), and the Americans with Disabilities Act (42 U.S.C. § 12101, et seq.).

The following individuals have been designated to handle inquiries and complaints regarding equal opportunity and nondiscrimination:

### EQUAL EMPLOYMENT OPPORTUNITY and TITLE IX

Robyn Porter  
Director of Human Resources/Title IX and Equal Opportunity  
Coordinator for Employees  
2700 College Road  
Council Bluffs, IA 51503  
(712) 325-3413  
rporter@iwcc.edu

### TITLE IX, DISABILITY, and OTHER FORMS OF DISCRIMINATION

Reanna Heim  
Dean of Student Life and Success/Title IX, ADA/504, and  
Equal Opportunity Coordinator for Students  
2700 College Road  
Council Bluffs, IA 51503  
(712) 325-3207  
rheim@iwcc.edu

Inquiries and complaints may also be directed to the Director of the Office for Civil Rights U.S. Department of Education, John C. Kluczynski Federal Building, 230 S. Dearborn Street, 37th Floor, Chicago, IL 60604-7204, Telephone: (312) 730-1560 Facsimile: (312) 730-1576, TDD 800-877-8339 Email: OCR.Chicago@ed.gov

## From the President of the College

Caring, Commitment and Challenge are the core values that drive Iowa Western Community College to be the premier educational institution in the region.

Our faculty and staff demonstrate a high level of care and commitment to each and every student that walks onto our campus or into our centers, and we promise to offer challenging curricula that prepare you for a successful path in life.

We support your goals by offering state-of-the-art educational resources in classrooms staffed by experienced and knowledgeable instructors. The college's dedicated advising staff will lead you through your desired educational path and prepare you for that important next step in your career.

From the Office of the President to faculty and staff up and down every hallway, we are here to help each student reach their goals at Iowa Western. Welcome to the Reiver family!

*Dan Kinney*

Dr. Dan Kinney  
President



### Board of Trustees

John McBride, Director  
*District 1*

Stan Sibley, Director  
*District 2*

Dr. John Marshall, Vice President  
*District 3*

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*Executive Director of Economic and Workforce Development*

Shane Larson  
*Athletic Director*

Erin McKee  
*Executive Assistant to the President/Board Secretary*

# IOWA WESTERN COMMUNITY COLLEGE

## Mission Statement

Iowa Western Community College is a learning community committed to excellence in meeting the educational needs and improving the quality of life through programs, partnerships, and community involvement.

## Vision Statement

Iowa Western Community College will be recognized as a premier educational leader and partner, with student learning and success being our highest priority.

## Beliefs

These statements of Beliefs support and clarify the Mission Statement of Iowa Western Community College:

- Faculty, students, staff and community partners are equal stakeholders in the culture of our learning community.
- Each and every individual has dignity and worth.
- Community support depends upon identifying and meeting the diverse and changing needs of the people in Southwest Iowa.
- Each person deserves opportunities for lifelong learning and growth.
- Open, honest communication through word and action builds credibility and trust.
- Striving for excellence defines the effort of the entire college community.
- Cooperative partnerships foster college and community growth.

## History

On June 7, 1965, area school legislation was approved by the 61st General Assembly of Iowa, creating the community college system. A proposal to establish Iowa Western Community College was authorized by the county Boards of Education of Cass, Fremont, Harrison, Mills, Page, Pottawattamie and Shelby counties and was submitted to the State Board of Public Instruction. In February of 1966 approval of Merged Area XIII, Iowa Western Community College was granted by the State Board of Public Instruction with campus sites at Council Bluffs and Clarinda.

## Accreditation

The College is accredited as a post-secondary institution by the Higher Learning Commission. Individuals should direct their questions, comments or concerns to The Higher Learning Commission, 230 South LaSalle Street, Suite 7-500, Chicago, IL 60604, (800) 621-7440 or (312) 263-0456.

## COMPLIANCES

### Americans with Disabilities Act and the Rehabilitation Act

The Americans with Disabilities Act (ADA), Public Law 101-336, was enacted on July 26, 1990, to provide a clear and comprehensive mandate for the elimination of discrimination against individuals with disabilities. This federal legislation requires equal treatment of people with disabilities in employment, public services and transportation, public accommodations, and telecommunication services. Section 504 of the Rehabilitation Act of 1973, with virtually identical purposes, applies to any college or university that receives federal funds in any program.

Iowa Western Community College, a public entity as set forth in Title II of the ADA, is subject to the requirements of the Americans with Disabilities Act. Title II of the ADA prohibits discrimination against qualified individuals with disabilities with regard to the services, programs, and activities at Iowa Western Community College. Iowa Western Community College is also prohibited from discrimination against individuals with disabilities in its employment practices pursuant to Title I of the Americans with Disabilities. Individuals with disabilities have a right to request accommodation. For more information, contact the Coordinator of Disability Services.

### Americans with Disabilities Act and Section 504 Grievance Policy and Procedure

Iowa Western Community College ("IWCC") is committed to providing equal opportunity to persons with disabilities and meeting its obligations under Title II of the Americans with Disabilities Act Amendments Act ("ADA"), 42 U.S.C. § 12131, and Section 504 of the Rehabilitation Act of 1973 ("Section 504"), 29 U.S.C. § 794. As part of that commitment, IWCC has adopted this internal grievance procedure providing for the prompt and equitable resolution of complaints alleging any conduct prohibited by the ADA or Section 504.

This Policy and Procedure applies to discrimination and/or harassment that violates the ADA or Section 504 carried out by students or employees of IWCC or third parties over whom IWCC has control. An example of such conduct includes, for example, solely by reason of a disability, excluding a student from participating in, denying the benefits of, or being subjected to discrimination under any program or activity sponsored by IWCC. Qualified individuals with disabilities may also be entitled to a reasonable modification, including an academic adjustment, as necessary to ensure that a policy, procedure, or requirement does not discriminate on the basis of disability. For more information see the IWCC Reasonable Accommodation Policy posted on ROC.

Complaints should be addressed to the Director of Academic Support:

2700 College Road  
Council Bluffs, IA 51503  
712-325-3200  
equity@iwcc.edu

Complaints must meet the following requirements:

1. The complaint should be filed in writing or verbally and contain the name and address of the person filing it, and a description of the conduct that allegedly violates the ADA or Section 504.
2. The complaint should be filed within 30 calendar days after the complainant becomes aware of the alleged conduct. However, IWCC may consider complaints filed later than 30 calendar days depending on the circumstances.
3. The Director of Academic Support or their designee will conduct an appropriate investigation of the complaint. The investigation will be informal but thorough, affording all interested persons and their representatives, if any, an opportunity to submit evidence relevant to the complaint.
4. A written determination and a description of the resolution, if warranted, will be issued by the Director of Academic Support or their designee and a copy forwarded to the complainant and the appropriate campus authority no later than 30 calendar days after the completion of the investigation.
5. The Director of Academic Support or their designee will maintain the files and records relating to the complaints filed. The files and records are confidential and are accessible only to individuals with a legitimate need for such access.
6. The complainant may request reconsideration of the determination within 10 working days of receiving notice of the determination to the Dean of Student Life and Success/ADA Coordinator for Students with Disabilities.
7. Filing a complaint under this procedure with a reasonable basis to believe the alleged conduct violates the ADA or Section 504 is a protected activity. Retaliation against anyone who files such a complaint or who assists an individual in filing such a complaint is strictly prohibited. Any person engaged in such retaliation may be subject to appropriate discipline.
8. Use of this grievance procedure is not a prerequisite to pursuing other remedies, such as the filing of an ADA/Section 504 complaint with the responsible federal department or agency.
9. These rules will be construed to protect the substantive rights of interested persons, meet appropriate due process standards, and assure that IWCC complies with Section 504 and the ADA and their implementing regulations.

## Reasonable Accommodation Policy

Students with a documented or obvious "disability" as defined by the Americans with Disabilities Act Amendments Act ("ADA"), 42 U.S.C. § 12131, *et seq.*, and Section 504 of the Rehabilitation Act of 1973 ("Section 504"), 29 U.S.C. § 794, may be entitled to a reasonable accommodation, modification, or academic adjustment.

A disability for purposes of this Policy means a physical or mental impairment that substantially limits one or more major life activities and, in some cases, having a record of such an impairment. Impairments include, for example, disorders or conditions affecting the neurological or musculoskeletal systems, special sense organs, respiratory, cardiovascular, reproductive, digestive, genitor-urinary, hemic, lymphatic, or endocrine systems, or the skins. Impairments also include mental or psychological disorders, including mental retardation, organic brain syndrome, emotional or mental illness, and certain learning disorders. Major life activities include, for example, caring for oneself, performing manual tasks, seeing, hearing, eating, sleeping, walking, standing, lifting, bending, speaking, breathing, learning, reading, concentrating, thinking, communicating, and working.

### Reasonable Accommodation Requests

IWCC will provide reasonable accommodations, modifications, or academic adjustments to the known limitations of an otherwise qualified student with a disability. It is the responsibility of the student with a disability to inform IWCC that they are in need of an accommodation, modification, or academic adjustment. Students who believe they are entitled to a reasonable accommodation, modification, or academic adjustment must contact the Accommodation Services Coordinator at:

2700 College Road  
Council Bluffs, IA 51503  
(712) 325-3299  
acc@iwcc.edu

Students must provide reliable documentation from appropriate, licensed professionals and/or educational information such as Individual Education Plan (IEP), 504 plan, Summary of Progress (SOP) or other information about a student's education and accommodation history to support their request. Any cost of obtaining documentation is the responsibility of the student. If the initial documentation is incomplete or inadequate and an interview of the student interview does not provide the necessary information, IWCC has the discretion to request additional information necessary to make an educated decision as to whether the student is entitled to an accommodation, modification, or academic adjustment.

### **Determination Of Need And Reasonableness Of Requested Accommodation**

Accommodations, modifications, or academic adjustments will be granted to students who demonstrate a disability-based need for the accommodation, modification, or academic adjustment to enable the student to have an equal opportunity to attain the same level of performance or to enjoy equal benefits and privileges as are available to similarly situated individuals without a disability.

Evaluation of performance, including admissions decisions, course examinations and other measures of achievement, will be provided with appropriate reasonable accommodations or modifications to ensure that the evaluation represents achievement rather than reflecting the impact of disability.

IWCC is not required to provide an accommodation, modification, or academic adjustment if it would result in an undue hardship or fundamentally alter any program, policy, or service provided by IWCC.

### **Direct Threat**

IWCC is not required to permit a student with a disability to participate in or benefit from its programs or services if the student presents a "Direct Threat." "Direct Threat" means a significant risk to the health or safety of others that cannot be eliminated by reasonable accommodation.

If a student with a disability is engaged in threatening behavior caused by their disability, IWCC will determine if the student is a "Direct Threat." In making this determination, IWCC will make an individualized assessment that relies on current medical knowledge or on the best available objective evidence regarding: (1) the nature, duration, and severity of the threat; (2) the probability that injury will occur; and (3) whether a reasonable accommodation, modification, or auxiliary aid or service exists that will mitigate the threat. IWCC will appoint a committee of at least three persons with experience in the area of disability accommodation and student services to make the decision as to whether a student is a "Direct Threat." Under exceptional circumstances when the student's medical documentation is insufficient standing alone for the group to determine if the student is a "Direct Threat," the group will engage a person with appropriate medical and/or psychological training and experience to assist the committee in making this decision.

Under exceptional circumstances, including but not limited to, when safety is of immediate concern, IWCC may take interim adverse action against the student to stop any threat pending a final decision as to whether a student is a "Direct Threat." If such interim adverse action is taken, IWCC will provide the student reasonable notice of the basis for the adverse action and notice that the student will be provided full due process before a final decision is made to permanently exclude them from the program or service because they are a "Direct Threat."

### **Grievance Procedure**

Any student may seek reconsideration of a determination under this Policy through the IWCC Americans with Disabilities Act and Section 504 Grievance Policy and Procedure found on the Disability Services Page on ROC and in the Student Code of Conduct, Discipline, and Appeals Procedure section of the Student Handbook.

### **Civil Rights Act**

The Iowa Western Community College (Merged Area XIII) filed assurance of compliance with Title VI of the Civil Rights Act of 1964 on September 9, 1966, and accepts all requirements imposed by or pursuant to the regulation. No person in the United States shall, on the ground of race, sex, color, creed or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity offered by the College. Iowa Western Community College adheres to the principle of equal education and employment opportunity without regard to race, color, creed, religion, national or ethnic origin, ancestry, genetic information, physical or mental disability, age, sex, sexual orientation, gender identity or expression, pregnancy, marital status, veteran status, AIDS/HIV status, citizenship, or medical condition, as those terms are defined under applicable laws.

### **Equal Opportunity and Non-Discrimination**

It is the policy of Iowa Western Community College to provide equal educational opportunities and not to discriminate on the basis of race, color, creed, religion, national or ethnic origin, ancestry, genetic information, physical or mental disability, age, sex, sexual orientation, gender identity or expression, veteran status, citizenship, medical condition, and actual or potential parental, family or marital status as those terms are defined under applicable laws, in its educational programs, activities, or employment practices, as required by Iowa Code sections 216.6 and 216.9, Titles VI and VII of the Civil Rights Act of 1964 (42 U.S.C. § 2000d and 2000e), the Equal Pay Act of 1973 (29 U.S.C. § 206, et seq.), Title IX (Educational Amendments, 20 U.S.C. §§ 1681 – 1688), Section 504 (Rehabilitation Act of 1973, 29 U.S.C. § 794), and the Americans with Disabilities Act (42 U.S.C. § 12101, et seq.).

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(712) 325-3207  
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### Drug-Free Schools and Communities

Amendments to the Drug-Free Schools and Communities Act of 1989 require documentation of services and awareness for drug-free schools and communities. The College has filed a Drug Prevention Program Certification document with the U.S. Department of Education as required by Public Law 101-226. The College will comply with all requirements of this act. For more information, contact the Dean of Student Life.

### Title IX

It is the policy of Iowa Western Community College to comply with Title IX of the Education Amendments of 1972, which prohibits discrimination (including sexual harassment and sexual violence) based on sex in the College's educational programs and activities. Title IX also prohibits retaliation for asserting or otherwise participating in claims of sex discrimination. Iowa Western Community College has designated a Title IX Coordinator, to coordinate IWCC's compliance with and response to inquiries concerning Title IX. [Click here for more information on Title IX and the Iowa Western Community College Sexual Harassment Policies.](#)

### Pregnant and Parenting Students

Iowa Western Community College does not discriminate against pregnant and parenting students based on pregnancy, childbirth, false pregnancy, termination of pregnancy, or recovery from any of these conditions in accordance with Title IX regulations. The Title IX regulation also prohibits the College from applying any policy related to a student's parental, family, or marital status that treats students differently based on their sex. In addition, Title IX prohibits the exclusion of a pregnant student from participating in any part of an educational program, including extracurricular activities, opportunities for student leadership, and other activities.

### Clery Act Compliance Statement

In compliance with the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act, Iowa Western Community College publishes its Annual Security and Fire Safety Report by October 1st of each year. The Dean of Student Life will prepare and distribute this report which includes statistics for the previous three years concerning reported crimes that occurred on-campus; in certain off-campus buildings or property owned or controlled by IWCC; and on public property within or immediately adjacent to and accessible from the campus. The report also includes institutional policies concerning campus security, such as policies concerning alcohol and drug use, crime prevention, the reporting of crimes, sexual assault and other matters. A copy of this report can be obtained from the Dean of Student Life or the Campus Safety and Security ROC page.

## CAMPUS AND CENTERS

### Council Bluffs Campus

Instructional services at the Council Bluffs Campus include a comprehensive Arts and Sciences program with classes offered days, evenings, and weekends, as well as online. Also available are a multitude of Career and Technical programs. In addition, support services are provided in the areas of academic support, tutoring, learning resources, and disability services.

#### Council Bluffs Campus

Iowa Western Community College  
Box 4-C, 2700 College Road  
Council Bluffs, IA 51502  
(712) 325-3200 or (800) 432-5852 (toll-free nationwide)

### Centers

The College offers Arts and Sciences courses at the Clarinda Center as well as the Cass County (Atlantic), Page/Fremont County (Shenandoah), and Shelby County (Harlan) Centers. In addition, the Clarinda Center and the Shelby County Center offer a nursing program. Each center also offers a wide range of continuing education classes in such areas as cosmetology, secretarial and office occupations training, real estate and insurance, business management, consumer education, recreation, and many others.

#### Clarinda Center

Iowa Western Community College  
923 East Washington Street  
Clarinda, IA 51632  
(712) 542-5117 or (800) 521-2073 (Iowa toll-free)

#### Cass County Center

Iowa Western Community College  
705 Walnut Street  
Atlantic, IA 50022  
(712) 243-5527

#### Buss Regional Center

Iowa Western Community College  
115 S. Harrison St.  
Missouri Valley, IA 51555  
(712) 325-3404

#### Page/Fremont County Center

Iowa Western Community College  
1001 W. Sheridan Ave.  
Shenandoah, IA 51601  
(712) 246-1499

#### Shelby County Center

Iowa Western Community College  
1901 Hawkeye Ave., Suite 102  
Harlan, IA 51537  
(712) 755-3568

## Continuing Education

The function of the Continuing Education Department is to provide the citizens of southwest Iowa with the opportunity to meet their educational needs in areas not provided through credit programs by the College. The department provides career training programs, customized training for business and industry, and a variety of other programs intended to meet the educational and training needs of individuals in Southwest Iowa.

### Adult Learning Center

The Adult Learning Center is located in Kinney Hall on the Council Bluffs campus. Class instruction in Adult Basic Education, English as a Second Language, and High School Equivalency Completion (HiSET) and testing. Similar programs are provided in Atlantic, Harlan, Shenandoah, and Clarinda.

### Educational Opportunities

The Continuing Education Department provides short-term career training, customized training, consulting services, and educational programs for individuals as well as business and industry located in southwest Iowa. Programs are available in a variety of areas, including apprenticeship, technical skills, plant maintenance, electrical code, personal computer, welding, management, supervision and many more. In addition, the Continuing Education Department offers career supplemental education, re-licensure courses as approved by the Iowa license boards for almost 30 professions or occupations, and court mandated courses such as Driver Improvement Program (DIP) classes and Driving Unimpaired (DUI) classes. Other driver training includes MOPED and motorcycle training, school bus driver certification, and driver's education. Class instruction is also available in a number of other areas, including, but not limited to, family and consumer sciences, and hobbies and recreation.

### Continuing Education Units (CEU)

The CEU is a method of recording and accounting for an individual's participation in continuing education courses, seminars, and programs. Its purpose is to provide a mechanism by which most continuing education activities can be recorded. One CEU is earned through ten contact hours of participation in an organized continuing education activity. Through the use of CEUs, a person will be able to accumulate, update, and transfer a record throughout life as he/she increases proficiency in a career or moves toward personal educational goals. CEUs are accumulated automatically with course registration. Contact the Continuing Education Office to request a CEU transcript.

## Admissions

Iowa Western Community College will admit all individuals who are high school graduates, or the equivalent, or who have successfully completed a high school equivalency diploma. In order to complete the process for admission, students must submit or complete the following:

**Application for Admission.** Students must submit a completed Application for Admission to the Office of Admissions or apply online at [www.iwcc.edu](http://www.iwcc.edu). There is no application fee.

**High School Transcript.** Degree-seeking students must submit official high school or high school equivalency transcripts. An official transcript includes the graduation or completion date of the high school diploma or high school equivalency diploma. The student should contact the high school from which they graduated, or the institution from which they

earned their high school equivalency diploma, to request that transcripts be sent. Students may register for their first semester of classes without official high school or high school equivalency transcripts on file. However, Iowa Western Community College requires official transcripts to be eligible for potential financial aid disbursement and registration of future semesters.

**College Transcripts.** Students must submit an official transcript from each college or university they attended, even if they do not wish to have credit evaluated or transferred. In order to be official, transcripts must be sent directly from the institution where credit was earned to the Iowa Western Community College Records and Registration Office.

**Placement Test Scores.** Test scores are not required for admission to the College. However, students who have taken a standardized college aptitude test, like the ACT, should have their most recent scores sent to the Office of Admissions. Test scores, in addition to previous coursework and non-cognitive assessment results, are utilized by advisors to help determine placement into appropriate math and English courses.

**Additional Program Requirements.** Program-specific requirements and/or prerequisites may need to be met prior to admittance to a program. In addition, program-specific requirements and/or prerequisites may need to be met prior to enrollment in a program, including, but not limited to, a health history/physician's certificate. Programs may require drug screening and a criminal records check to comply with clinical site mandates. Conviction of certain criminal activities may prohibit students from being eligible to sit for licensure/certification exams.

**Additional Requirements for Applicants for Whom English is Not the First Language.** College applicants for whom English is not the first or native language must provide one of the following forms of English language assessment for admission: standardized college test scores (e.g. TOEFL, IELTS, SAT, ACT, SEPT) or academic achievement/proficiency in English as evidenced by secondary and post-secondary transcripts. Alternatively, students may provide documentation proving they originate from or have completed education in one of the Waiver Countries.

**Additional Requirements for International Applicants.** International students must be 17 years of age or older and submit official secondary school and college transcripts with English translation. Also, international students must satisfy all requirements to receive the I-20 form, including proof of adequate financial resources.

### Readmission

A student who previously attended Iowa Western Community College and has been absent for at least one semester, excluding the summer term, may be required to apply for readmission. Students who wish to be readmitted will be expected to complete all applicable requirements, including submitting transcripts for other colleges attended since the last attendance at Iowa Western Community College. Readmission to Career and Technical programs will be subject to the availability of space and an evaluation of previous progress.

## Location of the Office of Admissions

Although the Office of Admissions is located at the Council Bluffs campus, you may obtain information about the College and submit applications at the main campus or at any of the four centers.

Office of Admissions  
Iowa Western Community College  
Box 4-C, 2700 College Road  
Council Bluffs, IA 51502  
(712) 325-3277 or (800) 432-5852 (toll-free nationwide)

## Student Classification

Upon admittance to the College, students are classified according to their academic intentions as indicated on their Application for Admission.

### Degree-seeking Student

A student who is seeking a degree must select an academic program of study. Degree-seeking students are classified under either Arts and Sciences or Career and Technical areas of education.

### Visiting Student

If you are a college student regularly enrolled at another college or university and want to take a course or courses to immediately transfer back to that institution, you may be accepted to Iowa Western Community College as a visiting student. Please note that transcripts may be required for registration. Visiting students are not eligible to receive financial aid from Iowa Western.

### Non-Degree/Adjunct Student

If you are a student seeking personal or professional development with no intention of earning a degree, you may be accepted to Iowa Western Community College as an adjunct student. Adjunct students may not be full-time. Please note that transcripts may be required for registration. Non-Degree/Adjunct students are not eligible for financial aid.

### High School Student

A high school student in grades 9-12, who is deemed proficient by their high school, may be accepted to the College to take a course or courses through a variety of joint enrollment options including but not limited to those afforded through Senior Year Plus legislation, as written in Iowa Code 281.21. High school students are required to submit a high school application signed by an official at the high school and may be required to submit a copy of their high school transcript.

### Resident/Non-Resident Classification

A student enrolling at Iowa Western Community College shall be classified as resident or non-resident of the State of Iowa for purposes of tuition assessment. This classification is determined by the Director of Admissions at the time of application and admission to the College. This classification shall be based upon information furnished by the student and all other relevant information available about the student.

### Non-Resident Exemptions

A veteran of military service or the National Guard, or their spouse or dependent child, shall be classified as a resident if one of the following conditions is met: 1.) the veteran has separated from a uniformed service with an honorable discharge or a general discharge, is eligible for benefits, or has exhausted benefits, under the federal Post-9/11

Veterans Educational Assistance Act of 2008 or any other federal authorizing veteran educational benefits program, or 2.) the individual is an active duty military person, or activated or temporarily mobilized National Guard member, or 3.) the individual is a covered person under Section 702 of the Veterans Access, Choice, and Accountability Act of 2014 or subsequent legislation. Students may be required to submit a DD214, current military orders, birth certificate, tax return, marriage certificate, and/ or Affidavit of Domestic Partner Relationship in order to qualify for the exemption. Additionally, a person, or their spouse or dependent child, who has moved to the state of Iowa as the result of military or civil orders from the federal government, and the minor children of such persons, are entitled to immediate Iowa residency status.

### Change of Residency Status

The student shall remain a non-resident for tuition purposes unless the student changes their permanent residence to the state of Iowa and submits a Request to Change Residency Status to the Registrar. In order for the Request to Change Residency Status to be considered, an address change must be on file with the Records and Registration Office. The Request to Change Residency Status must be submitted within the first week of the term for which the change is sought. In order for the request to be granted, the student must also submit a brief statement explaining their main purpose in moving to the state of Iowa, as well as three supporting documents that include a date 90 days prior to the start of the term for which the change is sought. A student who is in the state of Iowa primarily for educational purposes cannot be granted residency status.

## Records & Registration

For the purposes of this catalog, regular-term classes are defined as sixteen-week classes that follow the semester dates on the Academic Calendar as approved by the Board of Trustees.

### Registration Process

New students and returning students (students who have experienced a break in enrollment) are required to register for classes with the assistance of an Admissions Advisor. Most new, returning, and continuing students (students who have not experienced a break in enrollment) can register for classes online through Student Self Services in Iowa Western Community College's online student portal, Reiver Online Campus (ROC). Assistance is available, and encouraged, through an assigned academic advisor. Class attendance is not permitted until the registration process has been completed. Registration dates and instructions are available in ROC and at the Records and Registration Office.

### Late Registration

Students have until the day before the start of a term or session to complete their initial registration. To provide students with the best chance to succeed, students are not allowed to register once the term or session has begun regardless of whether or not the class has met. This policy applies to the fall and spring terms, as well as all accelerated sessions, including summer and winterim.

## Changes in Registration

Changes in registration include adding and dropping classes. Students can make changes to their registration online through Student Self Services in ROC through the first week of a semester. Students who wish to make changes to their schedule after the first week of the semester must complete a Change of Registration form, secure a signature from their assigned advisor, and then take the completed form to the Records and Registration Office before the correlating deadline. A change in registration is not official until it is received by the Records and Registration Office. It is the responsibility of the student to see that all forms, with appropriate signatures, reach that office.

## Adding a Class

After initial registration, students may add a regular-term day class to their schedule through the first week of the term, and they may add a regular-term night or weekend class prior to the second meeting of the class. Deadlines for adding all classes are posted online at [www.iwcc.edu](http://www.iwcc.edu) and in ROC, and they are also available at the Records and Registration Office. After the posted deadline for adding a class has passed, students may register for classes under extenuating circumstances only with the permission of the appropriate Academic Division Dean. Regular tuition and fees will be charged for all added classes.

## Dropping a Class

Students may drop a class from their schedule any time up to the posted last day to drop for the term in which the class is scheduled. Specific drop dates are posted online at [www.iwcc.edu](http://www.iwcc.edu) and in ROC, and they are also available at the Records and Registration Office. Students who drop a class before the term begins will display no activity for that class on their transcript. Students who drop a class after the term begins will display a grade of "W" for that class on their transcript. Please refer to the Refund of Tuition and Fees section of this catalog for information regarding the financial impact of dropping a class.

Sixteen-week term: A student may drop a class through the twelfth week of a sixteen-week term.

Eight-week term: A student may drop a class through the sixth week of an eight-week term.

Interim classes: A student may drop an interim class through three-fourths of the length of the class.

Students who fail to drop by the aforementioned deadlines must remain enrolled in scheduled classes. Failure to attend class once registered does not cancel registration or tuition and fees. Failure to drop a class will potentially result in a failing grade being recorded on the student's transcript.

## Official Withdrawal from College

Withdrawing from college means dropping all classes for which a student is registered in any given semester. Students who find it necessary to withdraw from college may do so through Student Self Services in ROC through the last day to drop. Students who need to withdraw from college can also complete a Withdrawal Form, secure a signature from their assigned advisor, and then take the completed form to the Records and Registration Office before the last day to drop, as outlined above. Specific drop dates are posted online at [www.iwcc.edu](http://www.iwcc.edu) and in ROC, and they are also available at the Records and Registration Office. Students who withdraw from college before the semester begins will display no activity for those classes on their transcript. Students who withdraw from college after the semester begins will display a grade of "W" for those classes on their transcript. A withdrawal is not official until

it is received by the Records and Registration Office. It is the responsibility of the student to see that all forms, with appropriate signatures, reach that office.

Students who register for classes but do not plan to attend must do one of three things prior to the first day of the semester in order to avoid being subject to Administrative Withdrawal or potentially receiving failing grades: withdraw online through Student Self Services in ROC, complete a Withdrawal Form, or notify the Records and Registration Office in writing. Failure to attend class once registered does not cancel registration. Students who fail to withdraw by the last day to drop must remain enrolled in scheduled classes. Failure to officially withdraw from college will potentially result in failing grades being recorded on the student's transcript.

Please refer to the Refund of Tuition and Fees section of this catalog for information regarding the financial impact of withdrawing from college. Information is also available in ROC.

## Medical Withdrawal from College

A student who documents medical reasons for withdrawing from classes will be permitted to withdraw from classes, with a "W" recorded on the transcript, beyond the official drop date. The student must present a document from an appropriate medical professional citing the reason for the required withdrawal. The document must list the date of the first medical visit and the date the student will be permitted to return to regular classes. The request for withdrawal must be presented prior to the last day of the semester for which the withdrawal is desired. The student must withdraw from all classes scheduled in the semester of the request. No refund will be given in the case of a medical withdrawal.

## Administrative Withdrawal

The college may administratively withdraw a student at any point in a semester or term, from a single class or multiple classes, for reasons that include but are not limited to the following: non-attendance, non-payment, and violations of the student code of conduct.

## Administrative Withdrawal for Non-Attendance

Students who are administratively withdrawn for non-attendance will be subject to an Administrative Withdrawal Fee of \$10.00 per registered credit hour at the time of the withdrawal and will not be charged tuition and college service fees. Students who are administratively withdrawn for non-attendance will not receive a grade and, therefore, will display no activity for those classes on their transcript. Students who are administratively withdrawn for non-attendance are eligible to register for classes in the current term or any subsequent term after paying their balance in full. However, they will not be eligible to re-enroll in the classes from which they were administratively withdrawn.

## Administrative Withdrawal for Non-Payment

Students who are administratively withdrawn for non-payment will be subject to an Administrative Withdrawal Fee of \$10.00 per registered credit hour at the time of the withdrawal and will not be charged tuition and college service fees. Students who are administratively withdrawn for non-payment will receive a grade of "W" for those classes, which will display on their transcript. Students who wish to continue in classes from which they were withdrawn may re-enroll in those classes prior to the end of the semester or term after making payment for full tuition, college service fees, and late fees. Students who re-enroll in classes will receive a Re-enrollment Refund equal to one half of the assessed Administrative Withdrawal Fee.

## Administrative Withdrawal for Violations of the Student Code of Conduct

Students who violate the student code of conduct are subject to disciplinary sanctions, including administrative withdrawal from a single class or multiple classes, as well as the imposition of registration restrictions at the course, discipline, or program level. Registration restrictions may also limit students' access to register for classes based on the course delivery method. Students who are administratively withdrawn for violations of the student code of conduct will be charged full tuition and fees for the classes from which they were administratively withdrawn. Students who are administratively withdrawn for violations of the student code of conduct will receive a grade of "W" for that class or for those classes, which will display on their transcript. Eligibility to register for classes in subsequent terms and sessions will depend on the violation. Students who have been sanctioned with a registration restriction will have a registration hold placed on their account, and they will be required to register for classes through the Records and Registration Office after meeting with their assigned advisor or designated college official. Students who are eligible to register for classes in subsequent terms or sessions may do so after paying their balance in full. Some students will not be eligible to register for classes in subsequent terms and sessions.

## Repeating a Course

Students may repeat a course as many times as they wish for an improved grade. However, students may not repeat a course and then choose the better of the grades. The most recent grade will be used to determine the cumulative grade point average and only credits from the repeated course will be counted toward graduation requirements. Courses taken at other institutions may be accepted for replacement of courses taken at Iowa Western. However, the original grade will remain on the student's Iowa Western record and will be used to determine the cumulative grade point average.

## Academic Transcripts

Official transcripts may be ordered online through the National Student Clearinghouse, [www.studentclearinghouse.org](http://www.studentclearinghouse.org), for a nominal fee. No transcript of credit will be issued until all financial and other obligations to the College have been met. Unofficial transcripts are available to students through Self Services in ROC and can be requested at the Records and Registration Office. Unofficial transcripts provided by the Records and Registration Office will be marked "Student Copy".

## Legal and Preferred Name

Iowa Western Community College recognizes that some students choose to identify themselves within the campus community with a preferred first name that differs from their legal name. As long as the use of the preferred first name is not for the purpose of misrepresentation, the College acknowledges that a preferred name can and should be used wherever possible, except when use of legal name is required for college business or legal need.

## Legal Name Change

Students who wish to change their legal first, middle, and/or last name must request the change through the Records and Registration Office. Legal name changes require legal documentation, including legal ID, driver's license, passport, birth certificate, court order or other legal document, or marriage license. Examples of use of required use of legal name during the course of college business include college transcripts, employment and payroll documents, financial aid documents, account statements, and immigration documents.

## Preferred Name Change

Students who wish to add or change their preferred first name must request the change through the Records and Registration Office. After a change to preferred first name has been processed, it may be necessary to request a new ID card, username, and/or email account name through the Help Desk. Preferred first name will be used whenever possible during the course of college business, including but not limited to course rosters, student/staff ID cards, housing records, and IWCC email accounts. It is a violation of this policy to indicate a preferred name for the purposes of misrepresentation or fraud. Fraud and misrepresentation may also violate Iowa Western Community College Code of Conduct. In some situations, it may be necessary for students who have changed their preferred name to clarify that their preferred name is different from their legal name.

## Retention of Student Records

Iowa Western Community College retains the official academic record of enrollment and credit earned in the college's credit programs (transcript) in perpetuity.

Students who believe there is an inaccuracy in their official academic record (transcript) must notify the Records and Registration Office immediately. After student enrollment documents are destroyed, the official academic transcript cannot be changed. The transcript is the final, accurate record of academic accomplishment.

## Access to Student Information

Student rights concerning access to education records are spelled out in Federal Public Law 98-380 as amended by Public Law 93-568 and in regulations published by the Department of Education. The law and regulations require educational institutions to:

- Provide students the opportunity to inspect their education records.
- Provide students the opportunity to challenge through a hearing the content of their education records if it is believed that they contain information that is inaccurate, misleading, or in violation of the right of privacy. Grades are not subject to challenge.
- Limit disclosure of information from the student's record to those who have the student's written consent or to officials specifically permitted within the law, such as college officials and - under certain conditions - local, state, and federal officials.
- Students who wish to grant access to their education and/or financial records may do so by submitting an Access to Student Information Consent Form to the Records and Registration Office. Access to education records is limited to the following elements of the student's education record: class schedule, transcript of final grades, and progress reports. Access is given only at the Records and Registration Office and only when the person presents photo identification. Under no circumstances will information be disclosed over the phone. Access to financial records is limited to the following elements of the student's financial record: grants, loans, financial aid documents, statements and billing. Access is given by Financial Aid and the Cashier by phone only when the designated person provides the privacy code established by the student. The authorization is valid while the student is enrolled at Iowa Western Community College. The consent to release information may be revoked at any time by written request from the student.

- The student may assign Proxy access by completing the form on the Student Self-Service page on ROC. Access to education records is limited to the following elements of the student's education records: progress reports and final grades. Access to financial records is limited to the following elements of the student's financial record: account activity, account summary, make a payment, financial aid information, and tax information. The student selects which elements the Proxy will be able to access. Access may be revoked at any time by the student.

The federal Family Educational Rights and Privacy Act of 1974 (FERPA) prohibits Iowa Western from releasing protected information on current or former students to external third parties for purposes of solicitation without students' express written permission. No exceptions to these prohibitions are permissible pursuant to this policy statement. Iowa Western is permitted to disclose, without consent, information considered to be "directory" information. In effort to protect the privacy of current and former students, Iowa Western typically does not honor third-party requests for Directory Information, even though the college is permitted to do so, unless the release of information unless required by law, court order, or through data-sharing agreements. The following information is considered to be Directory Information:

- student's name
- address
- phone number
- program of study
- participation in officially recognized activities
- athletic team members' weight and height
- dates of attendance (start and end of semester)
- degrees
- awards received
- most recent previous educational institution attended
- enrollment status (full-time, part-time, or not enrolled)

Students who object to the disclosure of any of the above information may notify the Records and Registration Office in writing. Students may file a complaint with the Department of Education if they believe that their rights under the law have been violated and if efforts to resolve the situation through Iowa Western Community College appeal channels have proven unsatisfactory.

## Tuition and Fees

Tuition and fees are assessed to a student's account upon registration. For the purposes of this catalog, regular-term classes are defined as sixteen-week classes that follow the semester dates on the Academic Calendar as approved by the Board of Trustees.

### Tuition Schedule

Iowa Resident	\$209.00 per credit hour
Non-Iowa Resident	\$214.00 per credit hour
International Student	\$214.00 per credit hour

## Fee Schedule

College Services Fee	\$17.00 per credit hour
International Student Fee	\$100.00 per credit hour
Administrative Withdrawal Fee	\$10.00 per credit hour
First Time Enrollment Fee	\$35.00
Payment Plan Fee	\$25.00
Late/Missed Payment Fee	\$25.00

Additional fees may be assessed for other services, as well as for specific programs and courses. The Board of Trustees reserves the right to change the tuition and fee schedule at any time without prior notification to either applicants or students.

### Additional Program & Course Fees

Dental Assisting Program	Dental Assist Viewpoint Fee	\$131.00
Dental Hygiene Program	Dental Hygiene Viewpoint Fee	\$131.00
ADN-106	ATI Testing - Course Fee	\$424.00
ADN-106	ViewPoint (VP) - Course Fee	\$65.00
ADN-292	ATI Testing - Course Fee	\$424.00
ADN-421	SIM/Lab - Course Fee	\$25.00
ADN-421	ATI Testing - Course Fee	\$424.00
ADN-760	SIM/Lab - Course Fee	\$25.00
ADN-760	Nursing Pin - Course Fee	\$18.00
AGV-100	Viewpoint Fee	\$20.00
AGV-104	Lab Consumables/Dissection Materials	\$20.00
AGV-108	Lab Consumables/Dissection Materials	\$20.00
AGV-110	Lab Supplies, Wound Care, Casting, Needles	\$25.00
AGV-135	Lab Supplies, Microscope Slides, Testing Solutions	\$40.00
AGV-136	Lab Supplies, Microscope Slides, Testing Solutions	\$40.00
AGV-147	Vaccines, Blood Draw Vials and Equipment	\$30.00
AGV-170	Anesthesia/Surgical Supplies	\$25.00
AGV-185	Anesthesia/Surgical Supplies	\$25.00
ART-120	Art Supplies	\$25.00
ART-123	Art Supplies	\$25.00
ART-125 (Online sections)	Adobe Fee	\$80.00
ART-133	Art Supplies	\$25.00
ART-134	Art Supplies	\$25.00
ART-143	Art Supplies	\$60.00
ART-151	Art Supplies	\$15.00
ART-196	Art Supplies	\$50.00
AUT-116	Automotive Lab Consumables Fee	\$50.00
AUT-220	Automotive Lab Consumables Fee	\$50.00
AUT-249	Automotive Lab Consumables Fee	\$50.00
AUT-421	Automotive Lab Consumables Fee	\$50.00
AUT-506	Automotive Lab Consumables Fee	\$50.00
AUT-521	Automotive Lab Consumables Fee	\$50.00
AVM-120	FAA Mechanic Certification Testing Fee	\$142.50
AVM-140	FAA Mechanic Certification Testing Fee	\$142.50
AVM-181	FAA Mechanic Certification Testing Fee	\$142.50
AVM-182	FAA Mechanic Certification Testing Fee	\$142.50
AVM-185	FAA Mechanic Certification Testing Fee	\$142.50
AVM-186	FAA Mechanic Certification Testing Fee	\$142.50
AVM-191	FAA Mechanic Certification Testing Fee	\$142.50
AVM-192	FAA Mechanic Certification Testing Fee	\$142.50
AVM-193	FAA Mechanic Certification Testing Fee	\$142.50
AVM-194	FAA Mechanic Certification Testing Fee	\$142.50
BIO-105	Consumables, Lab Supplies, Specimens	\$15.00
BIO-112	Dissection Materials	\$20.00
BIO-113	Dissection Materials, Specimens	\$20.00
BIO-157	Lab Supplies/Dissection Materials	\$20.00
BIO-168	Lab Supplies/Dissection Materials	\$30.00
BIO-173	Lab Supplies/Dissection Materials	\$30.00
BIO-186	Lab Supplies/Specimens	\$30.00
CHM-122	Lab Supplies and Chemicals	\$25.00
CHM-132	Lab Supplies and Chemicals	\$25.00
CHM-166	Lab Supplies and Chemicals	\$25.00
CON-170	Construction Lab Consumables Fee	\$75.00
CON-171	Construction Lab Consumables Fee	\$75.00
CHM-176	Lab Supplies and Chemicals	\$25.00
CHM-263	Lab Supplies and Chemicals	\$40.00
CHM-273	Lab Supplies and Chemicals	\$40.00
CON-266	OSHA 30-hour Card Fee	\$30.00
DEA-321	Personal Protective Equipment/Lab Supplies	\$15.00
DEA-403	Impression & Restorative Materials/Lab Supplies	\$40.00
DEA-502	PPE/Infection Control Materials	\$65.00
DEA-602	Lab Supplies/Polish/Fluoride	\$25.00
DHY-174	PPE/Lab Supplies	\$40.00
DHY-184	Creighton Fee	\$750.00
DHY-293	PPE/Clinical Supplies	\$75.00
DHY-295	Creighton Fee	\$750.00

DHY-304	Creighton Fee	\$750.00
DRA-162	Stage Supplies	\$35.00
DSL-846	Diesel Lab Consumables Fee	\$50.00
DSL-856	Diesel Lab Consumables Fee	\$50.00
DSL-863	Diesel Lab Consumables Fee	\$50.00
DSL-876	Diesel Lab Consumables Fee	\$50.00
DSL-886	Diesel Lab Consumables Fee	\$50.00
DSL-893	Diesel Lab Consumables Fee	\$50.00
ECE-153	Criminal Background Check	\$45.00
ECE-244	Fingerprinting, Background Check	\$45.00
EDU-219	Fingerprinting, Background Check	\$45.00
ELE-179	Electrical Lab Consumables Fee	\$50.00
ELE-207	Electrical Lab Consumables Fee	\$50.00
ELE-326	Electrical Lab Consumables Fee	\$50.00
ELT-850	Design Project Fee	\$50.00
ENV-111	Field Trip Expenses	\$21.00
GRA-104 (Online sections)	Adobe Fee	\$80.00
HCR-201	HVAC Lab Consumables Fee	\$75.00
HCR-301	HVAC Lab Consumables Fee	\$75.00
HSC-172	HSC 172 Course Fee	\$40.00
IND-109	OSHA 10-hour card and PPE fee	\$25.00
MAP-353	Clinical Procedures Course Fee	\$131.00
PLU-178	Plumbing Lab Consumables Fee	\$50.00
PLU-188	Plumbing Lab Consumables Fee	\$50.00
PNN-228	Viewpoint (VP) - Course Fee	\$66.00
PNN-228	ATI Testing - Course Fee	\$424.00
PNN-229	ATI Testing - Course Fee	\$424.00
PNN-721	Lab Bag/Kit - Course Fee	\$22.00
PNN-723	Nursing Pin - Course Fee	\$73.00
PNN-723	SIM/Lab Fees - Course Fee	\$25.00
PNN-723 (CB sections)	MyClinicalExchange	\$25.00
PNN-740 (CB sections)	MyClinicalExchange	\$25.00
PNN-760 (CB sections)	MyClinicalExchange	\$25.00
SUR-134	Intro Surgical Tech Course Fee	\$131.00
SUR-320	Adv. Surgical Tech Course Fee	\$250.00
WEL-117	Welding Lab Consumables Fee	\$50.00
WEL-149	Welding Lab Consumables Fee	\$75.00
WEL-192	Welding Lab Consumables Fee	\$50.00
WEL-208	Welding Lab Consumables Fee	\$50.00
WEL-240	Welding Lab Consumables Fee	\$75.00
WEL-256	Welding Lab Consumables Fee	\$50.00
WEL-259	Welding Lab Consumables Fee	\$50.00
WEL-301	Welding Lab Consumables Fee	\$75.00

## Payment Arrangements

Payment arrangements that cover the entire balance of a student's account, including tuition, fees, campus housing, and meal plans, must be made each semester by the payment deadline. The payment deadline is posted online and is available at the Business Office. Payment arrangements include Financial Aid, paying in full, setting up an automatic payment plan through Touchnet, or a combination of these options. Payment in full can be made online through Touchnet, over the phone with a debit card or credit card, by mail with a check, or by going to the Cashier's desk and paying with cash, check, debit card, or credit card. The College reserves the right to administratively withdraw students who fail to make payment arrangements by the payment deadline. Students who fail to make payment arrangements by the Payment Deadline may be assessed a monthly Late/Missed Payment Fee until payment arrangements have been made. Failure to make payment arrangements may result in the student account being referred to an outside collections agency and/or credit bureau. Once in collections, the student account may be subject to collection fees. IWCC also participates in the Iowa Statewide Setoff program, and any debts due to IWCC may be collected from a student's State of Iowa tax refund and other State income. Iowa Western reserves the right to take any and all actions necessary to collect the debt.

## Touchnet Automatic Payment Plan

Iowa Western Community College partners with a company called Touchnet to offer students a variety of payment plans to help them finance their education. Payment plans charge a \$25 enrollment fee and must be set up every semester by the payment deadline. Payment plans may be used for tuition, fees, books and supplies, campus housing, and meal plans. Specific dates for payment are posted online and are available at the Cashier's desk. If there are

any changes made to a student's balance, the Touchnet payment plan will automatically update to reflect the changes, so installment amounts may increase/decrease based on the changes that have occurred, including adjustments in Financial Aid. The student must make all payment installments as scheduled. The College reserves the right to administratively withdraw students who fail to meet the terms and conditions of the payment plan. Failure to fulfill payment arrangements may result in the student account being referred to an outside collections agency and/or credit bureau. Once in collections, the student account may be subject to collection fees. IWCC also participates in the Iowa Statewide Setoff program, and any debts due to IWCC may be collected from a student's State of Iowa tax refund and other State income. Iowa Western reserves the right to take any and all actions necessary to collect the debt.

## Refund Options

Iowa Western delivers your refund with BankMobile Disbursements, a technology solution, powered by BMTX, Inc. Visit this link for more information: <https://bankmobiledisbursements.com/refundchoices/> You may also contact the Iowa Western Business Office for refund information via email at [refunds@iwcc.edu](mailto:refunds@iwcc.edu), phone (712) 325-3213, or in person at the Cashier's Desk located in the Welcome Center – Clark Hall.

\*High School students are excluded from selecting a refund preference with Bankmobile Disbursements.

## Refund of Tuition and Fees

Students who officially withdraw from college or drop classes before the first calendar week of a regular term will be refunded all tuition and fees, including first-time enrollment, college services, program, and course fees. Students who withdraw from college or drop classes during the first week of a regular term will be refunded all tuition and fees except the first-time enrollment fee. Students who withdraw from college or drop classes during the second week of a regular term will be refunded fifty percent of tuition as well as fifty percent of program and course fees; neither college services fees nor the first-time enrollment fee will be refunded. Even if a student adds a class in place of the one that is dropped, no fees will be refunded on the dropped class. Students who withdraw from or drop classes after the second week of a regular term will not be refunded any tuition or fees. Deadlines for refund of tuition and fees for all terms and sessions are posted online at [www.iwcc.edu](http://www.iwcc.edu) and in ROC, and they are also available at the Records and Registration Office.

## Tuition Credit for Active Military Duty

Students called to active military duty may be provided tuition credit for courses in which they are currently enrolled and cannot complete. In order to receive the tuition credit, the students must request one of the following options: 1.) apply current tuition and fees to a future term, 2.) receive a full refund for current term, 3.) arrange with each instructor a procedure for completion of course requirements, agreeing to a time limit consistent with college incomplete procedures, or 4.) receive a partial tuition and fees credit for classes for which completion arrangements are not possible.

The request for tuition credit must be made in writing to the Registrar and must be accompanied by a copy of the Involuntary Activation Mobilization Orders from the military unit of assignment.

## Financial Aid

Iowa Western Community College provides financial aid to students needing help in financing their college education. Most financial aid is awarded to students who demonstrate financial need. Through coordination with federal and state agencies, assistance is available in the form of grants, loans, and college work study.

### Application Procedures

The student must first complete an Application for Admission to Iowa Western Community College. Financial aid cannot be awarded until the student is accepted to a program of study leading to a degree, certificate, or diploma. The student must then complete a Free Application for Federal Student Aid (FAFSA). The FAFSA is available online at [www.fafsa.gov](http://www.fafsa.gov) and must be completed in order for the college to determine eligibility for grants, loans, and college work study. Within a week of submitting the FAFSA, the student, as well as any colleges listed on the FAFSA, will receive a Student Aid Report (SAR). The SAR summarizes the financial information the student entered on the FAFSA, and it is used by the college to determine how much federal and state aid to offer the student. The Financial Aid Office may be required to request forms and documentation from the student, such as federal tax transcripts, in order to determine eligibility. Finally, the student will receive a Financial Aid award notification, which is prepared and sent by the Iowa Western Community College Financial Aid Office. The award notification indicates all types of financial aid for which the student is eligible. If the student wishes to borrow from the loan program, the student will need to authorize their loans in ROC in addition to completing Loan Entrance Counseling and a Master Promissory Note.

### Application Dates

The Free Application for Federal Student Aid (FAFSA) may be submitted anytime during the year. However, priority consideration will be given to application information received by the dates below. Application information received after these dates is processed only as funding allows. Students who want maximum consideration for financial aid should apply early so the required information is received in the Financial Aid Office by the following dates:

Fall Semester	May 1
Spring Semester	November 1
Summer Term	March 1

The Financial Aid Office will make every effort to meet the financial needs of each qualified student. The amount of assistance will depend on enrollment and eligibility criteria, as well as the availability of federal, state, and other agency funds.

### Types of Financial Aid

There are three major types of financial aid available: Grants, which are awarded on the basis of need and do not need to be repaid; Loans, which are awarded on the basis of need and/or eligibility and must be repaid once the student leaves college or does not continue in college on at least a half-time basis; and Employment (College Work Study), which is awarded on the basis of need and requires work for paid wages. Sources of Financial Aid include the State of Iowa and the United States Federal Government.

### Awarding Process

Each applicant will receive an award notification that indicates their financial aid eligibility. This award notification will be sent only after

requested forms and verification documents have been received and reviewed, and eligibility has been determined. Forms and documents required for verification, as determined by the Federal Government or the Iowa Western Community College Financial Aid Office, often include, but are not limited to, federal tax transcripts, proof of citizenship status, and proof of selective service registration.

Financial aid funds will be used to pay tuition, fees, campus housing, meal plans, and books, in that order. Any balance of remaining funds will not be released directly to the students before the fourth week of class. Balances will be released only after all institutional bills have been paid in full. The e-Cashier Automatic Payment Plan is also available for students whose financial aid award does not cover their account balance.

### Eligibility

In order to be eligible to receive Federal Student Aid, the student must meet eligibility requirements. The student must be a "declared student," which is defined as a student who has applied for admission to a program of study offered by the College, has met the requirements for admission to the program, and been accepted into the program. The student must also be enrolled in an eligible program, which is defined as a program of study that admits declared students who are either high school graduates or have received a high school equivalency diploma. The eligible program must also offer a degree, diploma, or certificate. In addition, the student must be enrolled in eligible courses. Only courses required for graduation from an eligible program will qualify for financial aid eligibility. Non-credit classes do not qualify for aid eligibility, and credits received by transfer or credit by exam, including CLEP, do not count as eligible courses for financial aid. Students receiving aid may repeat a course once after receiving a grade of A, B, C, D, P, or Q.

### Satisfactory Academic Progress (SAP Policy)

Iowa Western has established a Satisfactory Academic Progress (SAP) policy in accordance with federal financial aid regulations. These regulations require a student to move toward the completion of a degree, diploma, or certificate within an eligible program when receiving financial aid. Federal financial aid regulations state that all periods of enrollment count when assessing progress, regardless of whether or not aid was received.

### Timing/Frequency of Satisfactory Academic Progress Calculation

Satisfactory Academic Progress for financial aid recipients will be calculated after each term of attendance.

### Satisfactory Academic Progress Standards

As required by federal financial aid regulations, Iowa Western's Satisfactory Academic Progress policy has three standards by which a student's cumulative academic record must be compared. To be considered in compliance, a student must meet all three standards outlined in the policy.

#### Standard 1: Pace of Completion

A student must achieve a minimum pace. Pace is the percentage of total attempted credit hours that are completed. A student must complete at least 67% of cumulative credit hours attempted. Pace is calculated by dividing the cumulative number of completed credits by the cumulative number of attempted credits. Grades of A, B, C, D, and P are considered completed for purposes of financial aid. Grades of

F, I, Q, and W are not considered completed for purposes of financial aid.

### **Standard 2: Cumulative Grade Point Average**

A student must earn and maintain a minimum cumulative grade point average of 2.00.

### **Standard 3: Maximum Timeframe**

A student must complete a degree, diploma, or certificate within a 150% timeframe. Timeframe is calculated by multiplying the total number of credits required for the degree, diploma, or certificate by 150% (e.g. an associate degree that requires 64 credits must be completed with a maximum of 96 credit hours). Hours attempted are the sum of all credit hours recorded at Iowa Western, all transfer hours accepted for credit toward the applicable program of study, all developmental education credits, all ESL credits, all courses passed by examination, and all credit earned through prior learning. All periods of the student's enrollment count, even periods in which the student did not receive financial aid.

## **Satisfactory Academic Progress Statuses**

A student will be assigned one of four Satisfactory Academic progress statuses each term which determines a student's eligibility for financial aid.

### **Status 1: Good Standing**

This status is assigned to a student who meets all three Satisfactory Academic Progress standards or who applies for financial aid for their first term of attendance at Iowa Western. To remain in Good Standing, a student must meet all three SAP standards each term. A student in Good Standing is eligible for financial aid.

### **Status 2: Warning**

This status is assigned to a student after their first term of not meeting the minimum pace of completion and/or minimum cumulative grade point average. A student on Warning is eligible for financial aid.

### **Status 3: Termination**

This status is assigned to a student when they have two consecutive terms of not meeting the Satisfactory Academic standards. A student on Termination is not eligible for further financial aid.

### **Status 4: Probation**

This status is assigned to a student when their financial aid appeal has been approved. A student on Probation is eligible for financial aid.

## **Treatment of Courses for Satisfactory Academic Progress**

When it comes to assessing and calculating Satisfactory Academic Progress, the college treats various courses and credit opportunities in a manner that is specific to each.

### **Audited Courses**

A student may not use financial aid to pay for audited courses. The credits earned through audited courses do not count toward the number of attempted credits or the number of earned credits. They do, however, count toward the maximum timeframe.

## **Repeated Courses**

A student may use financial aid to repeat a course that they failed, which is defined as earning a grade of a "F" or a "Q". A student may also use financial aid to repeat a successfully completed course one time. Successful completion of a course is defined as earning a grade of "D" or higher; it also includes "P" grades. Repeated courses count in the calculation of pace of completion, grade point average, and maximum time frame.

## **College Level Examination Program (CLEP)**

A student may not use financial aid to pay for CLEP exams. The credits earned through CLEP count as attempted and earned credits and they count toward the maximum timeframe, but they do not affect the cumulative grade point average.

## **Transfer Courses**

Credits transferred to Iowa Western from another institution count as attempted and earned credits, and they count toward the maximum timeframe. They do not, however, affect cumulative grade point average.

## **English-as-a-Second Language (ESL) Courses**

ESL courses count in the calculation of pace of completion and cumulative grade point average, and they count toward the maximum timeframe.

## **Developmental Courses**

A student admitted into a financial-aid-eligible program is eligible to receive federal aid for up to 30 developmental credit hours. Developmental credit hours count as attempted and earned credits, and they count toward the maximum timeframe. They also affect the cumulative grade point average.

## **Concurrent Enrollment Courses**

A high school student enrolled in Iowa Western courses that will apply toward their high school graduation requirements and earn him or her credits at Iowa Western at the same time is not eligible for federal aid. When a concurrent enrollment student graduates from high school, enrolls in a financial-aid-eligible program at Iowa Western, and applies for financial aid, credits for Iowa Western courses taken under a concurrent enrollment program count as attempted and completed credits and they count toward the maximum timeframe. These credits also affect the cumulative grade point average.

## **Earning an Additional Degree**

Once a student has earned an academic credential (certificate, diploma, or associate degree) at the college, they may pursue additional academic credentials. The maximum timeframe standard still applies. Once a student reaches the maximum timeframe for their declared program of study, they will be placed on financial aid termination and an approved appeal is required to receive further financial aid.

## **Student Notification**

Financial aid recipients will be notified of status once Satisfactory Academic Progress is calculated after the end of each term. Notice will be sent to their official Iowa Western email.

## **Reinstatement of Good Standing**

A student can return to Good Standing by raising their cumulative grade point average to 2.00 or higher and by raising their cumulative credit

completion rate to 67% or higher, as long as they have not reached or exceeded the maximum timeframe for their program of study.

### Financial Aid Appeal Process

To regain eligibility for financial aid after Termination, a student is required to attain a minimum cumulative grade point average of 2.00 or higher and/or to raise their pace of completion to 67% at their own expense. The student may also appeal Termination status by completing a Termination Appeal Form and Academic Improvement Plan.

#### Circumstances for Appeal

A student may submit a written appeal documenting the special circumstances that prevented him or her from meeting the three minimum standards. Special circumstances that may be considered include: personal illness or accident, serious illness or death within immediate family, or other circumstances beyond the reasonable control of the student.

#### Filing an Appeal

The student must complete an appeal form, which is available online at [www.iwcc.edu](http://www.iwcc.edu). In addition, appeal forms are available at the Welcome Center. An Academic Improvement Plan is required as part of the appeal process. The student will be directed to meet with an Enrollment Advisor to develop an Academic Improvement Plan that must be submitted with the appeal.

After review by the Satisfactory Academic Progress Committee, a written response of the Committee's decision will be communicated to the student by a notice sent to their official Iowa Western email. If approved, the student will have their financial aid reinstated; however, they will remain on Probation for the next term.

A student on Probation must pass all of their classes each term and achieve a 2.00 term grade point average or they will be placed on Termination. A student must follow the Academic Improvement Plan until their record meets the minimum Satisfactory Academic Progress standards. If a student fails to follow the Academic Improvement Plan, they will be placed on Termination after the next Satisfactory Academic Progress calculation.

#### Filing an Appeal of the Satisfactory Academic Progress Committee's Decision

A student who is denied an appeal may appeal the decision of the Satisfactory Academic Progress Committee to the Director of Financial Aid. The Director will review the written appeal with a Satisfactory Academic Progress Committee member and respond to the appeal within 72 hours from the date the appeal was received. In order to be considered, the appeal must have documentation that was not part of the original appeal to the Satisfactory Academic Progress Committee. The Director's decision of this appeal is the final step of the Financial Aid Appeal Process.

### Return of Federal Financial Aid Funds

Students who receive Title IV financial aid (Federal Pell Grant, Federal Supplemental Educational Opportunity Grant, and Federal Direct loans) are subject to federal return of Title IV funds statutes. These regulations apply to recipients of Title IV financial aid who completely withdraw from college or who stop attending all classes during the enrollment period. The College must determine the amount of Title IV financial aid the student earned and return the unearned aid to the

respective federal financial aid programs. Unearned aid will be returned to the federal programs in the following order: Loans (Federal Unsubsidized Loans, Federal Subsidized Loans, and Federal PLUS Loans), Grants (Federal Pell Grant and Federal Supplemental Educational Opportunity Grant), and then other Title IV funds. The College must return the funds as soon as possible but must do so no later than 45 days after the College determines the withdrawal date or last date of attendance.

If a student officially withdraws from the college prior to completing 60% of the semester, financial aid awards will be adjusted accordingly and unearned aid will be returned to the appropriate federal financial aid program. If a student officially withdraws from the college after completing 60% or more of the semester, no financial aid adjustment or return of funds is necessary. The percent of the semester completed is based on calendar days from the first day of the semester through the last scheduled day of finals. This includes weekends and mid-semester breaks of less than five days.

## Financial Assistance

### Scholarships

Both institutional and privately funded scholarships are administered by Iowa Western Community College. Iowa Western Community College scholarships are awarded on the basis of academic achievement, community and/or extracurricular involvement and financial need. Iowa Western scholarship opportunities are available for new and continuing students, and students can apply through a single application that is available online. Upon completion of the application, students will be considered for all available scholarships. The deadline for consideration for the fall semester is April 22, and deadline for consideration for spring semester is November 15. Applications remain on file for one academic year. All scholarship recipients must be a high school graduate, or the equivalent, or have received a high school equivalency diploma. More information regarding the availability of and application procedures for the various scholarships is available online.

### Veteran Services

Iowa Western Community College is committed to assisting all students who are eligible to receive Veterans Administration educational entitlements. Staff members are available to assist in the application process as well as any activity that is unique to Veterans Administration requirements. Inquiries concerning eligibility and pay should be made directly to the Regional Veterans Administration Office (1-888-442-4551) by the student. Additional information is also available at [www.gibill.va.gov](http://www.gibill.va.gov).

### Veterans Benefits and Transition Act of 2018, Section 103 Compliance:

Iowa Western Community College will ensure that students using Chapter 31 (Veterans Education and Rehabilitation Benefit) or Chapter 33 (Post 9/11 Veterans Education Benefit) will not be imposed any penalty including 1) the assessment of late fees; 2) the denial of access to classes; 3) libraries or other institutional facilities and/or 4) the requirement that a Chapter 31 or Chapter 33 recipient borrow additional funds to cover the individual's ability to meet their financial obligations to the institution due to the delayed disbursement of a payment by the U.S. Department of Veterans Affairs.

### Vocational Rehabilitation

Vocational Rehabilitation provides assistance through the area vocational rehabilitation office. The student must contact the office for application information. Eligibility for the Federal Pell Grant program must be determined to receive Vocational Rehabilitation assistance.

## Workforce Investment Act

Workforce Investment Act funds, which can help pay for tuition as well as housing, transportation, and childcare costs, may be available for students who meet the eligibility requirements of the Act. For more information and application materials, please call (712) 325-3210.

## Academic Information

### Student Responsibility for Catalog Information

Each student is responsible for the information contained within this catalog. Failure to read the regulations will not be considered sufficient reason for noncompliance with such regulations.

The Board of Trustees of Iowa Western Community College reserves the right to revise and modify any curriculum, instructional program, and/or course of study without prior notification of applicants or students. Such revisions and modifications will apply to prospective students and may be applicable to students currently enrolled.

### General Education Philosophy

General education courses are an important component of the community college learning experience. General education imparts common knowledge, promotes intellectual inquiry, and stimulates the examination of different perspectives, thus enabling people to function effectively in a complex and changing world.

General education is not exclusively related to a student's technical or professional field but is the part of a degree or diploma program that prepares students to meet personal, social, and lifelong learning needs. At Iowa Western Community College, the goal of general education is to enhance the development of the individual into a responsible, understanding, and productive citizen. The integration of career goals, with a knowledge of culture, society, global issues, and challenges, will prepare the student for their place in the future.

General education requirements will vary by program of study. Students should refer to the degree requirements section of the catalog for specific requirements.

### Arts and Sciences/College Transfer Programs

All Arts and Sciences college transfer students must select a program of study, and they are encouraged to seek an associate degree. Each program of study is designed to provide the opportunity to explore in depth a specific area of academic interest. The Associate of Arts and Associate of Science degrees are transferable to four-year institutions. Each of the Arts and Sciences programs have been developed by the faculty in that specific field and are to be used as guidelines for student planning and academic advising.

### Career and Technical Programs

A career and technical program is a professionally developed sequence of learning experiences designed to prepare students for immediate entry into the workforce. Graduates of these programs receive certificates, diplomas, Associate of Applied Arts, or Associate of Applied Science degrees. Students enrolling in Career and Technical programs are required to consult with the program chair to develop individual program plans. In many instances, a carefully developed program plan provides for transferability of courses leading to a Bachelor's degree.

## Academic Load

Twelve or more credit hours is considered full-time status for the fall and spring semesters, as well as the summer session. The normal course load for a student expecting to graduate with an Associate in Arts, Associate in Science, or Associate in General Studies degree is 15-16 credit hours per semester. Students in Career and Technical programs must follow the approved curriculum.

Students are limited in the number of hours they may carry. In the fall and spring semesters, students in Arts and Science programs may take up to 20 hours, and students in Career and Technical programs may take up to 21 hours. In the summer term, all students are limited to 12 hours. This limitation is intended to help the student, and, if good scholarship is demonstrated, a petition for increased load may be granted in subsequent terms. Students who wish to petition for an academic overload should meet with an Academic Advisor in the Advising and College Success Programs department.

## Academic Classification

A student's academic classification is determined by the number of semester credit hours of academic credit they have earned. A student who has earned 1 through 32 credits is classified as a freshman, and a student who has earned 33 or more credit hours is classified as a sophomore.

## Attendance Policy

Faculty record student attendance for every class according to the requirement set forth in the Faculty Handbook. Attendance may be verified by sources both on and off campus. These sources include, but are not limited to, Iowa Western Community College employees; the Veterans Administration; high school guidance counselors; Iowa Western accreditors; personnel from local, state, or national government; private human services agencies; and scholarship-granting organizations. This policy is subject to the limitations outlined in the Family Educational Rights and Privacy Act (FERPA).

## Arranged Course Study

Students may enroll in a course on an individual basis with special permission of the appropriate Division Dean and the Vice President of Academic Affairs. Normally, this will only be permitted when a specific course has not been scheduled during the semester or when a serious schedule conflict has occurred.

## Audit Course Study

Audit enrollment in courses provides students the opportunity to attend class as a non-credit participant. Audit enrollments require that the student and instructor agree about what portion(s) of the course the student plans to audit and the requirements the instructor has about the student's class attendance and participation. If the student fulfills the agreement for the audit, the student will receive the symbol of "N" (Audit) for the course and it will be entered on the student's academic transcript. If the student does not fulfill the audit agreement, the Records and Registration Office, upon request of the instructor, will delete the course from entry on the student's academic transcript. The audit enrollment symbol carries no credit or grade point value and is not eligible for student financial aid. With the permission of the instructor, academic dean and the Records and Registration Office, a student may change from credit enrollment status to audit status through the twelfth week of the semester or comparable summer semester period. Once a student opts to audit a course, the audit status cannot be changed to receive a letter grade. Registration procedures and fees are the same as for regular class enrollment. Students taking courses for credit may displace auditors if the courses are full. Courses that cannot be audited include:

- Internships
- Practicums
- Clinical courses
- Arranged courses
- Courses with the following prefixes:
  - ADN
  - AGV
  - AVM
  - DEA
  - DHY
  - ECE
  - HSC
  - MAP
  - PNN
  - SUR

## Cooperative Education/Internship Programs

Students may earn and apply up to eight semester hours of cooperative education and/or internship credit toward a degree or diploma.

### Cooperative Education

This program enables students to participate in periods of off-campus work experience closely related to classroom theory and educational goals. Cooperative Education students may or may not be paid for services, depending on an agreement between employer and student. Cooperative Education stems from the principle that the vast world of experience has a lot to offer students and can enhance classroom learning. Work experience contributes to the development of positive work habits such as honesty, punctuality, courtesy, cooperative attitudes, and willingness to learn. Some work experience may modify ideas and plans concerning career choices.

All Cooperative Education courses require approval of the program chair. In addition, the student must have successfully completed a minimum of twenty semester hours toward degree and have achieved a grade point average of 2.0 or greater.

### Internships

This program enables students to participate in periods of off-campus work experience closely related to classroom theory and educational goals. Students participating in the internship may or may not be paid for experience, depending on the agreement between employer and student. The internship provides the opportunity for the student to enhance their education by gaining actual work experience in their program of study. The experience contributes to the development of positive work habits such as honesty, punctuality, courtesy, cooperative attitudes, and willingness to learn. Technical skills are enhanced.

All internship courses require approval of the program chair. Students must have successfully completed a minimum of twenty semester hours in program and have achieved a grade point average of 2.0 or greater.

### Alternative Credit

When applicable, Iowa Western Community College awards alternative credit to students who have attained knowledge and skills through experience and training outside the traditional college classroom, including non-collegiate institution training, such as armed forces and service schools, and non-credit courses. Students may also earn credit by demonstrating proficiency through successful completion of standardized examinations and departmental exams.

### Credit by Standardized Examination

Students may earn and apply credit hours toward an associate degree, diploma or certificate by meeting minimum score requirements, as recommended by the American Council on Education (ACE) College Credit Recommendation Service, on approved subject-matter tests of the College Level Examination Program (CLEP), Advanced Placement (AP), and DSST (formerly DANES). All test scores must be sent directly from the testing agency to the College. Only credit that can be applied toward the student's degree requirements will be transcribed. Credit received by standardized examinations may not be used to satisfy the residence credit requirement for any degree, diploma or certificate. A maximum of 30 credit hours will be transcribed for CLEP credit. The credit is recorded on the student's transcript without a grade, and therefore, will not be calculated in the student's G.P.A.

### Credit by Departmental Examination

An Iowa Western Community College student may, by requesting and receiving approval of the appropriate program chair and academic dean, challenge an Iowa Western Community College course for which there is no College Level Examination Program (CLEP) test. Credit by departmental examination is a means of being granted alternative credit by satisfactorily demonstrating subject-matter competency through an examination developed, administered, and evaluated by college faculty. Before seeking approval to take a departmental examination, a student should be prepared to show evidence that they have attained equivalent knowledge and skills through work experience, training, or non-credit programs and courses. The student will be assessed 50% of tuition for a challenged course and must pay prior to attempting the departmental exam; charges are not rescinded, nor is payment refunded, if the student does not successfully challenge the course. A course may be challenged by departmental examination one time only. A course may not be challenged if the student has already received a grade in the course at Iowa Western Community College. The credit for a successfully challenged course, defined as a grade of "C" or higher on the departmental examination, is recorded on the student's transcript with a grade of "T" and, therefore, will not be calculated in the student's G.P.A. Credit received by departmental examination shall be used to fulfill degree, diploma and certificate requirements. Course credit by departmental examination may not be used to satisfy the residence credit requirement for any degree, diploma, or certificate. Students challenging courses are hereby given notice that credit awarded by departmental examination may not be accepted for transfer by other institutions.

### High School Articulation

Students may earn college credit for an Iowa Western Community College career and technical program by demonstrating knowledge and skills while in a high school career and technical program. Local high school instructors and Iowa Western Community College instructors have mutually agreed upon the competencies (knowledge and skills) and levels of performance transferable between select high schools and Iowa Western Community College programs.

### Credit Through Training by Non-Collegiate Institutions

An Iowa Western Community College student may be awarded credit for applicable armed service school experiences and training, non-collegiate institution training, or earned professional certifications and licensures. Where applicable, credit shall be awarded in accordance with The American Council on Education's College Credit Recommendation Service, the ACE Guide to the Evaluation of Educational Experiences in the Armed Services, or other approved organizations. Only credit that can be applied toward the student's degree requirements will be transcribed. Credit received through training by non-collegiate institutions shall be used to fulfill degree, diploma and certificate requirements. The credit is recorded on the

student's transcript without a grade, and, therefore, will not be calculated in the student's G.P.A. Credit received through training by non-collegiate institutions may not be used to satisfy the residence credit requirement for any degree, diploma or certificate.

### Credit Through Non-Credit Course Completion

A student who completes a pre-approved non-credit course section at Iowa Western Community College may be eligible to earn semester hour credit that can be applied toward a degree, diploma or certificate. In order for credit to be awarded, the non-credit course must meet the competencies of a credit course, as determined and approved by the appropriate academic dean, as well as the Vice President of Academic Affairs, prior to the start of each course section offering. The student must successfully complete the course, as defined in the pre-approval process, in order for credit to be transcribed. The credit is recorded on the student's transcript without a grade, and, therefore, will not be calculated in the student's G.P.A. Credit received by non-credit course completion shall be used to fulfill degree, diploma and certificate requirements. Credit received by non-credit course completion may be used to satisfy the residence credit requirement for any degree, diploma or certificate. Transcription of such credit doesn't indicate acceptance to the College; a student must submit an application for admission and meet all requirements for admission in order to enroll in credit courses.

### Testing

The Iowa Western Community College Testing Center proctors tests for prospective, new, and current Iowa Western Community College students. The Testing Center proctors a variety of examinations, including tests requiring accommodations, tests for online courses, College-Level Examination Program (CLEP) tests, and Iowa Dental Board examinations. Students may be charged a fee for proctoring services.

### Military Science

Iowa Western Community College offers Air Force Reserve Officer Training Corps courses through the University of Nebraska at Omaha and Army Reserve Officers Training Corps courses through Creighton University.

## Course Formats and Modalities

### Face-to-Face/In-Person

Course activity is organized around scheduled class meetings, that students are required to physically attend.

### Hybrid

Course activity consists of a combination of scheduled face-to-face sessions complemented with an instructor-directed online component. Students are required to physically attend in-person class meetings as well as participate in online course activities.

### Live Virtual

Web-based technologies are used to extend course activity to students at any location with internet access. Students are required to participate in virtual sessions at scheduled times.

### Online

Course activity is done online through instructor-directed learning and is not self-paced. Faculty may offer in-person or online real-time instruction.

## Video Conferencing

Web-based technologies are used to extend course activity to students at remote sites in real time. Students are expected to physically attend class meetings at approved locations.

## Interim Session Courses

Iowa Western Community College offers at least one interim session, lasting approximately two weeks, each academic year. Since the number of days that constitutes an interim session varies from year to year, so too will the number of actual hours spent in class. Course content will be delivered in a manner conducive to learning for the length of the session.

## Service-Learning and Community Service

Service-learning, community service activities, and civic engagement are essential components of the comprehensive education Iowa Western Community College provides its students. Iowa Western Community College offers a variety of ways for students to learn how to become active citizens in both the local community and in our larger diverse global society. Iowa Western Community College students participate in service-learning projects connected to courses, provide valuable community service for local nonprofit organizations, and are encouraged to become active in civic issues.

Faculty and staff, in partnership with representatives of nonprofit community organizations, design service-learning projects based on two main objectives:

1. Meeting community needs, which helps strengthen the community.
2. Advancing the students' understanding of specific course content and related civic learning objectives.

Strong reflective components are built into the course not only to help students consider relationships between service and the course curriculum but also to help students consider the impact service has on personal values and professional goals. There are more than one hundred nonprofit agencies in Council Bluffs and the surrounding areas that utilize volunteers on a regular basis. There are a number of courses in a variety of disciplines at Iowa Western Community College that include a service-learning component within curriculum.

## Course Numbering System

Beginning with the 2006 Fall semester, Iowa Western Community College converted to a statewide common course numbering system. The Iowa community colleges developed a systematic numbering system for all credit courses offered by Iowa community colleges. The goal of the numbering system is to facilitate transfer and articulation processes for community college students in Iowa.

Other colleges differ in curriculum requirements. Students anticipating transfer to another institution are encouraged to plan a program of study in accordance with the degree requirements of the institution to which they plan to transfer. The evaluation of credits for transfer is always made by the accepting institution. Students receiving less than a grade of "C" in any course may experience difficulty in transferring such credit to another institution.

All courses in Arts and Science programs are considered to be transferable to other institutions. Career and Technical courses are designed to prepare students for a specific occupation and are not necessarily designed to be transferable. However, Iowa Western

Community College has transfer agreements for Career and Technical courses with several institutions.

## Unit of Credit

The semester hour is the basic unit of credit of Iowa Western Community College. A semester hour of credit usually represents one hour of class work or two to four hours of laboratory work each week for a semester, although variation from this standard is possible in some courses.

## Grading System

The grading system used at Iowa Western Community College is stated below.

A	Indicates superior work and excellent progress.
B	Indicates work and progress above the average standard.
C	Indicates work and progress that meets the average standard.
D	Indicates work and progress below the average standard.
F	Indicates work and progress below the minimum standard.
I	Indicates that course requirements have not been completed. (This grade must be completed by the following semester or the "I" will revert to an "F," unless the instructor and student request that the Records and Registration Office extend the time limit.)
W	Indicates withdrawal from the course. Grade is not calculated in grade point average.
T	Indicates credit by exam.
N	Indicates audit of a course - no credit granted.
X	Repeated course. (Used prior to Fall 2003.)
P	Pass.
Q	No credit - no pass.
R	Required - no credit.
L	Laboratory.
OG	On-going course.

## Pass/No Pass Course Grading Policy

Iowa Western Community College offers a limited number of courses that can be taken on a pass/no pass basis. In order for a course to be considered specifically for pass/no pass grading, it must be designated as a pass/no pass through curriculum action and noted in the course description in the college catalog.

The grade award for pass/no pass courses shall be:

P -	Pass
Q -	No pass/no credit

Credits earned through course work as P-Pass shall count toward the total number of credits earned by the student while enrolled at Iowa Western Community College. However, no numerical value is assigned to a P-Pass grade. P-Pass course grades are not used in calculating the student's term or cumulative grade point average.

## Grade Point System

A grade system is used to compute a student's grade point average. The numerical value assigned to each grade is as follows:

Each semester hour of A	= 4 points
Each semester hour of B	= 3 points
Each semester hour of C	= 2 points
Each semester hour of D	= 1 point
Each semester hour of F	= 0 points

A student's grade point average is computed as follows:

1. For each course, multiply the credits earned by the numerical value of the grade received in that course.
2. Compute the sum of all grade points received for all courses.
3. Divide the total grade points by the number of credits attempted. Disregard the credits attempted for any course in which an I, T, W, P, Q, or N mark was received.

## Transfer of Credit from Other Institutions

Iowa Western Community College will accept the credits awarded to a student who has done successful work, defined as a "C" or higher, at a regionally accredited college or university. A grade of "C" or higher is required for the credit to transfer, however, only the credit will be transferred. Grades for transfer credit will not affect the student's cumulative grade average and will not appear on the student's Iowa Western Community College transcript. Courses taken for pass/fail or satisfactory/unsatisfactory grades may only be transferred if the pass or satisfactory grade is equivalent to at least a "C" or higher. All acceptable college credit will be evaluated by the Registrar and then transfer credit applicable to the student's program of study will be awarded. This transfer credit information will be available upon request during the initial term of enrollment.

The College will accept a maximum of sixteen semester hours of Career and Technical credits from another regionally accredited institution as elective credit only towards the Associate in Arts or the Associate in Science degree. The College will accept a maximum of thirty semester hours of Career and Technical credits as elective credit only toward the Associate of General Studies degree.

Official transcripts must be sent directly from the institution where credit was earned to the Iowa Western Community College Records and Registration Office. It is the responsibility of the student to have international transcripts translated into English and evaluated by World Education Services (WES) or Educational Credential Evaluators (ECE). Records submitted to the College as part of the admissions procedure become part of the official file and cannot be returned to the student or forwarded to another institution.

Iowa Western Community College cannot guarantee how other colleges may treat the acceptance of transfer credits.

## President's Honor Roll

All full-time students who earn a semester grade point average of 3.5 or above will be listed on the President's Honor Roll.

## Honor Society - Phi Theta Kappa

Students who have successfully completed a minimum of twelve credit hours towards an Associate's degree and who have a cumulative grade point average of 3.5 or above will be invited to join Phi Theta Kappa. This national honor society initiates students during the fall and spring semesters of each year. PTK graduates are eligible to wear the PTK gold stole and tassel at graduation.

## Graduation Requirements

### Meeting Graduation Requirements

It is the responsibility of the student to know and to observe the requirements of curriculum and the rules governing academic work. Although the advisor will attempt to help the student make wise decisions, the final responsibility for meeting these requirements for graduation rests with the student.

In those instances where a student receives information from an advisor that might have an impact upon graduation requirements or application of credits toward graduation, the student is advised to secure such commitment in writing. It is further advised that such commitment be retained by the student until the sequence of events is such that it would be no longer necessary to demonstrate the establishment of such a commitment.

It is recommended that students have credits evaluated for graduation by the Registrar two semesters before actual graduation. This is to ensure all graduation requirements will have been met by the time the student plans to graduate.

## Continuous Enrollment Policy

Graduation requirements in effect at the time of a student's initial enrollment will remain in effect as long as the student is continuously enrolled at Iowa Western Community College. Continuous enrollment is defined as consecutive fall and spring terms and is subject to a five-year limitation. If changes occur in graduation requirements subsequent to initial enrollment, the student may elect to graduate under the most recent requirements. A student must satisfy the most recent requirements if a break in enrollment in the College for two or more consecutive semesters occurs. Students who elect to change major must satisfy requirements in effect at the time of the change.

## Dual Degrees/Multiple Degrees

A student who has met the requirements for an Associate's degree at Iowa Western Community College must complete a minimum of eighteen additional semester hours at Iowa Western Community College for a second Associate's degree and an additional eighteen semester hours for each successive Associate's degree. The student must meet all degree requirements as specified by each program. The student must submit a new Application for Graduation for each degree, even when the student wishes to have them conferred at the same time.

## Honorary Degree

The purpose of the Honorary Associate's degree is to recognize individuals in the community who have distinguished themselves through professional careers or who have made an outstanding contribution to the college or the community. Honorary degrees are awarded to individuals in the following categories:

- Alumni who have achieved significant success in personal and public lives;
- Individuals from within the college's service area who have contributed significantly to the progress and development of the college; and
- Citizens who have contributed significantly to the progress and development of Iowa Western Community College.

Individuals are not eligible for this award if they are currently employed by the college or serving on the Board of Trustees. A separation from such employment or service of at least two years is a prerequisite for eligibility. Recommendations for such honorary degrees shall be made to the President and approval granted by the President and his Cabinet prior to the award being made.

## Graduation Application and Automatic Graduation

Students who plan to earn a degree, diploma, or certificate should submit a graduation application at the beginning of the term in which they plan to complete all requirements. At the conclusion of the fall, spring and summer terms, as well as the winter interim session, the Records and Registration Office will verify final grades, and then

students who have completed graduation requirements for program of study will be marked as graduates on official transcript. Students who do not meet all requirements for graduation will be promptly notified by the Records and Registration Office, at which time a new course of action for degree attainment will be recommended.

In addition, at the conclusion of the fall, spring and summer terms, as well as the winter interim session, the Records and Registration Office will identify students who have met graduation requirements for a degree, diploma and/or certificate, and will automatically graduate such students, even though no application for graduation was submitted and regardless of the major on file. These students will be marked as graduates on official transcript, and they will be notified of respective award.

## Commencement

Iowa Western Community College conducts three commencement ceremonies at the Council Bluffs campus each year. One fall ceremony is held in December, and two spring ceremonies are held in May.

Although voluntary, participation is strongly encouraged. In order to participate, students must indicate their intention to participate by getting measured for the cap and gown to wear at the ceremony. Participation will be limited to students whose degree audits indicate that all graduation requirements are either "complete" or "in progress". Participation does not guarantee that students will officially graduate, as final grades are not verified and final audits are not conducted until after the ceremony.

## Diplomas

Diplomas are mailed to the student's address on file within six weeks of the conclusion of the term in which students graduate. Diplomas are not presented at the commencement ceremony. All financial obligations to the college must be met before the college will release a student's diploma. A student may order a replacement diploma by notifying the Records and Registration Office; the cost for the replacement shall be the student's responsibility and it must be paid before a replacement will be ordered.

## Graduation with Honors

Any graduate who has attained a cumulative grade point average of 3.5-3.69 shall be graduated with "Honors." A graduate who has attained a cumulative grade point average of 3.7-3.89 shall be graduated with "High Honors." Graduates who have attained a cumulative grade point average of 3.9 or above shall be graduated with "Highest Honors." Honors will be recognized on the official academic transcript.

## Graduation Requirements

Iowa Western Community College is authorized by the State of Iowa to grant the following degrees, diplomas, and certificates upon satisfactory completion of a specific curriculum or degree program.

**Associate of Applied Arts****(in effect Fall 2023)**

Candidates for this degree must:

- A. Complete between 60 and 86 semester hours of academic credit of which at least 50% or the last 20 semester hours shall be in residence.
- B. Attain a minimum cumulative grade point average of 2.0.
- C. Select a program that will be recognized on the student's official transcript.
- D. The general education component of the associate of applied arts degree program shall consist of a minimum of 15 semester credit hours of general education and shall include at least one course from the following areas:

**Communications 3 credits**

Course must be selected from ENG 105 or ENG 110.

**Humanities or Social Sciences 3 credits**

Course must be selected from Art, Theatre, Foreign Language, Humanities, Literature, General Music, Philosophy, Religion, Anthropology, Economics, Geography, History, Political Science, Psychology, and Sociology.

**Mathematics or Science 3 credits****Diversity Requirement 3 credits**

MGT 195 – Workplace Empowerment

**Distributed Requirement 3 credits**

Course must be selected from Communications, Social Sciences, Sciences and Mathematics, and Humanities.

**Program Specific Courses credits vary**

Programs of study that lead to an Associate of Applied Arts (A.A.A.) degree include specific courses required for the degree in addition to the general education requirements listed above. Refer to individual A.A.A. programs of study in this catalog to learn specific degree requirements.

**Associate of Applied Science****(in effect Fall 2023)**

Candidates for this degree must:

- A. Complete between 60 and 86 semester hours of academic credit of which at least 50% or the last 20 semester hours shall be in residence.
- B. Attain a minimum cumulative grade point average of 2.0.
- C. Select a program that will be recognized on the student's official transcript.
- D. The general education component of the associate of applied science degree program shall consist of a minimum of 15 semester credit hours of general education and shall include at least one course from the following areas:

**Communications 3 credits**

Course must be selected from ENG 105 or ENG 110.

**Humanities or Social Sciences 3 credits**

Course must be selected from Art, Theatre, Foreign Language, Humanities, Literature, General Music, Philosophy, Religion, Anthropology, Economics, Geography, History, Political Science, Psychology, and Sociology.

**Mathematics or Science 3 credits****Diversity Requirement 3 credits**

MGT 195 – Workplace Empowerment

**Distributed Requirement 3 credits**

Course must be selected from Communications, Social Sciences, Sciences and Mathematics, and Humanities.

**Program Specific Courses credits vary**

Programs of study that lead to an Associate of Applied Science (A.A.S.) degree include specific courses required for the degree in addition to the general education requirements listed above. Refer to individual A.A.S. programs of study in this catalog to learn specific degree requirements.

**Associate of Arts****(in effect Fall 2023)**

Candidates for this degree must:

- A. Complete between 60 and 64 semester hours of academic credit of which at least 50% or the last 20 semester hours shall be in residence.
- B. Attain a minimum cumulative grade point average of 2.0.
- C. Select a program that will be recognized on the student's official transcript.
- D. Complete the following minimum requirements:

**Communications 9 credits**

Courses must include ENG 105 and ENG 106, and one Speech course, either SPC 112 or SPC 122.

**Social Sciences 9 credits**

Courses must be selected from Anthropology, Economics, Geography, History, Political Science, Psychology, and Sociology.

**Science and Mathematics 8 credits**

Courses must include a minimum of four credit hours of laboratory science and a minimum of four credit hours of mathematics. Courses must be selected from Biology, Chemistry, Environmental Science, Mathematics, Physical Science, and Physics; at least one mathematics course must be selected from MAT 121-MAT 227.

**Humanities 9 credits**

Courses must be selected from Art, Theatre, Foreign Language, Humanities, Literature, General Music, Philosophy, and Religion.

**Distributed Requirement 5 credits**

Course must be selected from Communications, Social Sciences, Science and Mathematics, and Humanities.

**General Electives 20-24 credits**

Courses may include up to 16 semester hours of career/technical courses.

**Diversity Requirement 3 credits**

\*The Diversity Requirement does not increase the number of credits required for graduation; the course taken to fulfill the diversity requirement will also fulfill requirements in Social Sciences, Humanities, Distributed Requirement, or General Electives. A list of courses that will satisfy the Diversity Requirement can be found in the College catalog.

**Additional Recommendations:**

Students are encouraged to check with the transfer institution when selecting courses to ensure as seamless a transition to a four-year institution as possible.

**Associate of General Studies****(in effect Fall 2023)**

Candidates for this degree must:

- A. Complete between 60 and 64 semester hours of academic credit of which at least 50% or the last 20 semester hours shall be in residence.
- B. Attain a minimum cumulative grade point average of 2.0.
- C. Select a program that will be recognized on the student's official transcript.
- D. Complete the following minimum requirements:

**Social Sciences 9 credits**

Courses must be selected from Anthropology, Economics, Geography, History, Political Science, Psychology, and Sociology.

**Science and Mathematics 7 credits**

Courses must include a minimum of four credit hours of laboratory science and a minimum of three credit hours of mathematics from MAT 102-MAT 227. Courses must be selected from Biology, Chemistry, Environmental Science, Mathematics, Physical Science, and Physics.

**Humanities 6 credits**

Courses must be selected from Art, Theatre, Foreign Language, Humanities, Literature, General Music, Philosophy, and Religion.

**Distributed Requirement 3 credits**

Course must be selected from Communications, Humanities and Social Sciences, and Science and Mathematics.

**General Electives 26-30 credits**

Courses may include up to 30 semester hours of career/technical courses.

**Communications 9 credits**

Courses must be selected from:

- ENG 105 - Composition I **3.0 Credit(s)**
- ENG 106 - Composition II **3.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**
- SPC 112 - Public Speaking **3.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**

**Diversity Requirement 3 credits**

\*The Diversity Requirement does not increase the number of credits required for graduation; the course taken to fulfill the diversity requirement will also fulfill requirements in Social Sciences, Humanities, or General Electives. A list of courses that will satisfy the Diversity Requirement can be found in the College catalog.

**Notes:**

The Associate in General Studies degree allows students to combine a core of basic courses with a program that can be customized to academic goals. This degree may be appropriate for those students undecided about future educational or career goals. However, because of the flexibility of this degree, it may not fulfill requirements for transfer to a four-year institution. Students should work closely with advisor for program planning assistance.

**Associate of Science****(in effect Fall 2023)**

Candidates for this degree must:

- A. Complete between 60 and 64 semester hours of academic credit of which at least 50% or the last 20 semester hours shall be in residence.
- B. Attain a minimum cumulative grade point average of 2.0.
- C. Select a program that will be recognized on the student's official transcript.
- D. Complete the following minimum requirements:

**Communications** **9 credits**

Courses must include ENG 105 and ENG 106, and one Speech course, either SPC 112 or SPC 122.

**Humanities and Social Sciences** **9 credits**

Courses must be selected from Art, Theatre, Foreign Language, Humanities, Literature, General Music, Philosophy, Religion, Anthropology, Economics, Geography, History, Political Science, Psychology, and Sociology.

**Science and Mathematics** **20 credits**

Courses must include a minimum of four credit hours of laboratory science and a minimum of four credit hours of mathematics.

Courses must be selected from Biology, Chemistry, Environmental Science, Mathematics, Physical Science, and Physics; all mathematics courses must be selected from MAT 121-MAT 227.

**Distributed Requirement** **3 credits**

Course must be selected from Communications, Humanities and Social Sciences, and Science and Mathematics.

**General Electives** **19-23 credits**

Courses may include up to 16 semester hours of career/technical courses.

**Diversity Requirement** **3 credits**

\*The Diversity Requirement does not increase the number of credits required for graduation; the course taken to fulfill the diversity requirement will also fulfill requirements in Humanities and Social Sciences, Distributed Requirement, or General Electives. A list of courses that will satisfy the Diversity Requirement can be found in the College catalog.

**Additional Recommendations:**

Students are encouraged to check with the transfer institution when selecting courses to ensure as seamless a transition to a four-year institution as possible.

**Diploma****(in effect Fall 2022)**

Candidates for the diploma must:

- A. Complete between 15 and 48 semester hours of academic credit of which at least 50% shall be in residence.
- B. Attain a minimum cumulative grade point average of 2.0.
- C. Select a program that will be recognized on the student's official transcript.
- D. Complete the following minimum requirements:

**General Education Courses**

Diploma programs must include at least three semester credit hours of general education from any of the following areas: Communications, Social Science or Humanities, Science or Mathematics.

**Program Specific Courses**

Programs of study that lead to a diploma include specific program courses that are required in addition to the general education requirements listed above. Refer to individual diploma programs of study in this catalog to learn specific requirements.

**Certificate****(in effect Fall 2022)**

Candidates for the certificate must:

- A. Complete between 5\* and 48 semester hours of academic credit of which at least 50% shall be in residence.
- B. Attain a minimum cumulative grade point average of 2.0.
- C. Select a program that will be recognized on the student's official transcript.
- D. Complete the required courses as listed in the program of study.

\*Certificates less than 16 semester hours are not eligible for federal financial aid. Students who require federal financial aid should select a program of study with a minimum of 16 semester hours.

## Diversity Requirement

Iowa Western Community College values diversity and supports learning experiences that promote intellectual growth and human enrichment. To achieve this goal, all graduates earning an associate degree must take at minimum a three-credit hour course for which the primary focus leads to an understanding and awareness of one or more of the following: gender, race, ethnicity, sexual orientation, people with disabilities, religion and/or global relations. This requirement may be satisfied with courses taken to satisfy other core requirements. Courses must be selected from the following:

### Social Science

- ANT 105 - Cultural Anthropology **3.0 Credit(s)**<sup>1</sup>
- GEO 121 - World Regional Geography **3.0 Credit(s)**<sup>1</sup>
- HIS 253 - American Indian History and Culture **3.0 Credit(s)**<sup>1</sup>
- HIS 257 - African American History **3.0 Credit(s)**<sup>1</sup>
- POL 121 - International Relations **3.0 Credit(s)**<sup>1</sup>
- SOC 198 - The Middle East **3.0 Credit(s)**<sup>1</sup>
- SOC 200 - Minority Group Relations **3.0 Credit(s)**<sup>1</sup>
- SOC 210 - Men, Women and Society **3.0 Credit(s)**<sup>1</sup>

### Humanities

- DRA 101 - Introduction to Theatre **3.0 Credit(s)**<sup>1</sup>
- DRA 130 - Acting I **3.0 Credit(s)**<sup>1</sup>
- DRA 132 - Acting II **3.0 Credit(s)**<sup>1</sup>
- FLS 141 - Elementary Spanish I **4.0 Credit(s)**<sup>1</sup>
- FLS 142 - Elementary Spanish II **4.0 Credit(s)**<sup>1</sup>
- LIT 134 - Multicultural Literature **3.0 Credit(s)**<sup>1</sup>
- MUS 204 - History of Rock and Roll **3.0 Credit(s)**<sup>1</sup>
- REL 101 - Survey of World Religions **3.0 Credit(s)**<sup>1</sup>

### General Electives

- ECE 287 - Exceptional Learner **3.0 Credit(s)**
- EDU 245 - Exceptional Learner **3.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- MKT 190 - International Marketing **3.0 Credit(s)**
- SPC 120 - Intercultural Communications **3.0 Credit(s)**<sup>1</sup>

### Notes:

<sup>1</sup>Courses listed under Social Science and Humanities, as well as any other asterisked course, will also satisfy the Distributed requirement.

## Student Success Opportunities

Because students come to Iowa Western Community College with diverse backgrounds and interests, the College provides a wide variety of services and activities to make sure that every student has the best possible chance to succeed and grow while participating in the various instructional programs offered by the College. Students who have questions about any of the services offered or about how to access the services should contact the various departments on the Council Bluffs campus or the center director. Students can also access information online in ROC.

## Advising

### Academic Advising

Upon registering for first semester, all students are assigned an advisor in program of study. Student advisees are ultimately responsible for all aspects of education, including course selection and awareness of current academic status; however, advisors can provide guidance and assistance regarding program and graduation requirements. In addition, students should feel that they can freely discuss personal interests, values, and goals with advisor and should seek advisor's assistance in developing academic, social, and career goals. Students should always consult with advisor before making any important academic decision, such as changing a program of study, adding or dropping courses, or withdrawing from school. Advisor assignments and advisor contact information are accessible online in Student Self Services.

### Career Planning

The Career and Transfer Services Center offers students a variety of services and resources that are designed to help them make informed decisions regarding career selection. These resources also provide an opportunity for students to make a connection between a program of study, or major, and the related job possibilities. Services include but are not limited to resume writing assistance, career exploration tools, and interview preparation assistance.

### Transfer Planning

The Career and Transfer Services Center offers valuable resources and assistance to students who intend to transfer. These resources include a transfer web site, trained academic advisors, one-on-one and group visits from four-year colleges and universities, transfer fairs, and articulation (transfer) agreements. Students who intend to transfer should begin the planning process early in academic careers to help make informed decisions regarding major and the institution to which they ultimately plan to transfer.

## Student Support and Resources

### Intercultural and International Students

The Office of Admissions provides services for students outside the United States seeking F-1 visas as well as services for non-native English-speaking students. Services include issuing the I-20 form (Certificate of Eligibility for Nonimmigrant Students). English proficiency for all non-native English-speaking students is determined by this office. The office also assists non-native English-speaking students with the application process, including completing the Free Application for Federal Student Aid. For more information, contact the Office of Admissions.

## Mental Health Support

Iowa Western provides short-term, solution-focused counseling services to help students cope with stressors that are affecting academic career, or personal success. Students are encouraged to seek help for stressors including, but not limited to, homesickness, depression, anxiety, relationships, and other college related issues. Mental health support services are offered for free through the Office of Student Outreach and Support.

## Services for Students with Disabilities

In accordance with the Americans with Disabilities Act (ADA), Iowa Western Community College provides reasonable accommodations to students with documented disabilities. Staff will assist students in arranging necessary access and/or academic accommodations. Students who request an accommodation must have disability documentation on file with the Coordinator of Accommodation Services prior to receiving accommodations. Therefore, students are strongly encouraged to provide documentation of disability and make arrangements early in semester registration process in order to receive timely services. All disability documentation files are kept strictly confidential. For more information, contact the Accommodation Services Office.

## TRiO/Student Support Services

TRiO Programs, including Student Support Services, are federal grant programs that are fully funded by the Department of Education under Title IV of the Higher Education Act of 1965. The overall goal of TRiO/Student Support Services is to support students in continuing education by increasing the number of graduates and assisting students in transferring to four-year institutions to obtain baccalaureate degrees. Meant to assist disadvantaged or underprepared students in overcoming barriers to a post-secondary education, TRiO/Student Support Services provides academic advising, career advising, access to Math/Science/ Writing Specialists, peer mentoring, transfer assistance, financial aid assistance, financial literacy advising, computer training, academic improvement workshops, cultural and educational activities, volunteer opportunities, and personal development workshops. For more information, contact the Director of TRiO/Student Support Services.

## Tutoring

The Tutoring Center is located on the second floor of the Student Center in the Cyber Library and offers free academic assistance in a variety of core subjects, as well as assistance with skills such as test-taking, studying and organization & time management. Peer tutors maintain regular hours and are available on a walk-in basis. Also located in the Tutoring Center are the Writing Center and Professional Math Tutoring. Iowa Western also offers free 24/7 online tutoring through Canvas. For more information about the free tutoring available to all Iowa Western Community College students, contact the Tutoring Center.

## College Services

In addition to the variety of services available for students, the college offers many College Services. Students who have questions about any of the services offered or about how to access the services should contact the various departments on the Council Bluffs campus or the campus/center director. Students can also access information online in ROC.

## College Store

The College Store is located on the second level of the student center. Students can rent or purchase textbooks in store or online at [iwcccollegestore.com](http://iwcccollegestore.com). Reiver Gear, supplies, food items, and student-priced software are also available in the College Store.

## Cyber Library

Iowa Western Community College provides 24/7 online access to full-text journal articles, books, and other resources to students, faculty, and staff. The Cyber Library, located on the Council Bluffs campus on the second floor of the Student Center, is a learner-centered environment that has laptops available for check-out, individual and group study rooms, library research assistance, assistance with MLA & APA citation and format, free black & white printing, and free wi-fi service. Library facilities are also available for students at the Clarinda Center. For more information, contact the Cyber Library.

## Early Childhood Education Center

The Iowa Western Community College Early Childhood Education Center at Council Bluffs provides a quality early childhood education program on campus. The center is licensed by the Department of Human Services and accredited by the National Academy of Early Childhood Programs. For more information, contact the Director of the Early Childhood Education Center.

## Food Service

The Food Service Department offers a variety of services including buffet style meals, ala carte menu choices, snacks, meal plans, and catering services.

## Vocational Rehabilitation Services

Students with medical conditions or disabilities that are either physical or mental may apply for services from the State of Iowa Rehabilitation Education and Services Branch of the Department of Education. Qualified students may receive services that include medical diagnosis, counseling, assessment, post-secondary training, on-the-job training, career planning, job placement, and employment follow-up. Educational tuition and expense grants may be provided for attendance at the College.

## Workforce Development Resource Center

The Workforce Development Resource Center is available to assist students who are seeking career guidance and/or employment. Program graduates as well as currently enrolled students can take advantage of the services offered through the resource center. These services include career research, career assessment, job listings and access to internet job search sites, resume preparation, access to resource library materials and labor market information, and skill upgrade programs. For more information, please call (712) 242-2121 or visit the resource center at 300 W. Broadway, Suite 13 in Council Bluffs.

## Campus Life

A college education expands a student's academic and personal development. Supplementing both areas are a number of extracurricular activities, which include intramurals, social events, community events, and student clubs and organizations. Students are encouraged to participate and assist in the planning of events through the various clubs and organizations. For more information, contact the Dean of Student Life.

## Residence Life

Residence Life provides an atmosphere that nourishes the learning, growth, and personal development of each resident within a cooperative community. Three types of housing are available at the Council Bluffs campus. Students may choose to live in the Reiver Suites, Reiver Village, or Reiver Tower. The Reiver Suites are designed to house four students comfortably with four bedrooms and two bathrooms per suite. The apartment-style Reiver Village is designed to house four students. A double room in the Reiver Tower houses two male residents. In addition to the services and facilities provided, there are many activities, programs, and leadership opportunities available in Residence Life to help individuals, as well as the community, achieve educational and personal goals. For more information, contact the office of Residence Life.

## Intramural Activities

Iowa Western Community College provides a wide range of intramural sports and recreation opportunities for students at the Council Bluffs campus. Team activities such as flag football, sand volleyball, basketball, dodgeball, bowling, and Ultimate Frisbee are offered throughout the year and are free to all students. For more information on intramural activities, contact the Dr. John and Jean Marshall Wellness Center.

## Intercollegiate Athletics

Students at the Council Bluffs campus may participate in the following intercollegiate varsity athletic programs:

Women: Basketball, Bowling, Cross Country, Golf, Soccer, Softball, Track & Field, Volleyball, Wrestling

Men: Baseball, Basketball, Bowling, Cross Country, Football, Golf, Soccer, Track & Field, Wrestling

Coed: Esports, Shotgun Sports, Cheerleading, Dance Team

Iowa Western Community College is a member of the National Junior College Athletic Association (NJCAA) and the Iowa Community College Athletic Conference (ICCAC). Participants must meet all academic requirements for participation, as outlined by both the NJCAA and ICCAC.

## Spirit Squads

Students at the Council Bluffs campus may participate in two programs designed to support the College's athletic teams, the Reiver Cheer Team, which competes locally, regionally, and nationally, and the Reiver Dance Team. The team members are selected through tryouts. Contact the Athletic Office for more information.

## Choir/Band

The Iowa Western Community College Music Department offers a wide range of performance ensembles in vocal and instrumental music. Students are selected through audition for most ensembles. For more information, contact the Music Department.

## Theatre

The Iowa Western Community College Theatre Department offers opportunities for involvement in two productions a year. Auditions for theatre productions are open to anyone. Work on the productions can be for credit or non-credit. For more information, contact the Theatre Department.

## Programs of Study A-Z

### Accounting Technician Diploma

Accounting: Accounting Technician program of study prepares students for a career in accounting as a general ledger, accounts payable, accounts receivable or payroll clerk. The program is built on a solid base of accounting theory and includes specialized courses in computer operations. Graduates of this program are awarded a diploma. Students must complete the curriculum described below:

#### Recommended Course Sequence

##### First Semester

- ACC 121 - Principles of Accounting I **3.0 Credit(s)**
- CSC 116 - Information Computing **3.0 Credit(s)**
- BUS 102 - Introduction to Business **3.0 Credit(s)**
- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**
- ENG 105 - Composition I **3.0 Credit(s)**

Semester Total: 15.0 Credits

##### Second Semester

- ACC 122 - Principles of Accounting II **3.0 Credit(s)**
- ACC 161 - Payroll Accounting **3.0 Credit(s)**
- ACC 311 - Computer Accounting **3.0 Credit(s)**
- FIN 121 - Personal Finance **3.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 30.0

### Accounting: Para-Accounting, A.A.S.

Accounting: Para-Accounting program of study prepares students for a career in the field of accounting. Upon graduation, students are able to analyze, communicate, distinguish, record and summarize economic events for a profit-oriented and/or not-for-profit business entity. Fluency in oral and written communication is stressed. The program offers advanced accounting computer courses allowing students to seek advanced level employment in government offices, public accounting firms and general businesses. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

#### Recommended Course Sequence

##### First Semester

- ACC 121 - Principles of Accounting I **3.0 Credit(s)**
- CSC 116 - Information Computing **3.0 Credit(s)**
- BUS 102 - Introduction to Business **3.0 Credit(s)**
- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**
- ENG 105 - Composition I **3.0 Credit(s)**

Semester Total: 15.0 Credits

##### Second Semester

- ACC 122 - Principles of Accounting II **3.0 Credit(s)**
- ACC 161 - Payroll Accounting **3.0 Credit(s)**
- ACC 311 - Computer Accounting **3.0 Credit(s)**
- FIN 121 - Personal Finance **3.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**

Semester Total: 15.0 Credits

##### Third Semester

- ACC 211 - Intermediate Accounting I **3.0 Credit(s)**
- BUS 185 - Business Law I **3.0 Credit(s)**
- ACC 251 - Governmental and Nonprofit Accounting **3.0 Credit(s)**
- PHI 142 - Ethics in Business **3.0 Credit(s)**
- ECN 110 - Introduction to Economics **3.0 Credit(s)**

Semester Total: 15.0 Credits

##### Fourth Semester

- ACC 221 - Cost Accounting **3.0 Credit(s)**
- ACC 261 - Income Tax Accounting **3.0 Credit(s)**
- BUS 121 - Business Communications **3.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- BUS 130 - Introduction to Entrepreneurship **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 60.0

## Agribusiness Administration Certificate

Agribusiness Administration prepares students for entry level positions in agribusiness organizations. Students gain an understanding of production agriculture and the role of agribusiness in the economy. Students are provided classroom instruction, lab, and field experience in order to pursue a career in agriculture business, administration or accounting. Graduates of this program are awarded a certificate. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- AGA 181 - Introduction to Crop Science **3.0 Credit(s)**
- AGS 113 - Survey of the Animal Industry **3.0 Credit(s)**
- AGB 330 - Farm Business Management **3.0 Credit(s)**

Semester Totals: 9.0 Credits

#### Second Semester

- AGB 101 - Agricultural Economics **3.0 Credit(s)**
- AGB 466 - Agricultural Finance **3.0 Credit(s)**
- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**  
\*May substitute with MAT 102 or higher (3 credits).

Semester Totals: 9.0 Credits

Total Semester Hours Required: 18.0

Notes:

<sup>1</sup>May substitute with MAT 102 or higher.

## Agribusiness Management A.A.S.

Agribusiness Management program of study provides students with the opportunity to develop skills, abilities, and an understanding of the technical aspects of agriculture and agribusiness. The program includes classroom instruction, and lab and field experience opportunities. The program prepares students for a variety of career paths: agribusiness, farm management, production agriculture, agricultural research, domestic agriculture, international agriculture, and related sales and supply fields. Graduates of this program are awarded an Associate in Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- AGA 181 - Introduction to Crop Science **3.0 Credit(s)**
- AGA 182 - Introduction to Soil Science **3.0 Credit(s)**
- AGP 333 - Precision Farming Systems **3.0 Credit(s)**
- AGS 113 - Survey of the Animal Industry **3.0 Credit(s)**
- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**  
\*May substitute with MAT 102 or higher (3 credits).

Semester Total: 15.0 Credits

#### Second Semester

- AGA 280 - Crop Development, Production, and Management **3.0 Credit(s)**
- AGB 101 - Agricultural Economics **3.0 Credit(s)**
- AGA 376 - Integrated Pest Management **3.0 Credit(s)**
- AGS 226 - Beef Cattle Science **3.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**  
\*\*May substitute with ENG 105 (3 credits).

Semester Total: 15.0 Credits

#### Summer

- AGB 804 - Agricultural Internship I **3.0 Credit(s)**

Semester Total: 3.0 Credits

#### Third Semester

- AGA 284 - Pesticide Application Certification **3.0 Credit(s)**
- AGB 330 - Farm Business Management **3.0 Credit(s)**
- AGB 437 - Commodity Marketing **3.0 Credit(s)**
- ECN 120 - Principles of Macroeconomics **3.0 Credit(s)**  
\*\*\*May substitute with Social Science elective (3 credits).
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Fourth Semester

- AGB 211 - Agricultural Law, Taxation and Records **3.0 Credit(s)**
- AGB 331 - Entrepreneurship in Agriculture **3.0 Credit(s)**
- AGB 336 - Agricultural Selling **3.0 Credit(s)**
- AGB 466 - Agricultural Finance **3.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 63.0

Notes:

\*May substitute with MAT 102 or higher.

\*\*May substitute with ENG 105.

\*\*\*May substitute with Social Science elective.

## Agribusiness Technology: Agronomy Operations Certificate

Agribusiness Technology: Agronomy Operations program of study provides students with the opportunity to develop skills, abilities, and an understanding of the agronomic aspects of production agriculture. Careers in production agriculture and agronomy operations can be pursued. Students are provided classroom instruction, lab and field experience. Graduates of this program are awarded a certificate. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- AGA 181 - Introduction to Crop Science **3.0 Credit(s)**
- AGP 333 - Precision Farming Systems **3.0 Credit(s)**
- AGA 284 - Pesticide Application Certification **3.0 Credit(s)**

Semester Total: 9.0 Credits

#### Second Semester

- AGA 376 - Integrated Pest Management **3.0 Credit(s)**
- AGA 280 - Crop Development, Production, and Management **3.0 Credit(s)**

Semester Total: 6.0 Credits

#### Summer

- AGB 804 - Agricultural Internship I **3.0 Credit(s)**

Semester Total: 3.0 Credits

Total Semester Hours Required: 18.0

## Audio Engineering, A.A.S.

Audio Engineering program of study is designed to prepare students for a wide variety of opportunities in the music industry and media production. This program is designed as a two-year terminal degree with no option to transfer to a four-year university. Graduates can go on to become live audio engineers, own and operate own studio as recording and mixing engineers, or apply music and audio skills to post-production for other media such as video, video games, and the web. Graduates of this degree are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MUS 102 - Music Fundamentals **3.0 Credit(s)**
- MUS 305 - Introduction to Audio **3.0 Credit(s)**
- MUS 306 - Digital Audio Production I **3.0 Credit(s)**
- MUS 320 - Technical Music Practicum I **1.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**
- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- MUS 307 - Digital Audio Production II **3.0 Credit(s)**
- MUS 325 - Mix Listening I **3.0 Credit(s)**
- MUS 328 - Virtual Instrument and Processing Plug-Ins **3.0 Credit(s)**
- MUS 310 - Recording Project I **1.0 Credit(s)**
- MUS 321 - Technical Music Practicum II **1.0 Credit(s)**
- BUS 130 - Introduction to Entrepreneurship **3.0 Credit(s)**

Semester Total: 14.0 Credits

#### Third Semester

- MUS 311 - Recording Project II **1.0 Credit(s)**
- MUS 326 - Mix Listening II **3.0 Credit(s)**
- MUS 330 - Audio Mixing I **3.0 Credit(s)**
- MUS 333 - Popular Music Analysis **3.0 Credit(s)**
- MUS 322 - Technical Music Practicum III **1.0 Credit(s)**
- ART 125 - Digital Media **3.0 Credit(s)**

Semester Total: 14.0 Credits

#### Fourth Semester

- MUS 312 - Recording Project III **1.0 Credit(s)**
- MUS 331 - Audio Mixing II **3.0 Credit(s)**
- MUS 335 - Audio Mastering **3.0 Credit(s)**
- MUS 323 - Technical Music Practicum IV **1.0 Credit(s)**
- MUS 936 - Audio Engineering Internship **2.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- Social Science Elective **3.0 Credit(s)**

Semester Total: 16.0 Credits

Total Semester Hours Required: 60.0

## Automotive Maintenance and Light Repair Diploma

Automotive Maintenance and Light Repair program of study is a one-year program designed to prepare students for above average employment opportunities in all types of automotive service facilities. Students are introduced to critical theory and relevant, hands-on instruction that prepare them to become entry-level vehicle maintenance and light repair technicians. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- AUT 119 - Introduction to Automotive Technology **4.0 Credit(s)**
- AUT 615 - Automotive Electricity/Electronics **4.0 Credit(s)**
- AUT 116 - Automotive Technology Lab I **6.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>

Semester Total: 17.0 Credits

#### Second Semester

- AUT 524 - Automotive Brake Systems and Service **4.0 Credit(s)**
- AUT 404 - Automotive Suspension and Steering **4.0 Credit(s)**
- AUT 220 - Automotive Technology Lab II **6.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Summer

- AUT 837 - Automotive Heating and Air Conditioning **2.0 Credit(s)**
- WEL 117 - General Welding **2.0 Credit(s)**
- AUT 249 - Automotive Technology Lab III **3.0 Credit(s)**

Semester Total: 7.0 Credits

Total Semester Hours Required: 41.0

Notes:

<sup>1</sup>May substitute with MAT 102 or higher.

## Automotive Technology, A.A.S.

Automotive Technology program of study is designed to prepare students to become proficient, entry-level automotive technicians. Students desiring to enter this high-tech profession can take advantage of the training offered in all eight of the A.S.E. certification areas to acquire the skills needed to succeed. Students are introduced to critical theory and provided up-to-date, relevant hands-on instruction comparable to many manufacturer training programs. Graduates of this program are awarded an Associate in Applied Science (A.A.S.) degree. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- AUT 119 - Introduction to Automotive Technology **4.0 Credit(s)**
- AUT 615 - Automotive Electricity/Electronics **4.0 Credit(s)**
- AUT 116 - Automotive Technology Lab I **6.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)** <sup>1</sup>

Semester Total: 17.0 Credits

#### Second Semester

- AUT 524 - Automotive Brake Systems and Service **4.0 Credit(s)**
- AUT 404 - Automotive Suspension and Steering **4.0 Credit(s)**
- AUT 220 - Automotive Technology Lab II **6.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Summer

- AUT 837 - Automotive Heating and Air Conditioning **2.0 Credit(s)**
- WEL 117 - General Welding **2.0 Credit(s)**
- AUT 249 - Automotive Technology Lab III **3.0 Credit(s)**

Semester Total: 7.0 Credits

#### Third Semester

- AUT 951 - Advanced Automotive Engine and Electronic Diagnostics **4.0 Credit(s)**
- AUT 617 - Automotive and Diesel Fuel Systems **4.0 Credit(s)**
- AUT 421 - Automotive Technology Lab IV **6.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Fourth Semester

- AUT 302 - Automotive Engine Repair and Rebuild **4.0 Credit(s)**
- AUT 301 - Automotive Transmission and Drivetrain **4.0 Credit(s)**
- AUT 521 - Automotive Technology Lab V **6.0 Credit(s)**  
or
- AUT 910 - Automotive Technology Internship I **6.0 Credit(s)**
- SOC 240 - Criminology **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Summer

- AUT 506 - Automotive Technology Lab VI **3.0 Credit(s)**  
or
- AUT 915 - Automotive Technology Internship II **3.0 Credit(s)**

Semester Total: 3.0 Credits

Total Semester Hours Required: 78.0

#### Notes:

<sup>1</sup>May substitute MAT 102 or higher.

## Aviation Maintenance Technology, A.A.S.

Aviation Maintenance Technology program of study provides the necessary instruction and practical experience required by the Federal Aviation Administration Regulations for those individuals who wish to become a Certificated Aviation Maintenance Technician with an Airframe and Powerplant rating. The curriculum follows the guidelines set forth by the Federal Aviation Administration in FAR Part 147 and provides students with training on both fixed-wing and rotor-winged aircraft along with training in reciprocating and turbine-powered aircraft systems. The student must take the required FAA written/oral and practical tests to receive a Mechanic's certificate with Airframe and Powerplant ratings. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- AVM 120 - Aviation Mechanics General I **7.0 Credit(s)**
- AVM 140 - Aviation Mechanics General II **7.0 Credit(s)**
- MAT 766 - Technical Math for Aviation **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Second Semester

- AVM 181 - Aviation Airframe I **7.5 Credit(s)**
- AVM 182 - Aviation Airframe II **7.5 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)** \*

Semester Total: 18.0 Credits

#### Summer

- AVM 185 - Aviation Airframe III **7.0 Credit(s)**

Semester Total: 7.0 Credits

#### Third Semester

- AVM 186 - Aviation Airframe IV **7.0 Credit(s)**
- AVM 191 - Aviation Powerplant I **7.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Fourth Semester

- AVM 192 - Aviation Powerplant II **7.5 Credit(s)**
- AVM 193 - Aviation Powerplant III **8.5 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**

Semester Total: 19.0 Credits

#### Summer

- AVM 194 - Aviation Powerplant IV **7.5 Credit(s)**

Semester Total: 7.5 Credits

Total Semester Hours Required: 85.5

Notes:

\*May substitute for ENG 105 - English Composition I

## Aviation Maintenance Technology: Airframe Certificate

Aviation Maintenance Technology Airframe program of study is for those individuals who already hold a current and effective Federal Aviation Administration (FAA) issued Powerplant Mechanic License or who have taken and passed the FAA General Subject Areas per 14 Code of Federal Regulations 147 Appendix B at an FAA approved aviation maintenance technician school. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- AVM 181 - Aviation Airframe I **7.5 Credit(s)**
- AVM 182 - Aviation Airframe II **7.5 Credit(s)**

Semester Total: 15.0 Credits

#### Summer Semester

- AVM 185 - Aviation Airframe III **7.0 Credit(s)**

Semester Total: 7.0 Credits

#### Second Semester

- AVM 186 - Aviation Airframe IV **7.0 Credit(s)**

Semester Total: 7.0 Credits

Total Semester Hours Required: 29.0

## Aviation Maintenance Technology: Powerplant Certificate

Aviation Maintenance Technology Powerplant program of study is for those individuals who already hold a current and effective Federal Aviation Administration (FAA) issued Airframe Mechanic License or who have taken and passed the FAA General Subject Areas per 14 Code of Federal Regulations 147 Appendix B at an FAA approved aviation maintenance technician school. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- AVM 191 - Aviation Powerplant I **7.0 Credit(s)**

Semester Total: 7.0 Credits

#### Second Semester

- AVM 192 - Aviation Powerplant II **7.5 Credit(s)**
- AVM 193 - Aviation Powerplant III **8.5 Credit(s)**

Semester Total: 16.0 Credits

#### Summer Semester

- AVM 194 - Aviation Powerplant IV **7.5 Credit(s)**

Semester Total: 7.5 Credits

Total Semester Hours Required: 30.5

## Biology Transfer Major, A.S.

Biology Transfer Major program of study provides a background in various areas of the life sciences. This program is intended for students who plan to transfer and study biological sciences at four-year institutions. Some areas of opportunity for graduates having this major and a baccalaureate degree include medicine, the allied health fields, science education, wildlife conservation, forestry, soil conservation, fishery management, and many others. Graduates of this program are awarded an Associate of Science (A.S.) degree.

### Program Prerequisites

High school biology or BIO 105 Introduction to Biology, High school chemistry or CHM 122 Introduction to Chemistry

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- BIO 112 - General Biology I **4.0 Credit(s)**<sup>1</sup>
- MAT 121 - College Algebra **4.0 Credit(s)**
- PHI 105 - Introduction to Ethics **3.0 Credit(s)**

Semester Total: 14.0 Credits

#### Second Semester

- ENG 106 - Composition II **3.0 Credit(s)**
- BIO 113 - General Biology II **4.0 Credit(s)**<sup>1</sup>
- PSY 121 - Developmental Psychology **3.0 Credit(s)**
- MAT 130 - Trigonometry **3.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- SPC 112 - Public Speaking **3.0 Credit(s)**
- CHM 166 - General Chemistry I **5.0 Credit(s)**<sup>1</sup>
- ENV 111 - Environmental Science **4.0 Credit(s)**
- MAT 211 - Calculus I **5.0 Credit(s)**<sup>1</sup>

Semester Total: 17.0 Credits

#### Fourth Semester

- ANT 105 - Cultural Anthropology **3.0 Credit(s)**
- BIO 186 - Microbiology **4.0 Credit(s)**<sup>1</sup>
- CHM 176 - General Chemistry II **5.0 Credit(s)**<sup>1</sup>
- PSY 241 - Abnormal Psychology **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 62.0

Notes:

<sup>1</sup>Required courses for the program

<sup>2</sup>One elective must also satisfy the diversity requirement.

## Business Administration A.A.S.

Business Administration program of study is intended for students interested in completing a two-year degree and entering the workforce upon completion. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**  
\*May substitute for ENG 110 (3 credits)
- BUS 102 - Introduction to Business **3.0 Credit(s)**
- FIN 121 - Personal Finance **3.0 Credit(s)**
- ACC 121 - Principles of Accounting I **3.0 Credit(s)**
- CSC 116 - Information Computing **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Second Semester

- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**  
\*\*May substitute for MAT 102 or higher (3 credits)
- MGT 101 - Principles of Management **3.0 Credit(s)**
- BUS 154 - E-business **3.0 Credit(s)**
- BUS 121 - Business Communications **3.0 Credit(s)**
- ACC 122 - Principles of Accounting II **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- FIN 142 - Corporate Finance **3.0 Credit(s)**
- MKT 110 - Principles of Marketing **3.0 Credit(s)**
- MKT 140 - Principles of Selling **3.0 Credit(s)**
- ECN 130 - Principles of Microeconomics **3.0 Credit(s)**
- MGT 170 - Human Resource Management **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Fourth Semester

- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- BUS 130 - Introduction to Entrepreneurship **3.0 Credit(s)**
- BUS 185 - Business Law I **3.0 Credit(s)**
- ECN 120 - Principles of Macroeconomics **3.0 Credit(s)**
- MGT 932 - Internship **1.0 - 8.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 60.0

Notes:

\*May substitute for ENG 110.

\*\*May substitute for MAT 102 or higher.

## Business Administration Certificate

Business Administration program of study is intended for students interested in completing a semester and entering the workforce upon completion. Graduates of this program are awarded a certificate. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**  
\*May substitute for ENG 110 (3 credits)
- BUS 102 - Introduction to Business **3.0 Credit(s)**
- FIN 121 - Personal Finance **3.0 Credit(s)**
- ACC 121 - Principles of Accounting I **3.0 Credit(s)**
- CSC 116 - Information Computing **3.0 Credit(s)**
- MGT 101 - Principles of Management **3.0 Credit(s)**

Semester Total: 18.0 Credits

Total Semester Hours Required: 18.0

Notes:

\*May substitute for ENG 110.

## Business Administration Diploma

Business Administration program of study is intended for students interested in completing a diploma and entering the workforce upon completion. Graduates of this program are awarded a diploma. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**  
\*May substitute for ENG 110 (3 credits)
- BUS 102 - Introduction to Business **3.0 Credit(s)**
- FIN 121 - Personal Finance **3.0 Credit(s)**
- ACC 121 - Principles of Accounting I **3.0 Credit(s)**
- CSC 116 - Information Computing **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Second Semester

- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**  
\*\*May substitute for MAT 102 or higher (3 credits)
- MGT 101 - Principles of Management **3.0 Credit(s)**
- BUS 154 - E-business **3.0 Credit(s)**
- BUS 121 - Business Communications **3.0 Credit(s)**
- ACC 122 - Principles of Accounting II **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 30.0

Notes:

\*May substitute for ENG 110.

\*\*May substitute for MAT 102 or higher.

## Business Administration Transfer Major A.A.

Business Administration Transfer Major program of study that enables graduates to transfer to four-year institutions within Iowa. This program consists of a series of both required and elective courses that meet the Business Core curriculum requirements of a university's College of Business, as well as the comprehensive requirements of the university. Iowa Western Community College maintains articulation agreements with many regional four-year institutions. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- ACC 121 - Principles of Accounting I **3.0 Credit(s)**<sup>1</sup>
- BUS 102 - Introduction to Business **3.0 Credit(s)**
- HUM 287 - Leadership Development Studies **3.0 Credit(s)**
- CSC 116 - Information Computing **3.0 Credit(s)**<sup>1</sup>

Semester Total: 15.0 Credits

#### Second Semester

- ENG 106 - Composition II **3.0 Credit(s)**
- MAT 157 - Statistics **4.0 Credit(s)**<sup>1</sup>
- ACC 122 - Principles of Accounting II **3.0 Credit(s)**<sup>1</sup>
- MGT 101 - Principles of Management **3.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- BUS 210 - Business Statistics **3.0 Credit(s)**<sup>1</sup>
- ECN 120 - Principles of Macroeconomics **3.0 Credit(s)**<sup>1</sup>
- SPC 112 - Public Speaking **3.0 Credit(s)**
- ENV 111 - Environmental Science **4.0 Credit(s)**
- MUS 100 - Music Appreciation **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Fourth Semester

- ECN 130 - Principles of Microeconomics **3.0 Credit(s)**<sup>1</sup>
- BUS 185 - Business Law I **3.0 Credit(s)**<sup>1</sup>
- PHI 142 - Ethics in Business **3.0 Credit(s)**
- POL 111 - American National Government **3.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 62.0

Notes:

<sup>1</sup>Required courses for the program.

## CAD Certificate

CAD program of study prepares students to assist engineers in the design of products or the solution to problems utilizing computerized drawings for all types of machines and manufacturing industries. Coursework emphasizes the Product Lifecycle Management (PLM) model of industrial product management. Students learn various CAD techniques. Graduates of this program are awarded a certificate. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- EGT 155 - Engineering Drawing Practices **3.0 Credit(s)**
- EGT 113 - Introduction to PLM **3.0 Credit(s)**
- CAD 129 - CAD I **3.0 Credit(s)**

Semester Total: 9.0 Credits

#### Second Semester

- CAD 197 - CAD 3D-NX **4.0 Credit(s)**
- EGT 167 - Geometric Dimensioning and Tolerancing **3.0 Credit(s)**

Semester Total: 7.0 Credits

Total Semester Hours Required: 16.0

## CAD Diploma

CAD program of study prepares students to assist engineers in the design of products or the solution to problems utilizing computerized drawings for all types of machines and manufacturing industries. Coursework emphasizes the Product Lifecycle Management (PLM) model of industrial product management. Students learn various CAD techniques as well as understanding various materials used in manufacturing. Graduates of this program are awarded a diploma. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- EGT 155 - Engineering Drawing Practices **3.0 Credit(s)**
- EGT 113 - Introduction to PLM **3.0 Credit(s)**
- EGT 171 - Manufacturing Processes **3.0 Credit(s)**
- CAD 129 - CAD I **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>2</sup>

Semester Total: 18.0 Credits

#### Second Semester

- MAT 750 - Technical Mathematics II **5.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- CAD 197 - CAD 3D-NX **4.0 Credit(s)**
- EGT 167 - Geometric Dimensioning and Tolerancing **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Summer

- CAD 933 - Design Technology Internship **6.0 Credit(s)**

Semester Total: 6.0 Credits

Total Semester Hours Required: 39.0

Notes:

<sup>2</sup> May substitute with MAT 102 or higher.

## Chemistry Transfer Major, A.S.

Chemistry Transfer Major program of study encompasses the first two years of a university chemistry major. Chemists are in demand worldwide in technological fields, including plastics, medicine, pharmacology, vaccines, recombinant DNA, and other related areas. Graduates of this program are awarded an Associate of Science (A.S.) degree.

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- CHM 166 - General Chemistry I **5.0 Credit(s)**<sup>1</sup>
- MAT 211 - Calculus I **5.0 Credit(s)**<sup>1</sup>
- Social Science Elective **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- ENG 106 - Composition II **3.0 Credit(s)**
- CHM 176 - General Chemistry II **5.0 Credit(s)**<sup>1</sup>
- MAT 217 - Calculus II **5.0 Credit(s)**<sup>1</sup>
- Humanities Elective **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- SPC 112 - Public Speaking **3.0 Credit(s)**
- CHM 263 - Organic Chemistry I **5.0 Credit(s)**<sup>1</sup>
- PHY 210 - Classical Physics I **4.0 Credit(s)**<sup>1</sup>
- PHY 211 - Classical Physics I Lab **1.0 Credit(s)**<sup>1</sup>
- Social Science/Humanities Elective **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Fourth Semester

- CHM 273 - Organic Chemistry II **5.0 Credit(s)**<sup>1</sup>
- PHY 220 - Classical Physics II **4.0 Credit(s)**<sup>1</sup>
- PHY 221 - Classical Physics II Lab **1.0 Credit(s)**<sup>1</sup>
- Social Science/Humanities Elective **2.0 Credit(s)**

Semester Total: 12.0 Credits

Total Semester Hours Required: 60.0

Notes:

One elective must also satisfy the diversity requirement.

<sup>1</sup>Required courses for the program

## Communication Transfer Major, A.A.

Communication Transfer Major program of study will learn about concepts and practices of human communication and mediated communication. Courses focus on communication within business and organizations and among people with diverse cultural backgrounds. This program prepares students for a variety of avenues within a business environment, or for transfer to a four-year program in business or communications. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

### Recommended Course Sequence

#### First Semester

- SPC 112 - Public Speaking **3.0 Credit(s)**<sup>1</sup>
- MAT 157 - Statistics **4.0 Credit(s)**
- ENG 105 - Composition I **3.0 Credit(s)**<sup>1</sup>
- MMS 186 - Digital Media Analytics **3.0 Credit(s)**
- ART 184 - Photography **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- ENG 106 - Composition II **3.0 Credit(s)**<sup>1</sup>
- SPC 120 - Intercultural Communications **3.0 Credit(s)**<sup>1</sup>
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**
- ENV 111 - Environmental Science **4.0 Credit(s)**
- MMS 204 - New Media Production **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- SPC 170 - Professional Communications **3.0 Credit(s)**<sup>1</sup>
- JOU 110 - Introduction to Mass Media **3.0 Credit(s)**<sup>1</sup>
- MMS 202 - Social Media Marketing **3.0 Credit(s)**
- MMS 216 - Social Media Capstone **4.0 Credit(s)**

Semester Total: 13.0 Credits

#### Fourth Semester

- SPC 122 - Interpersonal Communication **3.0 Credit(s)**<sup>1</sup>
- HUM 287 - Leadership Development Studies **3.0 Credit(s)**
- PHI 211 - Ethics in the Media **3.0 Credit(s)**
- HIS 251 - U.S. History 1945 to Present **3.0 Credit(s)**
- PSY 111 - Introduction to Psychology **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 60.0

#### Notes:

One elective must also satisfy the diversity requirement.

<sup>1</sup>Required courses for the program

## Computers: Application & Web Programming, A.A.S.

Computers: Application & Web Programming program of study prepares students for entry-level professional careers as programmers in the business world. Upon successful completion, students in this course of study are proficient in multiple programming languages, and World Wide Web technologies. Students gain experience in these languages while working hands-on with current technology and multiple computer environments. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- CSC 114 - Introduction to Information Technology **3.0 Credit(s)**
- CIS 207 - Fundamentals of Web Programming **3.0 Credit(s)**
- CIS 127 - Introduction to Programming **3.0 Credit(s)**
- CSC 121 - Operating Systems **3.0 Credit(s)**
- NET 142 - Network Essentials **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Second Semester

- CIS 171 - Java **3.0 Credit(s)**
- CIS 213 - Advanced Client Side Scripting **3.0 Credit(s)**
- CIS 134 - Web Design **3.0 Credit(s)**
- CIS 332 - Database and SQL **3.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- CIS 215 - Server Side Web Programming **3.0 Credit(s)**
- CIS 175 - Java II **3.0 Credit(s)**
- CIS 139 - Programming I **3.0 Credit(s)**
- WDV 133 - Mobile Web Apps **3.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**

Semester Total: 18.0 Credits

#### Fourth Semester

- CIS 780 - Computer Projects **3.0 Credit(s)**
- NET 810 - Computer Internship **1.0 - 8.0 Credit(s)**
- CIS 144 - Programming II **3.0 Credit(s)**
- CIS 158 - Web e-Business **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>
- HUM 287 - Leadership Development Studies **3.0 Credit(s)**

Semester Total: 18.0 Credits

Total Semester Hours Required: 66.0

#### Notes:

<sup>1</sup>May substitute MAT 102 or higher.

## Computers: Cyber Security Certificate

Computers: Cyber Security program of study prepares graduates for an entry level cyber security position. Students develop a basic foundation of system administration, information security, cyber investigations, and forensics. Graduates of this program are awarded a certificate. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- NET 790 - PC Support I **3.0 Credit(s)**
- CSC 121 - Operating Systems **3.0 Credit(s)**
- CIS 601 - Introduction to Cryptography **3.0 Credit(s)**
- CIS 602 - Cyber Investigations and Forensics **3.0 Credit(s)**
- CIS 616 - Network and Information Security Basics **3.0 Credit(s)**
- CIS 617 - Information Systems, Forensics, and Legal Topics **3.0 Credit(s)**

Semester Total: 18.0 Credits

Total Semester Hours Required: 18.0

## Computers: Cyber Security Diploma

Computers: Cyber Security program of study prepares students for an entry level cyber security position. Students learn how to apply various methods of cyber security investigation and forensics. Students demonstrate an understanding of network systems and network security, manage firewalls, and install and configure systems and applications. Graduates of this program are awarded a diploma. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- NET 790 - PC Support I **3.0 Credit(s)**
- CSC 121 - Operating Systems **3.0 Credit(s)**
- CIS 601 - Introduction to Cryptography **3.0 Credit(s)**
- CIS 602 - Cyber Investigations and Forensics **3.0 Credit(s)**
- CIS 616 - Network and Information Security Basics **3.0 Credit(s)**
- CIS 617 - Information Systems, Forensics, and Legal Topics **3.0 Credit(s)**

Semester Total: 18.0 Credits

#### Second Semester

- NET 313 - Windows Server **3.0 Credit(s)**
- NET 418 - LINUX Administration **3.0 Credit(s)**
- NET 142 - Network Essentials **3.0 Credit(s)**
- CIS 619 - Network Attacks, Intrusions, and Penetration Testing **3.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 33.0

## Computers: Cyber Security Technology A.A.S.

Computers: Cyber Security program of study prepares students to be employed in a cyber security position upon graduation. Students hone skills and focus on becoming experts at identifying threats. Students perform threat assessment and apply best practices towards defending and securing a computer network. Graduates of this program are awarded an Associate of Applied Science (A.A.S) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- NET 790 - PC Support I **3.0 Credit(s)**
- CSC 121 - Operating Systems **3.0 Credit(s)**
- CIS 601 - Introduction to Cryptography **3.0 Credit(s)**
- CIS 602 - Cyber Investigations and Forensics **3.0 Credit(s)**
- CIS 616 - Network and Information Security Basics **3.0 Credit(s)**
- CIS 617 - Information Systems, Forensics, and Legal Topics **3.0 Credit(s)**

Semester Total: 18.0 Credits

#### Second Semester

- NET 313 - Windows Server **3.0 Credit(s)**
- NET 418 - LINUX Administration **3.0 Credit(s)**
- NET 142 - Network Essentials **3.0 Credit(s)**
- CIS 619 - Network Attacks, Intrusions, and Penetration Testing **3.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- CIS 621 - Assessments and Audits **3.0 Credit(s)**
- CIS 623 - Boundary Protection **3.0 Credit(s)**
- CIS 625 - Information Assurance Fundamentals **3.0 Credit(s)**
- CIS 332 - Database and SQL **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>
- SOC 240 - Criminology **3.0 Credit(s)**

Semester Total: 18.0 Credits

#### Fourth Semester

- CIS 627 - Building Secure Environments **3.0 Credit(s)**
- CIS 628 - Information Warfare **3.0 Credit(s)**
- CIS 629 - Security Capstone **3.0 Credit(s)**
- CIS 127 - Introduction to Programming **3.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**

Semester Total: 18.0 Credits

Total Semester Hours Required: 69.0

Notes:

<sup>1</sup>May substitute MAT 102 or higher

## Computers: Desktop Support Certificate

Computers: Desktop Support program of study prepares students for careers in support of computer users. Students learn to install and manage computer hardware and operating systems. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- SPC 122 - Interpersonal Communication **3.0 Credit(s)**
- NET 790 - PC Support I **3.0 Credit(s)**
- NET 785 - Fundamentals of Desktop Support **3.0 Credit(s)**
- CSC 121 - Operating Systems **3.0 Credit(s)**
- NET 795 - Desktop Support Practicum **1.0 Credit(s)**
- PHI 142 - Ethics in Business **3.0 Credit(s)**

Semester Total: 16.0 Credits

Total Semester Hours Required: 16.0

#### Notes:

Students must earn a "C" or higher in all required courses in order to graduate.

## Computers: Network Administration Certificate

Computers: Network Administration program of study prepares students for employment at the entry level of network administration in an IT department. Students learn to design, install, and maintain networks. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- NET 790 - PC Support I **3.0 Credit(s)**
- CSC 121 - Operating Systems **3.0 Credit(s)**

Semester Total: 6.0 Credits

#### Second Semester

- NET 204 - Introduction to Networks **3.0 Credit(s)**
- CIS 127 - Introduction to Programming **3.0 Credit(s)**

Semester Total: 6.0 Credits

#### Third Semester

- NET 311 - Switching, Routing, and Wireless Essentials **3.0 Credit(s)**
- NET 612 - Fundamentals of Network Security **3.0 Credit(s)**

Semester Total: 6.0 Credits

#### Fourth Semester

- NET 278 - Enterprise Networking, Security, and Automation **3.0 Credit(s)**

Semester Total: 3.0 Credits

Total Semester Hours Required: 21.0

## Computers: Network and System Administration, A.A.S.

Computers: Network and System Administration program of study provides students with the necessary training to install, maintain and administer operating systems. Students learn current network technologies used to connect, route, and secure network traffic. Students also become proficient with installing and maintaining hardware and software for servers and desktops. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- SPC 122 - Interpersonal Communication **3.0 Credit(s)**
- NET 790 - PC Support I **3.0 Credit(s)**
- NET 785 - Fundamentals of Desktop Support **3.0 Credit(s)**
- CSC 121 - Operating Systems **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**  
\*May substitute MAT 102 or higher

Semester Total: 15.0 Credits

#### Second Semester

- CIS 332 - Database and SQL **3.0 Credit(s)**
- NET 313 - Windows Server **3.0 Credit(s)**
- NET 418 - LINUX Administration **3.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**
- NET 204 - Introduction to Networks **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- NET 495 - Virtual Infrastructure **3.0 Credit(s)**
- NET 343 - Windows Directory Services **3.0 Credit(s)**
- CIS 127 - Introduction to Programming **3.0 Credit(s)**
- NET 612 - Fundamentals of Network Security **3.0 Credit(s)**
- NET 311 - Switching, Routing, and Wireless Essentials **3.0 Credit(s)**
- PHI 142 - Ethics in Business **3.0 Credit(s)**

Semester Total: 18.0 Credits

#### Fourth Semester

- NET 278 - Enterprise Networking, Security, and Automation **3.0 Credit(s)**
- CIS 780 - Computer Projects **3.0 Credit(s)**
- NET 810 - Computer Internship **1.0 - 8.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- NET 795 - Desktop Support Practicum **1.0 Credit(s)**

Semester Total: 16.0 Credits

Total Semester Hours Required: 64.0

## Computers: Programming Certificate

Computers: Programming program of study prepares students for entry-level professional careers as programmers in the business world. Upon successful completion, students in this course of study have a basic understanding of programming languages, and World Wide Web technologies. Students are introduced to programming languages while working hands-on with current technology and multiple computer environments. Graduates of this program are awarded a certificate. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- CIS 207 - Fundamentals of Web Programming **3.0 Credit(s)**
- CIS 127 - Introduction to Programming **3.0 Credit(s)**
- CSC 121 - Operating Systems **3.0 Credit(s)**
- CSC 114 - Introduction to Information Technology **3.0 Credit(s)**

Semester Total: 12.0 Credits

#### Second Semester

- CIS 213 - Advanced Client Side Scripting **3.0 Credit(s)**
- CIS 134 - Web Design **3.0 Credit(s)**
- CIS 171 - Java **3.0 Credit(s)**
- CIS 332 - Database and SQL **3.0 Credit(s)**

Semester Total: 12.0 Credits

Total Semester Hours Required: 24.0

## Computers: System Administration Certificate

Computers: System Administrator program of study prepares students for employment at the entry level of system administration in an IT department. Students learn to design, install, and maintain servers, desktops, and virtual environments. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- CIS 127 - Introduction to Programming **3.0 Credit(s)**
- NET 790 - PC Support I **3.0 Credit(s)**
- CSC 121 - Operating Systems **3.0 Credit(s)**

Semester Total: 9.0 Credits

#### Second Semester

- NET 313 - Windows Server **3.0 Credit(s)**
- NET 418 - LINUX Administration **3.0 Credit(s)**

Semester Total: 6.0 Credits

#### Third Semester

- NET 343 - Windows Directory Services **3.0 Credit(s)**
- NET 495 - Virtual Infrastructure **3.0 Credit(s)**
- CIS 332 - Database and SQL **3.0 Credit(s)**

Semester Total: 9.0 Credits

Total Semester Hours Required: 24.0

## Computers: Web Design and Coding Certificate

Computers: Web Design and Coding provides students an opportunity to prepare for a position in front-end web design by focusing on web coding and graphic design principles needed to be successful in the field. Graduates of the program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- CIS 207 - Fundamentals of Web Programming **3.0 Credit(s)**
- GRA 104 - Introduction to Graphic Communications **3.0 Credit(s)**
- WDV 121 - Web Interface Design **3.0 Credit(s)**

Semester Total: 9.0 Credits

#### Second Semester

- CIS 134 - Web Design **3.0 Credit(s)**
- CIS 213 - Advanced Client Side Scripting **3.0 Credit(s)**
- ART 125 - Digital Media **3.0 Credit(s)**

Semester Total: 9.0 Credits

Total Semester Hours Required: 18.0

## Computers: Web Design and Development Diploma

Computers: Web Design and Development program of study is an accelerated program that provides a student an opportunity to prepare a student for a position in front-end web design, graphic design principles and server-side web programming. Graduates of the program are awarded a diploma.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- CIS 207 - Fundamentals of Web Programming **3.0 Credit(s)**
- GRA 104 - Introduction to Graphic Communications **3.0 Credit(s)**
- WDV 121 - Web Interface Design **3.0 Credit(s)**
- ART 125 - Digital Media **3.0 Credit(s)**

Semester Total: 12.0 Credits

#### Second Semester

- CIS 332 - Database and SQL **3.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**
- CIS 134 - Web Design **3.0 Credit(s)**
- CIS 213 - Advanced Client Side Scripting **3.0 Credit(s)**

Semester Total: 12.0 Credits

#### Third Semester

- CIS 215 - Server Side Web Programming **3.0 Credit(s)**
- CIS 127 - Introduction to Programming **3.0 Credit(s)**
- NET 142 - Network Essentials **3.0 Credit(s)**
- WDV 133 - Mobile Web Apps **3.0 Credit(s)**

Semester Total: 12.0 Credits

Total Semester Hours Required: 36.0

## Computers: Web Design and Development, A.A.S.

Computers: Web Design and Development program of study focuses on preparing graduates for an entry-level position in front-end web design and back-end web programming and app development. Students create static and dynamic websites, web applications and mobile apps from start to finish. Graduates of the program are awarded an Associates of Applied Studies (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- CIS 207 - Fundamentals of Web Programming **3.0 Credit(s)**
- GRA 104 - Introduction to Graphic Communications **3.0 Credit(s)**
- WDV 121 - Web Interface Design **3.0 Credit(s)**
- ART 125 - Digital Media **3.0 Credit(s)**
- HUM 287 - Leadership Development Studies **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Second Semester

- CIS 213 - Advanced Client Side Scripting **3.0 Credit(s)**
- CIS 134 - Web Design **3.0 Credit(s)**
- CIS 332 - Database and SQL **3.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- CIS 215 - Server Side Web Programming **3.0 Credit(s)**
- WDV 133 - Mobile Web Apps **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>
- CIS 127 - Introduction to Programming **3.0 Credit(s)**
- NET 142 - Network Essentials **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Fourth Semester

- CIS 158 - Web e-Business **3.0 Credit(s)**
- CIS 780 - Computer Projects **3.0 Credit(s)**
- NET 810 - Computer Internship **1.0 - 8.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- CIS 171 - Java **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 60.0

Notes:

<sup>1</sup>May substitute MAT 102 or higher

## Construction Management Certificate

Construction Management program of study prepares students for management/supervisory positions in the construction technology program. This program exposes students to estimating, management styles, drafting/CAD, construction inspections, and economical factors. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- CON 325 - Estimating **3.0 Credit(s)**
- MGT 101 - Principles of Management **3.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**

Semester Total 9.0 Credits

#### Second Semester

- CON 119 - Construction Materials and Inspection **3.0 Credit(s)**
- CET 208 - Technical Drafting and CAD **4.0 Credit(s)**
- PHI 142 - Ethics in Business **3.0 Credit(s)**

Semester Total 10.0 Credits

Total Semester Hours Required: 19.0

## Construction Management, A.A.S.

Construction Management program of study provides a basic knowledge of carpentry and prepares students for management/supervisory positions in the construction field or a similar industry. Students learn all phases of building or remodeling of homes, apartments and commercial structures. Students gain practical experience during a full-time, paid internship in the construction fields during the 2nd year of the program. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>
- CON 114 - Blueprint Reading **3.0 Credit(s)**
- CON 180 - Principles of Building Construction I **3.0 Credit(s)**
- CON 170 - Building Construction Techniques I **6.0 Credit(s)**
- CON 266 - Construction Safety **3.0 Credit(s)**

Semester Total 18.0 Credits

#### Second Semester

- CON 244 - Related Trade Applications **3.0 Credit(s)**
- CON 181 - Principles of Building Construction II **3.0 Credit(s)**
- CON 171 - Building Construction Techniques II **6.0 Credit(s)**
- CON 115 - Commercial Print Reading **3.0 Credit(s)**
- CON 118 - Introduction to Sustainable Construction **3.0 Credit(s)**

Semester Total 18.0 Credits

#### Summer

- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- CON 348 - Supervision and Leadership in Building Construction **3.0 Credit(s)**

Semester Total 6.0 Credits

#### Third Semester

- CON 425 - Internship **4.0 Credit(s)**
- CON 325 - Estimating **3.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**
- MGT 101 - Principles of Management **3.0 Credit(s)**
- PHI 142 - Ethics in Business **3.0 Credit(s)**

Semester Total 16.0 Credits

#### Fourth Semester

- CON 426 - Internship II **4.0 Credit(s)**
- CON 119 - Construction Materials and Inspection **3.0 Credit(s)**
- CET 208 - Technical Drafting and CAD **4.0 Credit(s)**
- HUM 287 - Leadership Development Studies **3.0 Credit(s)**

Semester Total 14.0 Credits

Total Semester Hours Required: 72.0

Notes:

<sup>1</sup> May substitute MAT 102 or higher.

## Construction Technology: Carpentry Certificate

Construction Technology: Carpentry program of study prepares students for entry level jobs in the residential construction industry. This certificate program will expose students to carpentry theory, techniques, and building materials. Students receive safety training and complete the 10-hour OSHA and EPA training. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MAT 743 - Technical Math **3.0 Credit(s)** <sup>1</sup>
- CON 114 – Blueprint Reading **3.0 Credit(s)**
- CON 180 – Principles of Building Construction I **3.0 Credit(s)**
- CON 170 – Building Construction Techniques I **6.0 Credit(s)**
- CON 266 - Construction Safety **3.0 Credit(s)**

Semester Total: 18.0 Credits

Total Semester Hours Required: 18.0

Notes:

<sup>1</sup>May substitute with MAT 102 or higher.

## Construction Technology: Diploma

Construction Technology program of study provides a basic knowledge of carpentry and related skills used in the residential and commercial construction industry. Students learn the building or remodeling of homes, apartments and commercial structures. The program provides the opportunity to learn and apply all phases of the industry with emphasis on carpentry and the related areas of electricity, HVAC, blueprint reading, and math. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MAT 743 - Technical Math **3.0 Credit(s)** <sup>1</sup>
- CON 114 - Blueprint Reading **3.0 Credit(s)**
- CON 180 - Principles of Building Construction I **3.0 Credit(s)**
- CON 170 - Building Construction Techniques I **6.0 Credit(s)**
- CON 266 - Construction Safety **3.0 Credit(s)**

Semester Total: 18.0 Credits

#### Second Semester

- CON 244 - Related Trade Applications **3.0 Credit(s)**
- CON 181 - Principles of Building Construction II **3.0 Credit(s)**
- CON 171 - Building Construction Techniques II **6.0 Credit(s)**
- CON 115 - Commercial Print Reading **3.0 Credit(s)**
- CON 118 - Introduction to Sustainable Construction **3.0 Credit(s)**

Semester Total: 18.0 Credits

Total Semester Hours Required: 36.0

Notes:

<sup>1</sup>May substitute with MAT 102 or higher.

## Criminal Justice Transfer Major, A.A.

Criminal Justice Transfer Major program of study is designed to provide students with the background necessary to enter the justice field and/or to continue education at a four-year institution upon graduation. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- CRJ 100 - Introduction to Criminal Justice **3.0 Credit(s)**<sup>1</sup>
- CRJ 111 - Police and Society **3.0 Credit(s)**<sup>1</sup>
- SPC 112 - Public Speaking **3.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**<sup>1</sup>

Semester Total: 15.0 Credits

#### Second Semester

- ENG 106 - Composition II **3.0 Credit(s)**
- CRJ 120 - Introduction to Corrections **3.0 Credit(s)**<sup>1</sup>
- CRJ 133 - Constitutional Criminal Procedure **3.0 Credit(s)**
- Humanities Elective **3.0 Credit(s)**
- MAT 157 - Statistics **4.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

#### Third Semester

- CRJ 130 - Criminal Law **3.0 Credit(s)**<sup>1</sup>
- CRJ 258 - Ethical Issues in Criminal Justice **3.0 Credit(s)**<sup>1</sup>
- POL 111 - American National Government **3.0 Credit(s)**<sup>1</sup>
- Lab Science Requirement **4.0 Credit(s)**
- SOC 230 - Juvenile Delinquency **3.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

#### Fourth Semester

- Humanities Electives **6.0 Credit(s)**
- General Electives **3.0 Credit(s)**
- Distributed Requirement **5.0 Credit(s)**
- SOC 240 - Criminology **3.0 Credit(s)**<sup>1</sup>

Semester Total: 17.0 Credits

Total Semester Hours Required: 64.0

#### Notes:

One elective must also satisfy the diversity requirement.

<sup>1</sup>Required courses for the program

## Culinary Arts: Baking and Pastry Certificate

Culinary Arts: Baking and Pastry program of study prepares students for a challenging career in the baking industry. The curriculum emphasizes fundamental techniques in baking. Throughout the program, students develop professionalism and proficiency in preparation procedures, production methods and presentation techniques of pastries, baked goods, and desserts. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- HCM 100 - Sanitation and Safety **2.0 Credit(s)**
- HCM 186 - Culinary Foundations I **3.0 Credit(s)**
- HCM 113 - Culinary Baking **1.0 Credit(s)**
- HCM 322 - Breads and Pastries **3.0 Credit(s)**
- HCM 323 - Cakes and Chocolates **3.0 Credit(s)**
- HCM 330 - Hospitality Personnel Management **3.0 Credit(s)**
- BUS 130 - Introduction to Entrepreneurship **3.0 Credit(s)**

Semester Total: 18.0 Credits

Total Semester Hours Required: 18.0

## Culinary Arts: Food Technician Certificate

Culinary Arts: Food Technician program of study prepares students for a challenging career in restaurant, hotel, motel, institutional, health care and private club facilities. The curriculum emphasizes the fundamental techniques of food preparation and production skills. It enables the students to develop culinary skills as they prepare for entry level positions in the industry. Related instruction emphasizes the use and selection of equipment, safety and sanitation, measurement math applications, and product selection. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- HCM 100 - Sanitation and Safety **2.0 Credit(s)**
- HCM 186 - Culinary Foundations I **3.0 Credit(s)**
- HCM 191 - Quantity Food Production I Lab **4.0 Credit(s)**
- HCM 187 - Culinary Foundations II **3.0 Credit(s)**
- HCM 192 - Quantity Food Production II Lab **4.0 Credit(s)**

Semester Total: 16.0 Credits

Total Semester Hours Required: 16.0

## Culinary Arts: Culinary & Hospitality Management A.A.S.

Culinary Arts: Culinary & Hospitality Management program of study prepares students for a challenging career in all facets of the culinary and hospitality industry. The curriculum emphasizes fundamental and intermediate techniques in culinary skills and kitchen management. Students develop supervisory skills and training to become a culinarian. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- HCM 100 - Sanitation and Safety **2.0 Credit(s)**
- HCM 186 - Culinary Foundations I **3.0 Credit(s)**
- HCM 113 - Culinary Baking **1.0 Credit(s)**
- HCM 191 - Quantity Food Production I Lab **4.0 Credit(s)**
- HCM 323 - Cakes and Chocolates **3.0 Credit(s)**
- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- HCM 187 - Culinary Foundations II **3.0 Credit(s)**
- HCM 192 - Quantity Food Production II Lab **4.0 Credit(s)**
- HCM 246 - Garde Manger/Charcuterie **1.0 Credit(s)**
- HCM 247 - Garde Manger/Charcuterie Lab **2.0 Credit(s)**
- HCM 200 - Dining Service **2.0 Credit(s)**
- BUS 130 - Introduction to Entrepreneurship **3.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**

Semester Total: 18.0 Credits

#### Third Semester

- HCM 230 - Nutrition and Wellness **3.0 Credit(s)**
- HCM 330 - Hospitality Personnel Management **3.0 Credit(s)**
- HCM 172 - International Cuisine Lab **3.0 Credit(s)**
- HCM 173 - International Cuisine **2.0 Credit(s)**
- HCM 322 - Breads and Pastries **3.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Fourth Semester

- HCM 248 - A la Carte Cooking **2.0 Credit(s)**
- HCM 249 - A la Carte Cooking Lab **4.0 Credit(s)**
- HCM 532 - Culinary Capstone **2.0 Credit(s)**
- HCM 512 - Culinary Internship **2.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- PHI 142 - Ethics in Business **3.0 Credit(s)**

Semester Total: 16.0 Credits

Total Semester Hours Required: 67.0

## Dental Assistant Diploma

Dental Assistant program of study prepares students to assist dentists in four-handed dentistry and to perform chairside related procedures. This program includes clinical experience at a dental school and in area dental offices. We adhere to CDC and OSHA guidelines. A copy of our infection control policy is located in the office of the Health Division. Graduates of this program are eligible to take the Dental Assistant National Board and become a Certified Dental Assistant. Graduates are also eligible to take the Iowa Dental Assistants Registration Exam and become an Iowa Registered Dental Assistant. The program in dental assisting is accredited by the Commission on Dental Accreditation (CODA), a specialized accrediting body recognized by the Council on Postsecondary Accreditation and the United States Department of Education. The Commission on Dental Accreditation can be contacted at (312) 440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### Program Prerequisites

General Education Courses that must be completed prior to first semester of Dental Assistant Diploma:

- ENG 105 - Composition I **3.0 Credit(s) OR**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**
- HSC 128 - Anatomy and Physiology for Allied Health Programs **3.0 Credit(s)**

Semester Total: 6.0 Credits

#### First Semester

- DEA 312 - Dental Radiography I **3.0 Credit(s)**
- DEA 403 - Dental Materials **3.0 Credit(s)**
- DEA 502 - Dental Assisting Principles **4.0 Credit(s)**
- DEA 253 - Dental Science I **4.0 Credit(s)**

Semester Total: 14.0 Credits

#### Second Semester

- DEA 321 - Dental Radiography II **2.0 Credit(s)**
- DEA 602 - Dental Specialties **4.5 Credit(s)**
- DEA 706 - Procedures for the Dental Office **2.5 Credit(s)**
- DEA 263 - Dental Science II **2.0 Credit(s)**
- DEA 582 - Dental Assisting Experience I **2.0 Credit(s)**
- Psychology Elective **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Summer

- DEA 585 - Dental Assisting Experience II **5.0 Credit(s)**
- DEA 933 - Internship Seminar **1.0 Credit(s)**

Semester Total: 6.0 Credits

Total Semester Hours Required: 42.0

#### Notes:

Courses with DEA prefix must be taken in the sequence listed above. Students must earn a "C" or higher in all Dental Assisting courses in order to graduate.

## Dental Hygiene, A.A.S.

Dental Hygiene program of study prepares students to become preventive health professionals who provide educational and clinical services to support oral health. These services include: evaluation; charting oral disease and conditions; removing deposits from teeth; exposing and processing dental radiographs; and applying fluoride and sealants to teeth. Graduates can seek positions in general or specialty dental practices, hospitals, research or academic institutions, public health, business and industry, or armed services. The rigorous science-oriented curriculum is the foundational framework for applying principles from the social sciences and biomedical areas to patient oral care. Didactic courses are offered at Iowa Western; clinical experiences occur at the clinic-affiliated site, Creighton University School of Dentistry, and at extramural community sites. We adhere to CDC and OSHA guidelines. A copy of our infection control policy is located in the office of the Health Division. To become a licensed professional, graduates must successfully complete both the National Board Examination and a state or regional exam. CPR certification is required. The program in dental hygiene is accredited by the Commission on Dental Accreditation and has been granted the accreditation status of "approval without reporting requirements." The Commission is a specialized accrediting body recognized by the U.S. Department of Education. The Commission on Dental Accreditation can be contacted at (312) 440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree. Students must complete the curriculum described below:

### Program Prerequisites

- SPC 112 - Public Speaking **3.0 Credit(s)**
- ENG 105 - Composition I **3.0 Credit(s)**
- BIO 168 - Human Anatomy and Physiology I **4.0 Credit(s)**
- BIO 173 - Human Anatomy and Physiology II **4.0 Credit(s)**
- CHM 132 - Introduction to Organic and Biochemistry **4.0 Credit(s)**

Semester Total: 18.0 Credits

### Recommended Course Sequence

#### First Semester

- BIO 186 - Microbiology **4.0 Credit(s)**
- DHY 118 - Oral Histology and Embryology **1.0 Credit(s)**
- DHY 174 - Principles of Dental Hygiene **5.0 Credit(s)**
- DHY 114 - Dental Hygiene Anatomical Sciences **4.0 Credit(s)**
- DHY 155 - Radiology **2.0 Credit(s)**
- DHY 157 - Radiology Lab **1.0 Credit(s)**

Semester Total: 17.0 Credits

#### Second Semester

- DHY 183 - Dental Hygiene I Theory **2.0 Credit(s)**
- DHY 184 - Clinical Dental Hygiene I **3.0 Credit(s)**
- DHY 153 - Dental Emergencies **1.0 Credit(s)**
- DHY 211 - Periodontology **2.0 Credit(s)**
- DHY 228 - Clinical Preventive Dentistry **2.0 Credit(s)**
- DHY 141 - General and Oral Pathology **3.0 Credit(s)**

Semester Total: 13.0 Credits

#### Third Semester

- DHY 275 - Dental Hygiene II Theory **1.0 Credit(s)**
- DHY 286 - Clinical Dental Hygiene II **1.0 Credit(s)**
- DHY 288 - Local Anesthesia and Pain Control **1.0 Credit(s)**
- DHY 132 - Dental Pharmacology **3.0 Credit(s)**

Semester Total: 6.0 Credits

#### Fourth Semester

- DHY 293 - Dental Hygiene III Theory **2.0 Credit(s)**
- DHY 295 - Clinical Dental Hygiene III **4.0 Credit(s)** (4.0 Credits Required)
- DHY 252 - Community Dentistry **2.0 Credit(s)**
- DHY 213 - Periodontology II **1.0 Credit(s)**
- DHY 226 - Biomaterials for the Dental Hygienist **2.5 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**

Semester Total: 14.5 Credits

#### Fifth Semester

- DHY 303 - Dental Hygiene IV Theory **2.0 Credit(s)**
- DHY 304 - Clinical Dental Hygiene IV **4.0 Credit(s)**
- DHY 241 - Dental Ethics **1.0 Credit(s)**
- PSY 111 - Introduction to Psychology **3.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- DHY 230 - Oral Health Nutrition **2.0 Credit(s)**
- DHY 259 - Community Oral Health Service Learning Experience **1.0 Credit(s)**

Semester Total: 16.0 Credits

Total Semester Hours Required: 84.5

Notes:

**Students must earn a "C" or higher in all DHY courses in order to graduate.**

## Design Technology, A.A.S.

Design Technology program of study prepares students to assist engineers in the design of products or the solution to problems utilizing computerized drawings for all types of machines and manufacturing industries. Coursework emphasizes the Product Lifecycle Management (PLM) model of industrial product management. Students will learn various CAD techniques as well as understanding various materials used in manufacturing. Students will earn an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- EGT 155 - Engineering Drawing Practices **3.0 Credit(s)**
- EGT 113 - Introduction to PLM **3.0 Credit(s)**
- EGT 171 - Manufacturing Processes **3.0 Credit(s)**
- CAD 129 - CAD I **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>

Semester Total: 18.0 Credits

#### Second Semester

- MAT 750 - Technical Mathematics II **5.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- CAD 197 - CAD 3D-NX **4.0 Credit(s)**
- EGT 167 - Geometric Dimensioning and Tolerancing **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Summer

- CAD 933 - Design Technology Internship **6.0 Credit(s)**

Semester Total: 6.0 Credits

#### Third Semester

- SPC 122 - Interpersonal Communication **3.0 Credit(s)**
- EGT 176 - Electric Power and Electronics **4.0 Credit(s)**
- CAD 203 - Principles of Design **3.0 Credit(s)**
- CAD 238 - Design Communications **3.0 Credit(s)**
- EGT 153 - Design Statics **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Fourth Semester

- PHI 105 - Introduction to Ethics **3.0 Credit(s)**
- CAD 222 - Advanced CAD 3D-NX **3.0 Credit(s)**
- CAD 236 - Design Problems **6.0 Credit(s)**
- EGT 184 - Strength of Materials **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 70.0

Notes:

<sup>1</sup>May substitute with MAT 102 or higher.

## Diesel Mechanics Diploma

Diesel Mechanics program of study equips students with necessary skills to become entry-level diesel mechanics. It emphasizes the maintenance of over-the-road diesel trucks. Students receive instruction through a combination of theory classes and practical experience. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- DSL 324 - Introduction to Diesel **4.0 Credit(s)**
- DSL 144 - Electrical Systems **4.0 Credit(s)**
- DSL 846 - Diesel Lab I **6.0 Credit(s)**<sup>2</sup>
- General Elective **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Second Semester

- DSL 654 - Hydraulic/Air Brakes **4.0 Credit(s)**
- DSL 674 - Chassis/Driveline **4.0 Credit(s)**
- DSL 856 - Diesel Lab II **6.0 Credit(s)**<sup>2</sup>
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Summer

- DSL 742 - Air Conditioning/Refrigeration **2.0 Credit(s)**
- DSL 829 - Preventative Maintenance **2.0 Credit(s)**
- DSL 863 - Diesel Lab III **3.0 Credit(s)**<sup>2</sup>
- DSL 837 - Commercial Driver's License and Tools **1.5 Credit(s)**

Semester Total: 8.5 Credits

Total Semester Hours Required: 42.5

Notes:

<sup>2</sup>Students must complete 15 semester credit hours of laboratory courses.

## Diesel Technology, A.A.S.

Diesel Technology program of study prepares students to be proficient diesel truck technicians having skills to be competitive in the diesel truck maintenance industry. Students study all phases of the diesel truck including engines, transmissions, drive axles, electrical systems, and auxiliary systems. Instruction includes a wide variety of theory classes and up-to-date practical experiences. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- DSL 324 - Introduction to Diesel **4.0 Credit(s)**
- DSL 144 - Electrical Systems **4.0 Credit(s)**
- DSL 846 - Diesel Lab I **6.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Second Semester

- DSL 654 - Hydraulic/Air Brakes **4.0 Credit(s)**
- DSL 674 - Chassis/Driveline **4.0 Credit(s)**
- DSL 856 - Diesel Lab II **6.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Summer

- DSL 742 - Air Conditioning/Refrigeration **2.0 Credit(s)**
- DSL 863 - Diesel Lab III **3.0 Credit(s)**
- DSL 829 - Preventative Maintenance **2.0 Credit(s)**
- DSL 837 - Commercial Driver's License and Tools **1.5 Credit(s)**

Semester Total: 8.5 Credits

#### Third Semester

- DSL 354 - Engines I **4.0 Credit(s)**
- DSL 444 - Fuel Systems **4.0 Credit(s)**
- DSL 876 - Diesel Lab IV **6.0 Credit(s)**<sup>2</sup>  
or
- DSL 883 - Diesel Internship II **6.0 Credit(s)**<sup>2</sup>
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Fourth Semester

- DSL 364 - Engines II **4.0 Credit(s)**
- DSL 544 - Transmissions/Drive Axle **4.0 Credit(s)**
- DSL 886 - Diesel Lab V **6.0 Credit(s)**<sup>2</sup>  
or
- DSL 883 - Diesel Internship II **6.0 Credit(s)**<sup>2</sup>
- Social Science/Humanities Elective **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Summer

- DSL 893 - Diesel Lab VI **3.0 Credit(s)**<sup>2</sup>  
or
- DSL 881 - Diesel Internship I **3.0 Credit(s)**<sup>2</sup>

Semester Total: 3.0 Credits

Total Semester Hours Required: 79.5

#### Notes:

<sup>2</sup>Students must complete 30 credit hours of laboratory courses OR complete a minimum of 21 credit hours of laboratory courses and a maximum of 9 credit hours of internship, with any combination of laboratory and internship credit hours within that range being acceptable.

## Drafting and CAD Certificate

Drafting and CAD program of study teaches basic drafting and design fundamentals utilizing multiple industry computer-aided design (CAD) programs. Students work in entry level drafting or design positions for civil engineering firms, architect firms, and manufacturing companies. Basic surveying and constructions skills are also taught. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- EGT 155 - Engineering Drawing Practices **3.0 Credit(s)**
- CET 160 - Surveying **3.0 Credit(s)**
- CAD 139 - Introduction to CAD/CAM **3.0 Credit(s)**

Semester Total 9.0 Credits

#### Second Semester

- CET 208 - Technical Drafting and CAD **4.0 Credit(s)**
- CON 119 – Construction Materials and Inspection **3.0 Credit(s)**

Semester Total 7.0 Credits

Total Semester Hours Required: 16.0

## Early Childhood: Child Development Certificate

Early Childhood: Child Development program of study prepares students for careers in the early childhood profession. Students become knowledgeable in career development; guidance and discipline; health, safety and nutrition; and curriculum planning. Upon completion of the certificate, students are eligible for CDA certification from the Council for Professional Recognition. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ECE 103 - Introduction to Early Childhood Education **3.0 Credit(s)**
- ECE 244 - Early Childhood Guidance with Lab **4.0 Credit(s)**
- ECE 133 - Child Health, Safety, and Nutrition **3.0 Credit(s)**
- ECE 221 - Infant/Toddler Care and Education **3.0 Credit(s)**
- ECE 153 - Early Childhood Curriculum I with Lab **4.0 Credit(s)**

Semester Total: 17.0 Credits

Total Semester Hours Required: 17.0

## Early Childhood Studies Diploma

Early Childhood program of study is designed to provide students with a foundation in best practices with an emphasis in the development of the young child, planning activities and working with families. Students apply research and theory by demonstrating newly acquired skills in the Laboratory School. This program prepares students to be assistant preschool teachers and nannies. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ECE 244 - Early Childhood Guidance with Lab **4.0 Credit(s)**
- ECE 103 - Introduction to Early Childhood Education **3.0 Credit(s)**
- ECE 170 - Child Growth and Development **3.0 Credit(s)**
- ECE 153 - Early Childhood Curriculum I with Lab **4.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Second Semester

- ECE 120 - Communication with Families **2.0 Credit(s)**
- ECE 133 - Child Health, Safety, and Nutrition **3.0 Credit(s)**
- ECE 156 - Early Childhood Curriculum II with Lab **4.0 Credit(s)**
- ECE 221 - Infant/Toddler Care and Education **3.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**  
or
- ENG 105 - Composition I **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 32.0

Notes:

Students must maintain First Aid/CPR certification throughout the program.

## Early Childhood Studies, A.A.S.

Early Childhood Studies program of study prepares students to become lead teachers and child specialists in preschools, family child care homes, and Head Start programs. Students are involved in planning, leading and evaluating learning experiences through observation, discussion and active participation. Students culminate educational experience with a field experience and practicum in a variety of early childhood settings. Students must maintain First Aid/CPR certification throughout the program. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ECE 244 - Early Childhood Guidance with Lab **4.0 Credit(s)**
- ECE 103 - Introduction to Early Childhood Education **3.0 Credit(s)**
- ECE 170 - Child Growth and Development **3.0 Credit(s)**
- ECE 153 - Early Childhood Curriculum I with Lab **4.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Second Semester

- ECE 120 - Communication with Families **2.0 Credit(s)**
- ECE 156 - Early Childhood Curriculum II with Lab **4.0 Credit(s)**
- ECE 221 - Infant/Toddler Care and Education **3.0 Credit(s)**
- ECE 133 - Child Health, Safety, and Nutrition **3.0 Credit(s)**
- ENG 105 - Composition I **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- EDU 235 - Children's Literature **3.0 Credit(s)**
- ECE 287 - Exceptional Learner **3.0 Credit(s)**
- ECE 268 - Early Childhood Field Experience **4.0 Credit(s)**
- ECE 290 - Early Childhood Program Administration **3.0 Credit(s)**
- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Fourth Semester

- ECE 258 - Early Childhood Field Practicum **6.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- REL 101 - Survey of World Religions **3.0 Credit(s)**
- SOC 120 - Marriage and Family **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 63.0

## Education: Elementary Transfer Major A.A.

Education: Elementary Transfer Major program of study is designed for students who wish to become elementary teachers. The curriculum is structured so that students have the opportunity to explore the field of teaching. It is designed for transfer to institutions that offer teaching certificates. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- SPC 112 - Public Speaking **3.0 Credit(s)**
- PSY 111 - Introduction to Psychology **3.0 Credit(s)**<sup>1</sup>
- EDU 210 - Foundations of Education **3.0 Credit(s)**<sup>1</sup>
- ECE 170 - Child Growth and Development **3.0 Credit(s)**<sup>1</sup>

Semester Total: 15.0 Credits

#### Second Semester

- ENG 106 - Composition II **3.0 Credit(s)**
- HIS 152 - U.S. History Since 1877 **3.0 Credit(s)**<sup>1</sup>
- EDU 235 - Children's Literature **3.0 Credit(s)**<sup>1</sup>
- EDU 245 - Exceptional Learner **3.0 Credit(s)**<sup>1</sup>
- MAT 157 - Statistics **4.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- BIO 105 - Introductory Biology **4.0 Credit(s)**
- MAT 114 - Elementary Educators Math I **3.0 Credit(s)**<sup>1</sup>
- EDU 240 - Educational Psychology **3.0 Credit(s)**<sup>1</sup>
- PHI 101 - Introduction to Philosophy **3.0 Credit(s)**
- LIT 101 - Introduction to Literature **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Fourth Semester

- ENV 111 - Environmental Science **4.0 Credit(s)**
- POL 111 - American National Government **3.0 Credit(s)**
- EDU 255 - Technology in the Classroom **3.0 Credit(s)**<sup>1</sup>
- ART 101 - Art Appreciation **3.0 Credit(s)**
- GEO 121 - World Regional Geography **3.0 Credit(s)**
- EDU 219 - Field Experience and Seminar **1.0 Credit(s)**<sup>1</sup>

Semester Total: 17.0 Credits

Total Semester Hours Required: 64.0

Notes:

<sup>1</sup>Required courses for the program.

## Education: Secondary Transfer Major A.A.

Education: Secondary Transfer Major program of study is designed for students who wish to become secondary teachers. The curriculum is structured so that students have the opportunity to explore the field of teaching. It is designed for transfer to institutions that offer teaching certificates. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- SPC 112 - Public Speaking **3.0 Credit(s)**
- PSY 111 - Introduction to Psychology **3.0 Credit(s)**<sup>1</sup>
- EDU 210 - Foundations of Education **3.0 Credit(s)**<sup>1</sup>
- ECE 170 - Child Growth and Development **3.0 Credit(s)**<sup>1</sup>

Semester Total: 15.0 Credits

#### Second Semester

- ENG 106 - Composition II **3.0 Credit(s)**
- HIS 152 - U.S. History Since 1877 **3.0 Credit(s)**
- ENV 111 - Environmental Science **4.0 Credit(s)**
- MAT 157 - Statistics **4.0 Credit(s)**
- EDU 245 - Exceptional Learner **3.0 Credit(s)**<sup>1</sup>

Semester Total: 17.0 Credits

#### Third Semester

- BIO 105 - Introductory Biology **4.0 Credit(s)**
- EDU 240 - Educational Psychology **3.0 Credit(s)**<sup>1</sup>
- PHI 101 - Introduction to Philosophy **3.0 Credit(s)**
- GEO 121 - World Regional Geography **3.0 Credit(s)**
- LIT 101 - Introduction to Literature **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Fourth Semester

- POL 111 - American National Government **3.0 Credit(s)**
- PSY 224 - Adolescent Psychology **3.0 Credit(s)**
- ART 101 - Art Appreciation **3.0 Credit(s)**
- EDU 255 - Technology in the Classroom **3.0 Credit(s)**<sup>1</sup>
- EDU 219 - Field Experience and Seminar **1.0 Credit(s)**<sup>1</sup>

Semester Total: 13.0 Credits

Total Semester Hours Required: 61.0

Notes:

<sup>1</sup> Required courses for the program.

## Electrical Technology Certificate

Electrical Technology program of study provides students with the basic training essential for entry-level positions as an electrician in residential or commercial construction or industrial maintenance. Students are trained to understand the basic electrical theory, wiring, and blueprint reading. Graduates of this program are awarded a certificate. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ELE 231 - Basic Electrical Principles **5.0 Credit(s)**
- ELE 326 - Basics of Wiring **2.0 Credit(s)**

Semester Total: 7.0 Credits

#### Second Semester

- ELE 179 - Advanced Wiring Systems **5.0 Credit(s)**
- ELE 227 - Electrical Blueprint Reading **2.0 Credit(s)**
- ELE 207 - Residential Electrical Services **3.0 Credit(s)**

Semester Total: 10.0 Credits

Total Semester Hours Required: 17.0

## Electrical Technology Diploma

Electrical Technology program of study provides students with the training essential for positions as an electrician in residential or commercial construction or industrial maintenance. The program provides training in advanced motor control, conduit installation and bending techniques, blueprint reading, and wiring practices. Students are trained to install, replace, and repair electrical equipment and understand industry safety practices. This program is designed to meet the related technical instruction for some DOL apprenticeship programs. Graduates of this program are awarded a diploma. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ELT 215 - Motors and Controls **2.0 Credit(s)**
- IND 109 - Equipment Safety and Operation **3.0 Credit(s)**
- ELE 155 - National Electrical Code I **2.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**
- ELE 231 - Basic Electrical Principles **5.0 Credit(s)**
- ELE 326 - Basics of Wiring **2.0 Credit(s)**

Semester Total: 17.0 Credits

#### Second Semester

- ELE 179 - Advanced Wiring Systems **5.0 Credit(s)**
- ELE 227 - Electrical Blueprint Reading **2.0 Credit(s)**
- ELE 207 - Residential Electrical Services **3.0 Credit(s)**
- ELE 156 - National Electrical Code II **2.0 Credit(s)**
- ELE 180 - Electrical Lighting Systems **2.0 Credit(s)**
- SER 175 - Advanced Solar Energy: Photovoltaic **4.0 Credit(s)**

Semester Total: 18.0 Credits

Total Semester Hours Required: 35.0

## Electronic Engineering Technology, A.A.S.

Electronic Engineering Technology program of study prepares students for a technical level career in manufacturing, service and sales in these primary electronics fields: computers, telecommunications, and industrial electronics. Students learn and put into practice technology theory in industrial electronics, microelectronics, and optoelectronics. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ELT 215 - Motors and Controls **2.0 Credit(s)**
- ELT 196 - Circuit Analysis I **5.0 Credit(s)**
- IND 109 - Equipment Safety and Operation **3.0 Credit(s)**
- IND 197 - Industrial Engineering Technology Orientation **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

#### Second Semester

- ELT 250 - Programmable Logic Controllers **3.0 Credit(s)**
- ELT 201 - Circuit Analysis II **5.0 Credit(s)**
- ELT 251 - Programmable Logic Controllers Lab **2.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- NET 790 - PC Support I **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- ELT 252 - Advanced Programmable Logic Controllers **3.0 Credit(s)**
- ELT 253 - Advanced Programmable Logic Controllers Lab **2.0 Credit(s)**
- ELT 313 - Digital Circuits I **4.0 Credit(s)**
- ELT 523 - Electronic Devices **4.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Fourth Semester

- ELT 432 - Telecommunications **4.0 Credit(s)**
- ELT 433 - Telecommunications Lab **1.0 Credit(s)**
- ELT 850 - Design Projects Lab **1.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**
- Technical Elective<sup>2</sup> **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 63.0

Notes:

<sup>1</sup>May substitute for MAT 102 or higher.

<sup>2</sup>Technical Electives must be selected from the following subjects:

- ATR 113 - Industrial Robotics **3.0 Credit(s)**
- ATR 114 - Industrial Robotics Lab **2.0 Credit(s)**
- CAD 139 - Introduction to CAD/CAM **3.0 Credit(s)**
- EGR 160 - Engineering I **3.0 Credit(s)**
- ELE 227 - Electrical Blueprint Reading **2.0 Credit(s)**
- ELE 326 - Basics of Wiring **2.0 Credit(s)**
- HCR 208 - Boilers and Hydronic Systems **4.0 Credit(s)**
- HCR 458 - Alternative Energy Sources **2.0 Credit(s)**
- MFG 145 - Light Machining for Maintenance Trades **4.0 Credit(s)**
- NET 790 - PC Support I **3.0 Credit(s)**
- SER 195 - Advanced Sustainable Energy II **3.0 Credit(s)**
- WTT 143 - Mechanical Power Transmission **3.0 Credit(s)**

## Electronic Technology Diploma

Electronic Technology program of study prepares students to be employed as technicians in the fields of electronic maintenance, installation, and repair. Students learn installation and maintenance of complex industrial processes and related electronic, controller, and computer devices. Graduates of this program are awarded a diploma. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ELT 215 - Motors and Controls **2.0 Credit(s)**
- ELT 196 - Circuit Analysis I **5.0 Credit(s)**
- IND 109 - Equipment Safety and Operation **3.0 Credit(s)**
- IND 197 - Industrial Engineering Technology Orientation **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

#### Second Semester

- ELT 250 - Programmable Logic Controllers **3.0 Credit(s)**
- ELT 251 - Programmable Logic Controllers Lab **2.0 Credit(s)**
- ELT 201 - Circuit Analysis II **5.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- NET 790 - PC Support I **3.0 Credit(s)**

Semester Total: 16.0 Credits

Total Semester Hours Required: 32.0

Notes:

<sup>1</sup> May substitute with MAT 102 or higher.

## Engineering Transfer Major, A.S.

Engineering Transfer Major program of study prepares students to transfer to a baccalaureate degree program in engineering. This program provides a varying number of transfer credits depending upon the type of engineering and transfer institution requirements. Graduates of this program are awarded an Associate of Science (A.S.) degree.

### Recommended Course Sequence

#### First Semester

- MAT 211 - Calculus I **5.0 Credit(s)**<sup>1</sup>
- ENG 105 - Composition I **3.0 Credit(s)**
- CHM 166 - General Chemistry I **5.0 Credit(s)**<sup>1</sup>
- EGR 100 - Engineering Orientation **1.0 Credit(s)**<sup>1</sup>
- EGR 160 - Engineering I **3.0 Credit(s)**<sup>1</sup>

Semester Total: 17.0 Credits

#### Second Semester

- MAT 217 - Calculus II **5.0 Credit(s)**<sup>1</sup>
- ENG 106 - Composition II **3.0 Credit(s)**
- PHY 210 - Classical Physics I **4.0 Credit(s)**<sup>1</sup>
- PHY 211 - Classical Physics I Lab **1.0 Credit(s)**<sup>1</sup>
- EGR 165 - Engineering II **3.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

#### Third Semester

- MAT 220 - Calculus III **5.0 Credit(s)**
- PHY 220 - Classical Physics II **4.0 Credit(s)**
- PHY 221 - Classical Physics II Lab **1.0 Credit(s)**
- Social Science/Humanities Electives **6.0 Credit(s)**<sup>2</sup>

Semester Total: 16.0 Credits

#### Fourth Semester

- MAT 227 - Elementary Differential Equations with Laplace **4.0 Credit(s)**<sup>1</sup>
- SPC 112 - Public Speaking **3.0 Credit(s)**
- CHM 176 - General Chemistry II **5.0 Credit(s)**
- Social Science/Humanities Elective **3.0 Credit(s)**<sup>2</sup>

Semester Total: 15.0 Credits

Total Semester Hours Required: 64.0

#### Notes:

One elective must also satisfy the diversity requirement.

<sup>1</sup> Required courses for the program.

<sup>2</sup> Electives should be chosen to match requirements of transfer institutions.

## English Transfer Major, A.A.

English Transfer Major program of study prepares students to transfer to four-year colleges and universities to complete undergraduate majors in Literature and Communication Arts or pursue related fields in education. Students study British literature, fiction, poetry, and drama. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

### Recommended Course Sequence

#### First Semester

- LIT 101 - Introduction to Literature **3.0 Credit(s)**
- ENG 105 - Composition I **3.0 Credit(s)**
- HUM 122 - American Film **3.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**
- MAT 157 - Statistics **4.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- LIT 134 - Multicultural Literature **3.0 Credit(s)**
- ENG 106 - Composition II **3.0 Credit(s)**
- SPC 112 - Public Speaking **3.0 Credit(s)**
- PSY 121 - Developmental Psychology **3.0 Credit(s)**
- PHI 101 - Introduction to Philosophy **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- LIT 140 - British Literature I **3.0 Credit(s)**
- DRA 101 - Introduction to Theatre **3.0 Credit(s)**
- HIS 151 - U.S. History to 1877 **3.0 Credit(s)**
- ENV 111 - Environmental Science **4.0 Credit(s)**
- ART 101 - Art Appreciation **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Fourth Semester

- LIT 141 - British Literature II **3.0 Credit(s)**
- LIT 160 - Short Story/Novel **3.0 Credit(s)**
- SPC 120 - Intercultural Communications **3.0 Credit(s)**
- HIS 152 - U.S. History Since 1877 **3.0 Credit(s)**
- WBL 100 - Exploring Careers **1.0 Credit(s)**

Semester Total: 13.0 Credits

Total Semester Hours Required 60.0

## Exercise Science Transfer Major, A.S.

Exercise Science Transfer Major program of study prepares students to transfer to a four-year institution for further education in professional health degrees or other wellness-related occupations. Students gain a foundation in human biology, anatomy and physiology, nutrition, and exercise programming. Students in this program gain the skills to sit for a personal training certification exam. Graduates of this program are awarded an Associate of Science (A.S.) degree.

### Recommended Course Sequence

#### First Semester

- PEH 142 - First Aid **3.0 Credit(s)**
- ENG 105 - Composition I **3.0 Credit(s)**
- PEH 102 - Health **3.0 Credit(s)**
- PSY 111 - Introduction to Psychology **3.0 Credit(s)**
- MAT 157 - Statistics **4.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

#### Second Semester

- BIO 151 - Nutrition **3.0 Credit(s)**<sup>1</sup>
- BIO 157 - Human Biology **4.0 Credit(s)**<sup>1</sup>
- ENG 106 - Composition II **3.0 Credit(s)**
- PSY 210 - Sport and Exercise Psychology **3.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- PEH 170 - Principles of Weight Training **3.0 Credit(s)**
- PEC 230 - Introduction to Sports Medicine **3.0 Credit(s)**
- BIO 168 - Human Anatomy and Physiology I **4.0 Credit(s)**<sup>1</sup>
- SPC 112 - Public Speaking **3.0 Credit(s)**

Semester Total: 13.0 Credits

#### Fourth Semester

- PET 230 - Care and Prevention of Athletic Injuries **3.0 Credit(s)**
- BIO 173 - Human Anatomy and Physiology II **4.0 Credit(s)**<sup>1</sup>
- HSC 272 - Certified Personal Trainer **3.0 Credit(s)**
- SPC 120 - Intercultural Communications **3.0 Credit(s)**
- PHI 105 - Introduction to Ethics **3.0 Credit(s)**

Semester Total: 16.0 Credits

Total Semester Hours Required: 61.0

Notes:

<sup>1</sup> Required courses for the program

## Fine Arts Transfer Major, A.A.

Fine Arts Transfer Major program of study prepares students to transfer to four-year institution and/or begin a professional art practice. Students learn to communicate ideas effectively through a variety of visual media. The program exposes students to the technical, practical, and conceptual aspects of making art. Students prepare a portfolio of finished artworks for entry into a transfer program. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

### Recommended Course Sequence

#### First Semester

- ART 133 - Drawing **3.0 Credit(s)** 1
- ART 120 - 2-D Design **3.0 Credit(s)**<sup>1</sup>
- ART 125 - Digital Media **3.0 Credit(s)**<sup>1</sup>
- ENG 105 - Composition I **3.0 Credit(s)**
- MAT 157 - Statistics **4.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- ART 134 - Drawing II **3.0 Credit(s)** 1
- ART 123 - 3-D Design **3.0 Credit(s)**<sup>1</sup>
- ART 143 - Painting **3.0 Credit(s)**<sup>1</sup>
- ENG 106 - Composition II **3.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- ART 151 - Design I **3.0 Credit(s)**<sup>1</sup>
- ART 184 - Photography **3.0 Credit(s)**<sup>1</sup>
- ART 203 - Art History I **3.0 Credit(s)**
- ENV 111 - Environmental Science **4.0 Credit(s)**
- PSY 121 - Developmental Psychology **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Fourth Semester

- ART 204 - Art History II **3.0 Credit(s)**
- ART 196 - Studio Practices I **3.0 Credit(s)**
- HIS 111 - Western Civilization: Early Modern to Present **3.0 Credit(s)**
- SPC 112 - Public Speaking **3.0 Credit(s)**
- General Elective **1.0 Credit(s)**

Semester Total: 13.0 Credits

Total Semester Hours Required: 60.0

Notes:

One elective must also satisfy the diversity requirement.

<sup>1</sup>Required courses for the program

## General Studies, A.A.

General Studies program of study is designed for students who plan to transfer to a Bachelor of Arts degree program at a four-year institution. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- MAT 157 - Statistics **4.0 Credit(s)**
- SDV 108 - The College Experience **1.0 Credit(s)**
- WBL 100 - Exploring Careers **1.0 Credit(s)**
- Social Science Elective **3.0 Credit(s)**
- Humanities Elective **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Second Semester

- ENG 106 - Composition II **3.0 Credit(s)**
- Distributed Requirement **6.0 Credit(s)**
- Social Science Elective **3.0 Credit(s)**
- Humanities Elective **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- SPC 112 - Public Speaking **3.0 Credit(s)**  
or
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**
- Lab Science Requirement **4.0 Credit(s)**
- Social Science Elective **3.0 Credit(s)**
- General Electives **6.0 Credit(s)**

Semester Total: 16.0 Credits

#### Fourth Semester

- Humanities Elective **3.0 Credit(s)**
- General Electives **9.0 Credit(s)**
- WBL 110 - Employability Skills **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 61.0

#### Notes:

One elective must also satisfy the diversity requirement.

<sup>1</sup> Required courses for the program

To ensure as seamless a transition to a four-year institution as possible, students are encouraged to check with the transfer institution when selecting courses.

## General Studies, A.G.S.

The General Studies A.G.S. program of study is designed for students who are exploring career and/or educational options. It may not fulfill requirements for transfer to a four-year institution. Graduates of this program are awarded an Associate of General Studies degree.

### Recommended Course Sequence

#### First Semester

- A.G.S. Communications Requirement (ENG 105, ENG 106, ENG 110, SPC 112, and SPC 122) **3.0 Credit(s)**
- Social Science Elective **3.0 Credit(s)**
- MAT 157 - Statistics **4.0 Credit(s)**<sup>2</sup>
- General Electives **6.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- A.G.S. Communications Requirement (ENG 105, ENG 106, ENG 110, SPC 112, and SPC 122) **3.0 Credit(s)**
- Social Science Elective **3.0 Credit(s)**
- Lab Science Requirement **4.0 Credit(s)**
- Humanities Elective **3.0 Credit(s)**
- General Elective **2.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- A.G.S. Communications Requirement (ENG 105, ENG 106, ENG 110, SPC 112, and SPC 122) **3.0 Credit(s)**
- Social Science Elective **3.0 Credit(s)**
- Humanities Elective **3.0 Credit(s)**
- General Electives **6.0 Credit(s)**

Semester Total: 15.0 Credits

#### Fourth Semester

- General Elective **11.0 Credit(s)**
- Distributed Requirement **3.0 Credit(s)**

Semester Total: 14.0 Credits

Total Semester Hours Required: 60.0

#### Notes:

One elective must also satisfy the diversity requirement.

<sup>2</sup> May substitute MAT 102 or higher

## General Studies, A.S.

General Studies program of study is designed for students who plan to transfer to a Bachelor of Science degree program at a four-year institution. Graduates of this program are awarded an Associate of Science (A.S.) degree.

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- MAT 121 - College Algebra **4.0 Credit(s)**
- WBL 110 - Employability Skills **3.0 Credit(s)**
- Lab Science Requirement **4.0 Credit(s)**
- Social Science/Humanities Elective **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Second Semester

- ENG 106 - Composition II **3.0 Credit(s)**
- Mathematics/Science Elective **6.0 Credit(s)**
- Social Science/Humanities Elective **3.0 Credit(s)**
- General Elective **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- SPC 112 - Public Speaking **3.0 Credit(s)**  
or
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**
- Mathematics/Science Elective **3.0 Credit(s)**
- Social Science/Humanities Elective **3.0 Credit(s)**
- General Electives **6.0 Credit(s)**

Semester Total: 15.0 Credits

#### Fourth Semester

- Mathematics/Science Elective **3.0 Credit(s)**
- Distributed Requirement **3.0 Credit(s)**
- General Electives **6.0 Credit(s)**
- WBL 100 - Exploring Careers **1.0 Credit(s)**

Semester Total: 13.0 Credits

Total Semester Hours Required: 60.0

#### Notes:

One elective must also satisfy the diversity requirement.

<sup>1</sup> Required courses for the program

To ensure as seamless a transition to a four-year institution as possible, students are encouraged to check with the transfer institution when selecting courses.

## Human Services: Generalist Transfer Major, A.A.

Human Services: Generalist Transfer Major program of study prepares students for careers and further study in the human services field. Upon graduation, students are prepared to begin working as a human services professional in such areas as: domestic violence, crisis intervention, child welfare, and with the elderly. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- PSY 111 - Introduction to Psychology **3.0 Credit(s)**<sup>1</sup>
- HSV 259 - Introduction to Chemical Dependency **3.0 Credit(s)**<sup>1</sup>
- HSV 109 - Introduction to Human Services **3.0 Credit(s)**<sup>1</sup>
- SOC 120 - Marriage and Family **3.0 Credit(s)**<sup>1</sup>

Semester Total: 15.0 Credits

#### Second Semester

- ENG 106 - Composition II **3.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**<sup>1</sup>
- HSV 225 - Counseling Techniques **3.0 Credit(s)**<sup>1</sup>
- HSV 132 - Fundamentals of Case Management **3.0 Credit(s)**<sup>1</sup>
- SPC 112 - Public Speaking **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- BIO 157 - Human Biology **4.0 Credit(s)**
- PSY 121 - Developmental Psychology **3.0 Credit(s)**<sup>1</sup>
- HUM 287 - Leadership Development Studies **3.0 Credit(s)**<sup>1</sup>
- HSV 115 - Agency and Community Resources **3.0 Credit(s)**
- SOC 261 - Human Sexuality **3.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

#### Fourth Semester

- HSV 180 - Ethics for Human Service Professionals **1.0 Credit(s)**<sup>1</sup>
- HSV 802 - Internship **2.0 - 6.0 Credit(s)**<sup>1</sup>
- HSV 190 - Youth Care Issues **3.0 Credit(s)**
- MAT 157 - Statistics **4.0 Credit(s)**<sup>1</sup>
- PHI 101 - Introduction to Philosophy **3.0 Credit(s)**
- REL 101 - Survey of World Religions **3.0 Credit(s)**

Semester Total: 16.0 Credits

Total Semester Hours Required: 62.0

#### Notes:

<sup>1</sup> Required courses for the program.

## Human Services: Social Work Transfer, A.A.

Human Services: Social Work Transfer Major program of study is designed for students intending to transfer to four-year institutions with social work programs accredited by the Council on Social Work Education. The Human Services Social Work curriculum stresses general education coursework. The program listed below is a recommended curriculum. However, students are encouraged to see program advisor for specific course recommendations. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- PSY 111 - Introduction to Psychology **3.0 Credit(s)**<sup>1</sup>
- ECN 120 - Principles of Macroeconomics **3.0 Credit(s)**<sup>1</sup>
- HSV 109 - Introduction to Human Services **3.0 Credit(s)**<sup>1</sup>
- PHI 101 - Introduction to Philosophy **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Second Semester

- ENG 106 - Composition II **3.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**<sup>1</sup>
- HSV 140 - Social Work and Social Welfare **3.0 Credit(s)**<sup>1</sup>
- HSV 225 - Counseling Techniques **3.0 Credit(s)**<sup>1</sup>
- HSV 132 - Fundamentals of Case Management **3.0 Credit(s)**<sup>1</sup>

Semester Total: 15.0 Credits

#### Summer

- Philosophy Elective **3.0 Credit(s)**

Semester Total: 3.0 Credits

#### Third Semester

- SPC 112 - Public Speaking **3.0 Credit(s)**
- PSY 121 - Developmental Psychology **3.0 Credit(s)**
- BIO 157 - Human Biology **4.0 Credit(s)**<sup>1</sup>
- HUM 287 - Leadership Development Studies **3.0 Credit(s)**<sup>1</sup>
- HSV 115 - Agency and Community Resources **3.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

#### Fourth Semester

- POL 111 - American National Government **3.0 Credit(s)**<sup>1</sup>
- REL 101 - Survey of World Religions **3.0 Credit(s)**
- MAT 157 - Statistics **4.0 Credit(s)**<sup>1</sup>
- HSV 228 - Group Counseling Techniques **3.0 Credit(s)**<sup>1</sup>
- HSV 180 - Ethics for Human Service Professionals **1.0 Credit(s)**
- HSV 802 - Internship **2.0 - 6.0 Credit(s)**<sup>1</sup> (2.0 Credits Required)

Semester Total: 16.0 Credits

Total Semester Hours Required: 64.0

#### Notes:

One elective must also satisfy the diversity requirement.

<sup>1</sup> Required courses for the program

Students should meet with the program chair to discuss transfer requirements.

#### <sup>2</sup> Recommended Humanities Electives:

- FLS 141 - Elementary Spanish I **4.0 Credit(s)**
- LIT 134 - Multicultural Literature **3.0 Credit(s)**
- REL 101 - Survey of World Religions **3.0 Credit(s)**

## HVAC/R Maintenance Certificate

HVAC/R Maintenance program of study provides the basic skills necessary to gain meaningful employment as an entry-level Heating, Ventilation & Air Conditioning (HVAC) apprentice or assistant. The certificate program is designed to train students to assist in becoming HVAC technicians. Students will learn to troubleshoot and service HVAC/R systems. The certificate does not qualify graduates for the State of Iowa's specialty license. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- HCR 121 - Forced Air Heating Systems **2.0 Credit(s)**
- IND 109 - Equipment Safety and Operation **3.0 Credit(s)**
- HCR 201 - Applied Practices I: Repair and Service **4.0 Credit(s)**
- HCR 188 - Electricity for HVAC/R **4.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**

Semester Total: 16.0 Credits

Total Semester Hours Required: 16.0

## HVAC/R Technology Diploma

HVAC/R Technology program of study provides all of the skills necessary to gain meaningful employment as an entry-level Heating, Ventilation & Air Conditioning (HVAC) technician. The diploma program is designed to train students to be HVAC technicians in a real-world, hands-on environment. Students will learn to troubleshoot, install, and maintain HVAC/R systems. This program is designed to meet the related technical instruction for some DOE apprenticeship programs. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- HCR 121 - Forced Air Heating Systems **2.0 Credit(s)**
- IND 109 - Equipment Safety and Operation **3.0 Credit(s)**
- HCR 201 - Applied Practices I: Repair and Service **4.0 Credit(s)**
- HCR 188 - Electricity for HVAC/R **4.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- HCR 208 - Boilers and Hydronic Systems **4.0 Credit(s)**
- HCR 301 - Applied Practices II: Advanced Repair and Service **3.0 Credit(s)**
- ELT 215 - Motors and Controls **2.0 Credit(s)**
- HCR 205 - Air Conditioning Principles **3.0 Credit(s)**
- HCR 458 - Alternative Energy Sources **2.0 Credit(s)**

Semester Total: 14.0 Credits

#### Summer

- HCR 402 - HVAC/R Internship **4.0 Credit(s)**  
or
- HCR 401 - HVAC/R Capstone **4.0 Credit(s)**
- HCR 448 - Applied Practices III: Installation **3.0 Credit(s)**
- HCR 348 - Soldering, Piping, and Fitting **3.0 Credit(s)**

Semester Total: 10.0 Credits

Total Semester Hours Required: 40.0

## Industrial Engineering Technology, A.A.S.

Industrial Engineering Technology program of study is designed to provide the knowledge, skills, and abilities to successfully respond to a broad range of work requirements and duties within industrial, manufacturing, processing, and building maintenance environments. Students learn topics including welding, electrical, hydraulics, pneumatics, print reading, instrumentation, applied mathematics, and computer operation. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ELT 215 - Motors and Controls **2.0 Credit(s)**
- ELE 231 - Basic Electrical Principles **5.0 Credit(s)**
- IND 109 - Equipment Safety and Operation **3.0 Credit(s)**
- IND 197 - Industrial Engineering Technology Orientation **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

#### Second Semester

- ELT 250 - Programmable Logic Controllers **3.0 Credit(s)**
- ELT 251 - Programmable Logic Controllers Lab **2.0 Credit(s)**
- MFG 145 - Light Machining for Maintenance Trades **4.0 Credit(s)**
- WTT 143 - Mechanical Power Transmission **3.0 Credit(s)**
- ELE 227 - Electrical Blueprint Reading **2.0 Credit(s)**
- WEL 149 - Fundamentals of Shielded Metal Arc Welding **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Summer

- IND 930 - Industrial Internship **4.0 Credit(s)**

Semester Total: 4.0 Credits

#### Third Semester

- IND 187 - Predictive Maintenance **2.0 Credit(s)**
- IND 191 - Preventative Maintenance **2.0 Credit(s)**
- CAD 139 - Introduction to CAD/CAM **3.0 Credit(s)**
- ATR 133 - Fluid Power Systems **2.0 Credit(s)**
- ELT 252 - Advanced Programmable Logic Controllers **3.0 Credit(s)**
- ELT 253 - Advanced Programmable Logic Controllers Lab **2.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Fourth Semester

- ATR 113 - Industrial Robotics **3.0 Credit(s)**
- ATR 114 - Industrial Robotics Lab **2.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**

Semester Total: 14.0 Credits

Total Semester Hours Required 68.0

Notes:

<sup>1</sup> May substitute with MAT 102 or higher.

## Industrial Maintenance Technician Diploma

Industrial Maintenance Technician program of study provides basic skills in welding, pneumatics, and hydraulics, blueprint reading, lean manufacturing, and predictive, preventative maintenance. Students learn to install, maintain, and troubleshoot the equipment utilized by industry. Graduates of this program are awarded a diploma. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ELT 215 - Motors and Controls **2.0 Credit(s)**
- ELE 231 - Basic Electrical Principles **5.0 Credit(s)**
- IND 109 - Equipment Safety and Operation **3.0 Credit(s)**
- IND 197 - Industrial Engineering Technology Orientation **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

#### Second Semester

- ELT 250 - Programmable Logic Controllers **3.0 Credit(s)**
- ELT 251 - Programmable Logic Controllers Lab **2.0 Credit(s)**
- MFG 145 - Light Machining for Maintenance Trades **4.0 Credit(s)**
- WTT 143 - Mechanical Power Transmission **3.0 Credit(s)**
- ELE 227 - Electrical Blueprint Reading **2.0 Credit(s)**
- WEL 149 - Fundamentals of Shielded Metal Arc Welding **3.0 Credit(s)**

Semester Total: 17.0 Credits

Total Semester Hours Required: 33.0

Notes:

<sup>1</sup> May substitute with MAT 102 or higher.

## Industrial Technology Certificate

Industrial Technology program of study prepares students to be employed as technicians in the fields of electrical maintenance and production. Students learn development, installation, and maintenance of complex industrial processes. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ELE 231 - Basic Electrical Principles **5.0 Credit(s)**
- ELT 215 - Motors and Controls **2.0 Credit(s)**
- IND 109 - Equipment Safety and Operation **3.0 Credit(s)**
- IND 197 - Industrial Engineering Technology Orientation **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

Total Semester Hours Required: 16.0

Notes:

<sup>1</sup> May substitute with MAT 102 or higher.

## Industrial Technology: Individualized Technical Certificate

Industrial Technology Individualized Technical program of study is designed for currently employed students or students who have a specific career goal. Students are allowed an opportunity to adapt an existing college program of study to individual needs and career goals. The intent of this option is to craft a program of study that meets a specific technical career goal. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>
- Technical Area of Concentration **13.0 Credit(s)**

Semester Total: 16.0 Credits

Total Semester Hours Required: 16.0

Notes:

The specific individualized program of study will be designed with the guidance of an Industrial Technology instructor, and will be approved by the appropriate academic dean. It is required that a coherent program of study consisting of technical related courses found in Industrial Technology, as well as related general education courses, be developed and followed to degree completion. Courses in the advanced manufacturing, trades, energy and transportation areas can be utilized.

<sup>1</sup>May substitute with MAT 102 or higher

## Industrial Technology: Individualized Technical Diploma

Industrial Technology Individualized Technical program of study is designed for currently employed students or students who have a specific career goal. Students are allowed an opportunity to adapt an existing college program of study to individual needs and career goals. The intent of this option is to craft a program of study that meets a specific technical career goal. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>
- Technical Area of Concentration **13.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- Technical Area of Concentration **12.0 Credit(s)**

Semester Total: 12.0 Credits

Total Semester Hours Required: 28.0

Notes:

The specific individualized program of study will be designed with the guidance of an Industrial Technology instructor, and will be approved by the appropriate academic dean. It is required that a coherent program of study consisting of technical related courses found in Industrial Technology, as well as related general education courses, be developed and followed to degree completion. Courses in the advanced manufacturing, trades, energy and transportation areas can be utilized.

<sup>1</sup>May substitute with MAT 102 or higher.

## Industrial Technology: Individualized Technical Program, A.A.S.

Industrial Technology Individualized Technical program of study is designed for currently employed students or students who have a specific career goal. Students are allowed an opportunity to adapt an existing college program of study to individual needs and career goals. The intent of this option is to craft a program of study that meets a specific technical career goal. Graduates of this program are awarded an Associate of Applied Science (A.A.S) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>
- Technical Area of Concentration **13.0 Credit(s)**

Semester Total 16.0 Credits

#### Second Semester

- ENG 110 - Writing For The Workplace **3.0 Credit(s)**<sup>2</sup>
- Technical Area of Concentration **12.0 Credit(s)**

Semester Total 15.0 Credits

#### Third Semester

- SPC 122 - Interpersonal Communication **3.0 Credit(s)**
- Technical Area of Concentration **12.0 Credit(s)**

Semester Total 15.0 Credits

#### Fourth Semester

- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**
- Technical Area of Concentration **9.0 Credit(s)**

Semester Total 15.0 Credits

Total Semester Hours Required: 61.0

#### Notes:

The specific individualized program of study will be designed with the guidance of an Industrial Technology instructor, and will be approved by the appropriate academic dean. It is required that a coherent program of study consisting of technical related courses found in Industrial Technology, as well as related general education courses, be developed and followed to degree completion. Courses in the advanced manufacturing, trades, energy and transportation areas can be utilized.

<sup>1</sup>May substitute with MAT 102 or higher

<sup>2</sup>May substitute with ENG 105 or higher

## Laser Systems Diploma

Laser Systems program is the study of lasers and optics in the manufacturing industry. Students gain working knowledge of skills of electronics, with basic knowledge and skills in lasers and optics. This program prepares students to enter a technical level career in electronics with a basic understanding of photonics. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ELT 215 - Motors and Controls **2.0 Credit(s)**
- ELT 196 - Circuit Analysis I **5.0 Credit(s)**
- IND 109 - Equipment Safety and Operation **3.0 Credit(s)**
- IND 197 - Industrial Engineering Technology Orientation **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

#### Second Semester

- LEO 360 - Lasers in Manufacturing **3.0 Credit(s)**
- LEO 230 - Fundamentals of Light and Lasers **5.0 Credit(s)**
- NET 790 - PC Support I **3.0 Credit(s)**  
or
- ELT 250 - Programmable Logic Controllers **3.0 Credit(s)**  
and
- ELT 251 - Programmable Logic Controllers Lab **2.0 Credit(s)**
- ELT 201 - Circuit Analysis II **5.0 Credit(s)**

Semester Total: 16.0-18.0 Credits

Total Semester Hours Required 32.0

#### Notes:

<sup>1</sup> May substitute with MAT 102 or higher.

## Laser Systems Technician, A.A.S.

Laser Systems Technician program is the study of lasers and optics. Students will gain working knowledge and skills of electronic and electromechanical devices/systems, combined with specialty knowledge and skills in photonics. Through lab experiences students will be able to efficiently and effectively repair, operate, maintain, and calibrate photonic subsystems, and then integrate these subsystems into full systems. This program prepares students for a technical level career in lasers in four primary electronic fields: computers, telecommunications, biomedical electronics, and industrial electronics. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ELT 215 - Motors and Controls **2.0 Credit(s)**
- IND 109 - Equipment Safety and Operation **3.0 Credit(s)**
- IND 197 - Industrial Engineering Technology Orientation **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>
- ELT 196 - Circuit Analysis I **5.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- LEO 360 - Lasers in Manufacturing **3.0 Credit(s)**
- LEO 230 - Fundamentals of Light and Lasers **5.0 Credit(s)**
- NET 790 - PC Support I **3.0 Credit(s)**
- ELT 201 - Circuit Analysis II **5.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- LEO 340 - Laser Systems and Applications I **5.0 Credit(s)**
- ELT 523 - Electronic Devices **4.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Fourth Semester

- ELT 432 - Telecommunications **4.0 Credit(s)**
- ELT 433 - Telecommunications Lab **1.0 Credit(s)**
- ATR 113 - Industrial Robotics **3.0 Credit(s)**
- ATR 114 - Industrial Robotics Lab **2.0 Credit(s)**
- LEO 450 - Laser Systems and Applications II **5.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**

Semester Total: 18.0 Credits

Total Semester Hours Required 65.0

Notes:

<sup>1</sup> May substitute with MAT 102 or higher.

## Management & Human Resources Certificate

Management and Human Resources program of study is designed to develop entry-level supervisory, managerial, and personnel resource skills. Students develop a basic foundation in applicable business, supervision, and fundamental management skills. Human relations, accounting, marketing, teams, quality fundamentals, problem solving, electronic commerce, communications, and specialized areas of employee training and evaluation, compensation, and benefits are intended to provide a background to enhance an individual's success as a supervisor or personnel officer in business and industry. This certificate may be used as a foundation for a Management & Human Resources Diploma. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MGT 101 - Principles of Management **3.0 Credit(s)**
- MGT 130 - Principles of Supervision **3.0 Credit(s)**
- MGT 138 - Employee Evaluation and Training Techniques **3.0 Credit(s)**
- MGT 175 - Introduction to Law for Managers and Supervisors **3.0 Credit(s)**
- MGT 180 - Management and Labor Relations **3.0 Credit(s)**
- MGT 170 - Human Resource Management **3.0 Credit(s)**

Semester Total: 18.0 Credits

Total Semester Hours Required 18.0

## Management & Human Resources Diploma

Management and Human Resources program of study is designed to develop entry-level supervisory, managerial, and personnel resource skills. Students develop a basic foundation in applicable business, supervision, and fundamental management skills. Human relations, accounting, marketing, teams, quality fundamentals, problem solving, electronic commerce, communications, and specialized areas of employee training are intended to provide a background to enhance an individual's success as a supervisor or personnel officer in business and industry. This diploma may be used as a foundation for a Management & Human Resources Associate of Applied Science degree program. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MGT 101 - Principles of Management **3.0 Credit(s)**
- MGT 130 - Principles of Supervision **3.0 Credit(s)**
- MGT 138 - Employee Evaluation and Training Techniques **3.0 Credit(s)**
- MGT 175 - Introduction to Law for Managers and Supervisors **3.0 Credit(s)**
- MGT 180 - Management and Labor Relations **3.0 Credit(s)**
- MGT 170 - Human Resource Management **3.0 Credit(s)**

Semester Total: 18.0 Credits

#### Second Semester

- MGT 190 - Employee Compensation and Benefits Management **3.0 Credit(s)**
- ACC 111 - Introduction to Accounting **3.0 Credit(s)**
- MKT 110 - Principles of Marketing **3.0 Credit(s)**
- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**<sup>1</sup>
- CSC 116 - Information Computing **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 33.0

Notes:

<sup>1</sup> May substitute with MAT 102 or higher.

## Management & Human Resources, A.A.S.

Management and Human Resources program of study is designed to develop entry-level supervisory, managerial, and personnel resource skills. Students develop a basic foundation in applicable business, supervision and fundamental management skills. Human relations, accounting, marketing, teams and quality fundamentals, problem solving, electronic commerce, communications, and specialized areas of employee training and evaluation, compensation and benefits, as well as labor/management relations are intended to provide a background to enhance an individual's success as a supervisor or personnel officer in business and industry. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MGT 101 - Principles of Management **3.0 Credit(s)**
- MGT 130 - Principles of Supervision **3.0 Credit(s)**
- MGT 138 - Employee Evaluation and Training Techniques **3.0 Credit(s)**
- MGT 175 - Introduction to Law for Managers and Supervisors **3.0 Credit(s)**
- MGT 180 - Management and Labor Relations **3.0 Credit(s)**
- MGT 170 - Human Resource Management **3.0 Credit(s)**

Semester Total: 18.0 Credits

#### Second Semester

- MGT 190 - Employee Compensation and Benefits Management **3.0 Credit(s)**
- ACC 111 - Introduction to Accounting **3.0 Credit(s)**
- MKT 110 - Principles of Marketing **3.0 Credit(s)**
- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**<sup>2</sup>
- CSC 116 - Information Computing **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- BUS 102 - Introduction to Business **3.0 Credit(s)**
- PSY 111 - Introduction to Psychology **3.0 Credit(s)**
- ENG 105 - Composition I **3.0 Credit(s)**
- BUS 121 - Business Communications **3.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Fourth Semester

- BUS 154 - E-business **3.0 Credit(s)**
- ACC 311 - Computer Accounting **3.0 Credit(s)**
- MGT 165 - Principles of Quality **3.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- MGT 932 - Internship **1.0 - 8.0 Credit(s)**<sup>3</sup>

Semester Total: 18.0 Credits

Total Semester Hours Required 66.0

Notes:

<sup>2</sup> May substitute with MAT 102 or higher.

<sup>3</sup> A minimum of three credits of internship are required.

## Marketing, A.A.S.

Marketing program of study provides students with an opportunity to develop a technical understanding of marketing/retail principles and procedures, merchandise selection/buying/distribution, entrepreneurship, and promotional concepts. Students further develop management potential through internship opportunities. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MKT 110 - Principles of Marketing **3.0 Credit(s)**
- MKT 140 - Principles of Selling **3.0 Credit(s)**
- MKT 163 - Merchandising **3.0 Credit(s)**
- BUS 102 - Introduction to Business **3.0 Credit(s)**
- ENG 105 - Composition I **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Second Semester

- MKT 150 - Principles of Advertising **3.0 Credit(s)**
- MGT 170 - Human Resource Management **3.0 Credit(s)**
- BUS 130 - Introduction to Entrepreneurship **3.0 Credit(s)**
- SPC 112 - Public Speaking **3.0 Credit(s)**
- ART 125 - Digital Media **3.0 Credit(s)**
- WBL 100 - Exploring Careers **1.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- MKT 184 - Customer Service **3.0 Credit(s)**
- BUS 154 - E-business **3.0 Credit(s)**
- MKT 165 - Retail Management **3.0 Credit(s)**
- MMS 202 - Social Media Marketing **3.0 Credit(s)**
- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Fourth Semester

- MKT 190 - International Marketing **3.0 Credit(s)**
- BUS 121 - Business Communications **3.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- MKT 185 - Marketing Internship I **2.0 Credit(s)**
- PHI 211 - Ethics in the Media **3.0 Credit(s)**

Semester Total: 14.0 Credits

Total Semester Hours Required 60.0

## Mathematics Transfer Major, A.S.

Mathematics Transfer Major program of study prepares students to transfer to a baccalaureate program in mathematics. Students also have the mathematics prerequisite needed for science classes at the junior and senior level. Graduates of this program are awarded an Associate of Science (A.S.) degree.

### Recommended Course Sequence

#### First Semester

- MAT 211 - Calculus I **5.0 Credit(s)**<sup>1</sup>
- ENG 105 - Composition I **3.0 Credit(s)**
- CHM 166 - General Chemistry I **5.0 Credit(s)**<sup>1</sup>
- PHI 105 - Introduction to Ethics **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- MAT 217 - Calculus II **5.0 Credit(s)**<sup>1</sup>
- ENG 106 - Composition II **3.0 Credit(s)**
- PSY 111 - Introduction to Psychology **3.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- GEO 121 - World Regional Geography **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Third Semester

- MAT 220 - Calculus III **5.0 Credit(s)**<sup>1</sup>
- SPC 112 - Public Speaking **3.0 Credit(s)**
- REL 101 - Survey of World Religions **3.0 Credit(s)**
- HIS 152 - U.S. History Since 1877 **3.0 Credit(s)**

Semester Total: 14.0 Credits

#### Fourth Semester

- MAT 227 - Elementary Differential Equations with Laplace **4.0 Credit(s)**<sup>1</sup>
- CSC 116 - Information Computing **3.0 Credit(s)**
- MAT 157 - Statistics **4.0 Credit(s)**<sup>1</sup>
- SPC 120 - Intercultural Communications **3.0 Credit(s)**

Semester Total: 14.0 Credits

Total Semester Hours Required: 61.0

#### Notes:

One elective must also satisfy the diversity requirement.

<sup>1</sup> Required courses for the program

## Media Studies: Digital Communication Arts, A.A.S.

Media Studies: Digital Communication Arts, A.A.S. program of study provides students with a background in various aspects of digital communication. Students learn content creation, analytics, and management of media for business. Students shoot video, record audio, design content, and manage social media platforms for audience engagement and community impact. The program prepares students for careers such as social media marketer, videographer, audio/video producer, content creator, web designer and graphic designer. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

### Recommended Course Sequence

#### First Semester

- ART 125 - Digital Media **3.0 Credit(s)**
- ENG 105 - Composition I **3.0 Credit(s)**
- MMS 105 - Audio Production **3.0 Credit(s)**
- MMS 202 - Social Media Marketing **3.0 Credit(s)**
- MMS 204 - New Media Production **3.0 Credit(s)**
- MMS 313 - Digital Communication Arts Practicum I **1.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- ART 126 - Digital Media II **3.0 Credit(s)**
- MMS 134 - Media Writing **3.0 Credit(s)**
- MMS 317 - Digital Content Creation **3.0 Credit(s)**
- MMS 186 - Digital Media Analytics **3.0 Credit(s)**
- MMS 314 - Digital Communication Arts Practicum II **1.0 Credit(s)**
- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- MMS 114 - Media Production II **3.0 Credit(s)**
- MMS 216 - Social Media Capstone **4.0 Credit(s)**
- MMS 311 - Podcasting **3.0 Credit(s)**
- MMS 316 - Broadcasting and Streaming Online **3.0 Credit(s)**
- WDV 121 - Web Interface Design **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Fourth Semester

- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- MMS 315 - Digital Communication Arts Practicum III **1.0 Credit(s)**
- MMS 933 - Media Studies Internship **2.0 Credit(s)**
- PHI 211 - Ethics in the Media **3.0 Credit(s)**
- MMS 312 - Photojournalism **3.0 Credit(s)**

Semester Total: 12.0 Credits

Total Semester Hours Required: 60.0 Credits

## Media Studies: Radio, A.A.S.

Media Studies: Radio program of study allows students to work with professional radio personnel to enable graduates to move directly into the radio industry. Coursework develops both on air and behind the scenes skills including announcing, production, sales, and media marketing. Students enhance classroom experience through participation in station operations at KIWR-FM, 89.7 The River. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MMS 105 - Audio Production **3.0 Credit(s)**
- MMS 123 - Electronic Media Performance **3.0 Credit(s)**
- MMS 338 - Radio Practicum I **1.0 Credit(s)**
- JOU 110 - Introduction to Mass Media **3.0 Credit(s)**
- SPC 112 - Public Speaking **3.0 Credit(s)**
- ENG 105 - Composition I **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- MMS 190 - Broadcast Promotions **3.0 Credit(s)**
- MMS 204 - New Media Production **3.0 Credit(s)**
- MMS 205 - Advanced Audio Production **3.0 Credit(s)**
- MMS 317 - Digital Content Creation **3.0 Credit(s)**
- MMS 341 - Radio Practicum II **1.0 Credit(s)**
- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- MMS 202 - Social Media Marketing **3.0 Credit(s)**
- MMS 216 - Social Media Capstone **4.0 Credit(s)**
- MMS 311 - Podcasting **3.0 Credit(s)**
- MMS 316 - Broadcasting and Streaming Online **3.0 Credit(s)**
- MMS 350 - Media Sales Practicum **1.0 Credit(s)**
- MMS 342 - Radio Practicum III **1.0 Credit(s)**

Semester Total: 15.0 Credits

#### Fourth Semester

- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- PHI 211 - Ethics in the Media **3.0 Credit(s)**
- MMS 134 - Media Writing **3.0 Credit(s)**
- MMS 933 - Media Studies Internship **2.0 Credit(s)**
- MMS 186 - Digital Media Analytics **3.0 Credit(s)**

Semester Total: 14.0 Credits

Total Semester Hours Required: 61.0

## Media Studies: Social Media Certificate

Media Studies: Social Media program of study is designed for professionals in any industry who wish to create social media content and further organization's brand. The curriculum exposes students to social media marketing strategies. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### First Semester

- MMS 186 - Digital Media Analytics **3.0 Credit(s)**
- ENG 105 - Composition I **3.0 Credit(s)**
- MMS 202 - Social Media Marketing **3.0 Credit(s)**
- MMS 204 - New Media Production **3.0 Credit(s)**
- MMS 216 - Social Media Capstone **4.0 Credit(s)**

Semester Total: 16.0 Credits

Total Semester Hours Required 16.0

## Media Studies: Sports Media Technology, A.A.S.

Media Studies: Sports Media Technology program of study prepares students to be employed as sports media specialists. The two-year program provides students the opportunity to explore and hone skills in the sports media industry. Students work to develop skills in radio, video and sports journalism. Upon completion of the program, students are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- MMS 105 - Audio Production **3.0 Credit(s)**
- MMS 113 - Introduction to Media Production **3.0 Credit(s)**
- MMS 123 - Electronic Media Performance **3.0 Credit(s)**
- MMS 306 - Sports Media Practicum I **1.0 Credit(s)**
- JOU 110 - Introduction to Mass Media **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- MMS 114 - Media Production II **3.0 Credit(s)**
- MMS 152 - Spring Sports Announcing **3.0 Credit(s)**
- MMS 204 - New Media Production **3.0 Credit(s)**
- MMS 205 - Advanced Audio Production **3.0 Credit(s)**
- MMS 307 - Sports Media Practicum II **1.0 Credit(s)**
- PHI 211 - Ethics in the Media **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**
- MMS 107 - Sports Field Production **3.0 Credit(s)**
- MMS 202 - Social Media Marketing **3.0 Credit(s)**
- MMS 231 - Advanced Video Production I **3.0 Credit(s)**
- MMS 308 - Sports Media Practicum III **1.0 Credit(s)**

Semester Total: 13.0 Credits

#### Fourth Semester

- MMS 134 - Media Writing **3.0 Credit(s)**
- MMS 309 - Sports Media Practicum IV **1.0 Credit(s)**
- MMS 312 - Photojournalism **3.0 Credit(s)**
- MMS 933 - Media Studies Internship **2.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- SPC 112 - Public Speaking **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 60.0

## Media Studies: Television/Video, A.A.S.

Media Studies: Television/Video program of study allows students to work with professional video and television personnel to develop the skills needed to move directly into industry after graduation. The program focuses on all aspects of television and video production and features extensive work in shooting, editing, and storytelling. Students enhance classroom experience through participation in station operations with Iowa Western Media. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MMS 113 - Introduction to Media Production **3.0 Credit(s)**
- MMS 123 - Electronic Media Performance **3.0 Credit(s)**
- ENG 105 - Composition I **3.0 Credit(s)**
- SPC 112 - Public Speaking **3.0 Credit(s)**
- JOU 110 - Introduction to Mass Media **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Second Semester

- MMS 114 - Media Production II **3.0 Credit(s)**
- MMS 134 - Media Writing **3.0 Credit(s)**
- MMS 204 - New Media Production **3.0 Credit(s)**
- MMS 296 - Video Practicum I **1.0 Credit(s)**
- MMS 316 - Broadcasting and Streaming Online **3.0 Credit(s)**
- PHI 211 - Ethics in the Media **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- MMS 202 - Social Media Marketing **3.0 Credit(s)**
- MMS 231 - Advanced Video Production I **3.0 Credit(s)**
- MMS 297 - Video Practicum II **1.0 Credit(s)**
- ART 125 - Digital Media **3.0 Credit(s)**
- HUM 122 - American Film **3.0 Credit(s)**
- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Fourth Semester

- MMS 190 - Broadcast Promotions **3.0 Credit(s)**
- MMS 301 - Video Practicum III **2.0 Credit(s)**
- MMS 312 - Photojournalism **3.0 Credit(s)**
- MMS 933 - Media Studies Internship **2.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**

Semester Total: 13.0 Credits

Total Semester Hours Required: 60.0

## Medical Assistant Diploma

Medical Assistant program of study serves "to prepare competent entry-level medical assistants in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains,"; preparing students to be employed as administrative and clinical assistants in a medical provider's office. The ten-month program includes practical experience of 190 unpaid practicum hours in a provider's office. Upon completion, students are eligible to take the American Association of Medical Assistants (AAMA) examination to become a Certified Medical Assistant (CMA, AAMA), and the American Medical Technologist (AMT) examination to become a Registered Medical Assistant (RMA). The Medical Assistant Program at Iowa Western Community College is accredited by the Commission on Accreditation of Allied Health Education Programs ([www.caahep.org](http://www.caahep.org)) upon the recommendation of the Medical Assistant Education Review Board (MAERB). Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### Program Prerequisites

General Education Courses that must be completed prior to first semester of Medical Assistant Diploma:

- ENG 105 - Composition I **3.0 Credit(s) OR**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**
- HSC 113 - Medical Terminology **2.0 Credit(s)**
- HSC 128 - Anatomy and Physiology for Allied Health Programs **3.0 Credit(s)**

Semester Total: 8.0 Credits

#### First Semester

- MAP 123 - Administrative Medical Office Procedures **3.0 Credit(s)**
- MAP 353 - Clinical Procedures I **4.0 Credit(s)**
- MAP 533 - Diseases and Disorders **2.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**
- Psychology Elective **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Second Semester

- MAP 215 - Medical Laboratory Techniques **4.0 Credit(s)**
- MAP 363 - Clinical Procedures II **5.0 Credit(s)**
- MAP 514 - Basics of Pharmacology **3.0 Credit(s)**
- MAP 131 - Advanced Medical Office Procedures **4.0 Credit(s)**

Semester Total: 16.0 Credits

#### Summer

- MAP 612 - Medical Assistant Externship **3.0 Credit(s)**
- MAP 601 - Medical Assistant Seminar **1.0 Credit(s)**

Semester Total: 4.0 Credits

Total Semester Hours Required 43.0

## Musical Theater, A.A.A.

The Musical Theater program of study provides students with a background in various aspects of musical theatre performance while preparing them for a career in television, film, and stage performance. Students learn theory and practice in the areas of vocal music, acting, and dance. The program prepares students for employment as actors, musicians, dancers, choreographers, directors, producers, and theatre technicians. Graduates of this program are awarded an Associate of Applied Arts (A.A.A.) degree.

Students must complete the curriculum described below:

### Recommend Course Sequence

#### First Semester

- DAN 105 - Dance I **2.0 Credit(s)**
- DRA 130 - Acting I **3.0 Credit(s)**
- MUA 400 - Applied Voice I **2.0 Credit(s)**
- MUS 134 - Concert Choir I **1.0 Credit(s)**
- DRA 180 - Theatre Lab I **1.0 Credit(s)**
- DRA 113 - History of Musical Theater **3.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Second Semester

- DAN 106 - Dance II **2.0 Credit(s)**
- DRA 132 - Acting II **3.0 Credit(s)**
- DRA 181 - Theatre Lab II **1.0 Credit(s)**
- DRA 225 - Musical Theater Performance I **3.0 Credit(s)**
- MUA 401 - Applied Voice II **2.0 Credit(s)**
- MUS 102 - Music Fundamentals **3.0 Credit(s)**
- MUS 390 - Show Choir I **1.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- DRA 162 - Technical Theatre **3.0 Credit(s)**
- DRA 226 - Musical Theater Performance II **3.0 Credit(s)**
- MAT 711 - Business and Financial Mathematics **3.0 Credit(s)**
- MUA 402 - Applied Voice III **2.0 Credit(s)**
- DAN 107 - Dance III **2.0 Credit(s)**
- DRA 280 - Theatre Lab III **1.0 Credit(s)**
- MUS 141 - Concert Choir II **1.0 Credit(s)**

Semester Total: 15.0 Credits

#### Fourth Semester

- DRA 187 - The Business of Being a Performing Artist **3.0 Credit(s)**
- DRA 227 - Musical Theater Performance III **3.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- MUA 403 - Applied Voice IV **2.0 Credit(s)**
- DAN 115 - Hip Hop and Modern Dance **2.0 Credit(s)**
- DRA 281 - Theatre Lab IV **1.0 Credit(s)**
- MUS 391 - Show Choir II **1.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required: 60.0

## Nursing: Associate Degree Nursing, A.A.S.

Nursing: Associate Degree Nursing program of study prepares students to deliver safe patient care in simple and complex situations. Learners focus on acquiring a knowledge base in basic sciences, oral and written communication, human behavior, and social sciences. These courses form a foundation for the study of the nursing care needs of persons of all ages. A combination of classroom instruction and actual supervised experiences caring for patients in a variety of health care settings is used to prepare learners to function in an entry-level staff nurse position after graduation. Upon completion of the first year of the curriculum, graduates are awarded a diploma and are qualified to write the National Council of State Board of Nursing (NCLEX-PN) examination for practical nurses. Upon completion of the second year of the curriculum, graduates are qualified to write the National Council of State Boards of Nursing (NCLEX-RN) examination for registered nurses. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

**Program Prerequisite:** Current, valid CNA Certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### Program Prerequisites

General Education Courses that must be completed prior to first semester of nursing:

- ENG 105 - Composition I **3.0 Credit(s)**
- PSY 121 - Developmental Psychology **3.0 Credit(s)**
- BIO 168 - Human Anatomy and Physiology I **4.0 Credit(s)**
- BIO 173 - Human Anatomy and Physiology II **4.0 Credit(s)**

Semester Total: 14.0 Credits

#### First Semester

- PNN 228 - Foundations of Nursing I **6.0 Credit(s)**
- PNN 290 - Health Assessment Across the Lifespan **2.0 Credit(s)**
- PNN 721 - Foundations of Nursing Clinical I **2.0 Credit(s)**
- PNN 201 - Introduction to Math and Medications **1.0 Credit(s)**
- SPC 112 - Public Speaking **3.0 Credit(s)**

Semester Total: 14.0 Credits

#### Second Semester

- PNN 229 - Foundations of Nursing II **4.0 Credit(s)**
- PNN 723 - Foundations of Nursing Clinical II **2.0 Credit(s)**
- PNN 282 - Pharmacology II **2.0 Credit(s)**
- PNN 446 - Nursing Care of the Growing Family **4.0 Credit(s)**
- BIO 151 - Nutrition **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Third Semester

- ADN 213 - Pharmacology Applications **4.0 Credit(s)**
- ADN 831 - Trends and Issues **3.0 Credit(s)**
- ADN 106 - Success in Nursing **1.0 Credit(s)**
- PSY 111 - Introduction to Psychology **3.0 Credit(s)**

Semester Total: 11.0 Credits

#### Fourth Semester

- ADN 421 - Maternal Child Nursing II **3.0 Credit(s)**
- ADN 171 - Concepts of Nursing I **5.0 Credit(s)**
- ADN 740 - Concepts of Nursing Clinic **3.0 Credit(s)**
- BIO 186 - Microbiology **4.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**

Semester Total: 18.0 Credits

#### Fifth Semester

- ADN 292 - Advanced Mental Health Nursing **2.0 Credit(s)**
- ADN 180 - Advanced Concepts of Nursing **4.0 Credit(s)**
- ADN 760 - Advanced Concepts of Nursing Clinical **4.0 Credit(s)**
- ADN 499 - Passage to Professional Practice **1.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**

Semester Total: 14.0 Credits

Total Semester Hours Required 86.0

#### Notes:

Courses with a PNN/ADN prefix must be completed in the sequence listed above. Students must earn a "C" or higher in all required courses in order to graduate.

## Nursing: Nurse Aide Certificate

Nursing: Nurse Aide program of study prepares students for entry level positions in healthcare. Upon completion of this program, students are eligible to take the Nurse Aide written and skills tests and become certified as a Certified Nurse Aid (CNA). Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- HSC 172 - Nurse Aide **3.0 Credit(s)**
- HSC 113 - Medical Terminology **2.0 Credit(s)**

Semester Total: 5.0 Credits

Total Semester Hours Required: 5.0

#### Notes:

This certificate program does not meet the 16 semester hour requirements for federal financial aid. Students who require federal financial aid should select the Nursing: Advanced Nursing Certificate program of study.

## Nursing: Practical Nursing Diploma

Nursing: Practical Nursing program of study prepares graduates to provide direct nursing care for individual clients with common health needs in structured health care settings under the direction and supervision of a registered nurse or physician. Graduates are qualified to write the National Council of State Board of Nursing (NCLEX- PN) examination for practical nurses. This common core of nursing knowledge supports an educational ladder concept and serves as the foundational courses for the Associate Degree Nursing program offered at the college. Graduates of this program are awarded a diploma.

**Program Prerequisite:** Current, valid CNA Certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### Program Prerequisites

General Education Courses that must be completed prior to first semester of nursing:

- ENG 105 - Composition I **3.0 Credit(s)**
- PSY 121 - Developmental Psychology **3.0 Credit(s)**
- BIO 168 - Human Anatomy and Physiology I **4.0 Credit(s)**
- BIO 173 - Human Anatomy and Physiology II **4.0 Credit(s)**

Semester Total: 14.0 Credits

#### First Semester

- PNN 228 - Foundations of Nursing I **6.0 Credit(s)**
- PNN 290 - Health Assessment Across the Lifespan **2.0 Credit(s)**
- PNN 721 - Foundations of Nursing Clinical I **2.0 Credit(s)**
- SPC 112 - Public Speaking **3.0 Credit(s)**
- PNN 201 - Introduction to Math and Medications **1.0 Credit(s)**

Semester Total: 14.0 Credits

#### Second Semester

- PNN 229 - Foundations of Nursing II **4.0 Credit(s)**
- PNN 723 - Foundations of Nursing Clinical II **2.0 Credit(s)**
- PNN 282 - Pharmacology II **2.0 Credit(s)**
- PNN 446 - Nursing Care of the Growing Family **4.0 Credit(s)**
- BIO 151 - Nutrition **3.0 Credit(s)**

Semester Total: 15.0 Credits

Total Semester Hours Required 43.0

#### Notes:

Courses with PNN prefix must be completed in the sequence listed above. Students must earn a "C" or higher in all required courses in order to graduate.

## Plumbing Technology Certificate

Plumbing Technology program of study prepares students for entry-level skills positions in the plumbing industry. Classes focus on safety, hand and power tools, materials, pipe joining methods, code book layout, plan and print reading, and trade calculation. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MAT 743 - Technical Math **3.0 Credit(s)** <sup>1</sup>
- PLU 148 - Plan and Print Reading for Plumbing **2.0 Credit(s)**
- PLU 108 - Plumbing Code **3.0 Credit(s)**
- PLU 178 - Residential Plumbing Lab **6.0 Credit(s)**
- PLU 190 - Plumbing Troubleshooting **2.0 Credit(s)**

Semester Total: 16.0 Credits

Total Semester Hours Required: 16.0

#### Notes:

<sup>1</sup>May substitute with MAT 102 or higher

## Plumbing Technology Diploma

Plumbing Technology program of study prepares students for entry-level skills positions in both the residential and commercial plumbing industry. Classes focus on safety, hand and power tools, materials, pipe joining methods, code book layout, pipefitting, troubleshooting, print reading and trade calculation. Graduates of this program are awarded a diploma. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- MAT 743 - Technical Math **3.0 Credit(s)** <sup>1</sup>
- PLU 148 - Plan and Print Reading for Plumbing **2.0 Credit(s)**
- PLU 108 - Plumbing Code **3.0 Credit(s)**
- PLU 178 - Residential Plumbing Lab **6.0 Credit(s)**
- PLU 190 - Plumbing Troubleshooting **2.0 Credit(s)**

Semester Total: 16.0 Credits

#### Second Semester

- PLU 101 - Pipefitting for Maintenance Trades **2.0 Credit(s)**
- PLU 188 - Commercial Plumbing Lab **6.0 Credit(s)**
- PLU 198 - Applied Plumbing Practices **3.0 Credit(s)**
- PLU 181 - Commercial Code **2.0 Credit(s)**

Semester Total: 13.0 Credits

Total Semester Hours Required: 29.0

#### Notes:

<sup>1</sup>May substitute with MAT 102 or higher

## Psychology Transfer Major, A.A.

Psychology Transfer Major program of study prepares students to transfer to four- year colleges and universities to complete undergraduate majors in psychology and/or related fields. Students acquire a broad understanding of human behavior that encompasses adjustment, development, abnormality, counseling, research, and intelligence. The curriculum includes courses which provide both practical and theoretical information. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- SPC 112 - Public Speaking **3.0 Credit(s)**
- PHI 101 - Introduction to Philosophy **3.0 Credit(s)**
- PSY 111 - Introduction to Psychology **3.0 Credit(s)**<sup>1</sup>
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Second Semester

- ENG 106 - Composition II **3.0 Credit(s)**
- HUM 287 - Leadership Development Studies **3.0 Credit(s)**
- MAT 157 - Statistics **4.0 Credit(s)**<sup>1</sup>
- PSY 121 - Developmental Psychology **3.0 Credit(s)**<sup>1</sup>
- PSY 113 - Personality and Adjustment **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- PHI 105 - Introduction to Ethics **3.0 Credit(s)**<sup>1</sup>
- PSY 293 - Issues in Psychology **3.0 Credit(s)**
- HIS 152 - U.S. History Since 1877 **3.0 Credit(s)**
- PSY 281 - Educational Psychology **3.0 Credit(s)**
- BIO 157 - Human Biology **4.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

#### Fourth Semester

- ANT 100 - Introduction to Anthropology **3.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**
- PSY 241 - Abnormal Psychology **3.0 Credit(s)**
- SOC 200 - Minority Group Relations **3.0 Credit(s)**
- PSY 251 - Social Psychology **3.0 Credit(s)**<sup>1</sup>

Semester Total: 15.0 Credits

Total Semester Hours Required 62.0

#### Notes:

One elective must also satisfy the diversity requirement.

<sup>1</sup> Required courses for the program

## Robotics/Automated Systems Engineering Technology, A.A.S.

Robotics/Automated Systems Engineering Technology program of study prepares students for a technical-level career in robotic automation, design, installation, and service. Students learn skill sets related to robots, controllers, and programming languages. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ELT 215 - Motors and Controls **2.0 Credit(s)**
- ELT 196 - Circuit Analysis I **5.0 Credit(s)**
- IND 109 - Equipment Safety and Operation **3.0 Credit(s)**
- IND 197 - Industrial Engineering Technology Orientation **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

#### Second Semester

- ATR 113 - Industrial Robotics **3.0 Credit(s)**
- ATR 114 - Industrial Robotics Lab **2.0 Credit(s)**
- ELT 250 - Programmable Logic Controllers **3.0 Credit(s)**
- ELT 251 - Programmable Logic Controllers Lab **2.0 Credit(s)**
- ELT 201 - Circuit Analysis II **5.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**

Semester Total: 18.0 Credits

#### Third Semester

- ATR 124 - Application Planning and Layout **3.0 Credit(s)**
- ATR 140 - Applied Robotics Lab I **6.0 Credit(s)**
- ELT 252 - Advanced Programmable Logic Controllers **3.0 Credit(s)**
- ELT 253 - Advanced Programmable Logic Controllers Lab **2.0 Credit(s)**
- ENG 110 - Writing For The Workplace **3.0 Credit(s)**

Semester Total: 17.0 Credits

#### Fourth Semester

- ATR 147 - Applied Robotics Lab II **6.0 Credit(s)**
- ATR 152 - Robot Controller Maintenance **2.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**
- Technical Elective<sup>2</sup> - 3.0 Credits

Semester Total: 17.0 Credits

Total Semester Hours Required 68.0

Notes:

<sup>1</sup>May substitute for MAT 102 or higher.

<sup>2</sup>

Technical Electives must be selected from the following subjects:

- CAD 139 - Introduction to CAD/CAM **3.0 Credit(s)**
- ELE 227 - Electrical Blueprint Reading **2.0 Credit(s)**
- ELE 326 - Basics of Wiring **2.0 Credit(s)**
- EGR 160 - Engineering I **3.0 Credit(s)**
- HCR 208 - Boilers and Hydronic Systems **4.0 Credit(s)**
- HCR 458 - Alternative Energy Sources **2.0 Credit(s)**
- MFG 145 - Light Machining for Maintenance Trades **4.0 Credit(s)**
- NET 790 - PC Support I **3.0 Credit(s)**
- SER 195 - Advanced Sustainable Energy II **3.0 Credit(s)**
- WTT 143 - Mechanical Power Transmission **3.0 Credit(s)**

## Robotics/Automated Systems Technician Diploma

Robotics/Automated Systems Technician program of study prepares students to be employed as industrial automation technicians. Graduates are trained for entry-level jobs involving the implementation, installation, and maintenance of industrial automation systems. Graduates of this program are awarded a diploma. Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- ELT 215 - Motors and Controls **2.0 Credit(s)**
- ELT 196 - Circuit Analysis I **5.0 Credit(s)**
- IND 109 - Equipment Safety and Operation **3.0 Credit(s)**
- IND 197 - Industrial Engineering Technology Orientation **3.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**<sup>1</sup>

Semester Total: 16.0 Credits

#### Second Semester

- ATR 113 - Industrial Robotics **3.0 Credit(s)**
- ATR 114 - Industrial Robotics Lab **2.0 Credit(s)**
- ELT 250 - Programmable Logic Controllers **3.0 Credit(s)**
- ELT 251 - Programmable Logic Controllers Lab **2.0 Credit(s)**
- ELT 201 - Circuit Analysis II **5.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**

Semester Total: 18.0 Credits

Total Semester Hours Required 34.0

Notes:

<sup>1</sup> May substitute for MAT 102 or higher.

## Sociology Transfer Major, A.A.

Sociology Transfer Major program of study prepares students to transfer to sociology departments and programs at four-year colleges and universities. The curriculum is designed to teach students the fundamentals of sociological principles, analysis and research skills. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

### Recommended Course Sequence

#### First Semester

- ENG 105 - Composition I **3.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**<sup>1</sup>
- SPC 112 - Public Speaking **3.0 Credit(s)**
- LIT 134 - Multicultural Literature **3.0 Credit(s)**
- ANT 100 - Introduction to Anthropology **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Second Semester

- ENG 106 - Composition II **3.0 Credit(s)**
- SOC 115 - Social Problems **3.0 Credit(s)**<sup>1</sup>
- MAT 157 - Statistics **4.0 Credit(s)**<sup>1</sup>
- PHI 105 - Introduction to Ethics **3.0 Credit(s)**
- SPC 120 - Intercultural Communications **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Third Semester

- SOC 120 - Marriage and Family **3.0 Credit(s)**<sup>1</sup>
- SOC 200 - Minority Group Relations **3.0 Credit(s)**
- PHS 187 - Introduction to Earth Science **4.0 Credit(s)**
- GEO 121 - World Regional Geography **3.0 Credit(s)**
- PSY 111 - Introduction to Psychology **3.0 Credit(s)**

Semester Total: 16.0 Credits

#### Fourth Semester

- SOC 210 - Men, Women and Society **3.0 Credit(s)**
- CRJ 100 - Introduction to Criminal Justice **3.0 Credit(s)**
- REL 101 - Survey of World Religions **3.0 Credit(s)**
- PSY 251 - Social Psychology **3.0 Credit(s)**<sup>1</sup>
- POL 111 - American National Government **3.0 Credit(s)**<sup>1</sup>

Semester Total: 15.0 Credits

Total Semester Hours Required 62.0

#### Notes:

One elective must also satisfy the diversity requirement.

<sup>1</sup> Required courses for the program

## Surgical Technology, A.A.S.

Surgical Technology program of study is designed to prepare students to become skilled operating room technicians. The program prepares students to practice under the supervision of a physician or registered nurse and to function as a member of the surgical team. Sterile techniques, operative procedures, anatomy and physiology, and microbiology, as applied to surgery, are studied. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree. Students must complete the curriculum described below:

### Recommended Course Sequence

#### Program Prerequisites

- BIO 168 - Human Anatomy and Physiology I **4.0 Credit(s)**
- HSC 113 - Medical Terminology **2.0 Credit(s)**
- MAT 743 - Technical Math **3.0 Credit(s)**
- ENG 105 - Composition I **3.0 Credit(s)**
- SPC 122 - Interpersonal Communication **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### First Semester

- HSC 203 - Sterile Processing Fundamentals **5.0 Credit(s)**
- BIO 173 - Human Anatomy and Physiology II **4.0 Credit(s)**
- PSY 121 - Developmental Psychology **3.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**

Semester Total: 15.0 Credits

#### Second Semester

- BIO 186 - Microbiology **4.0 Credit(s)**
- SUR 134 - Introduction to Surgical Technology and Anesthesia **3.0 Credit(s)**
- SUR 141 - Introduction to Basic Surgical Principles **6.0 Credit(s)**

Semester Total: 13.0 Credits

#### Third Semester

- SUR 215 - Basic Surgical Principles **5.0 Credit(s)**
- SUR 221 - Surgical Technology **4.0 Credit(s)**
- SUR 518 - Clinical I **5.0 Credit(s)**

Semester Total: 14.0 Credits

#### Fourth Semester

- SUR 320 - Advanced Surgical Technology **2.0 Credit(s)**
- SUR 524 - Clinical II **5.0 Credit(s)**

Semester Total: 7.0 Credits

Total Semester Hours Required: 64.0

#### Notes:

Program specific courses (HSC and SUR) must be taken in the order listed.

Students must earn a "C" or higher in all SUR, BIO, and HSC courses in order to graduate.

## Veterinary Technology, A.A.S.

The Veterinary Technology program of study prepares students to become entry-level veterinary technicians who work under the direct supervision of a licensed veterinarian for any purpose except diagnosis, prescription, or surgery. Graduates can find employment in many sectors including small and large private animal practice, animal shelters and humane societies, clinical laboratories, education, zoos, government, research, and the biomedical industry. Graduates of this program are awarded an Associate of Applied Science (A.A.S.) degree. To become a registered professional, a graduate must successfully complete the Veterinary Technician National Exam (VTNE) and the Iowa Veterinary Technician Examination to become a Registered Veterinary Technician (RVT). This program is accredited by the American Veterinary Medical Association (AVMA) under the guidelines set forth by the accrediting body.

**Program Prerequisite:** A college-level chemistry course of at least three semester hours OR a high school-level chemistry course of at least one semester in length.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### Program Prerequisites

General Education Courses that must be completed prior to the first semester of Veterinary Technology:

- BIO 112 - General Biology I **4.0 Credit(s)**
- AGV 104 - Veterinary Technology Anatomy and Physiology I **3.0 Credit(s)**

Semester Total: 7.0 Credits

#### First Semester

- AGV 100 - Introduction to Veterinary Technology **2.0 Credit(s)**
- AGV 110 - Principles of Veterinary Technology I **3.0 Credit(s)**
- AGV 120 - Veterinary Medical Terminology **1.0 Credit(s)**
- AGV 122 - Principles of Sanitation **3.0 Credit(s)**
- AGV 205 - Kennel Management and Animal Care I **1.0 Credit(s)**
- AGV 108 – Veterinary Technology Anatomy and Physiology II **3.0 Credit(s)**

Semester Total: 13.0 Credits

#### Second Semester

- AGV 115 - Principles of Veterinary Technology II **3.0 Credit(s)**
- AGV 135 - Clinical Pathology Lab Techniques I **3.0 Credit(s)**
- AGV 140 - Veterinary Pharmacology **3.0 Credit(s)**
- BIO 186 - Microbiology **4.0 Credit(s)**
- AGV 207 - Kennel Management and Animal Care II **1.0 Credit(s)**

Semester Total: 14.0 Credits

#### Summer

- AGV 142 - Mathematics for Veterinary Technicians **3.0 Credit(s)**
- AGV 145 - Animal Nutrition **3.0 Credit(s)**
- AGV 805 - Veterinary Technology Internship I **2.0 Credit(s)**

- ENG 105 - Composition I **3.0 Credit(s)**

Semester Total: 11.0 Credits

#### Third Semester

- AGV 147 - Large Animal Care **4.0 Credit(s)**
- AGV 170 - Veterinary Anesthesiology **3.0 Credit(s)**
- AGV 136 - Clinical Pathology Lab Techniques II **4.0 Credit(s)**
- AGV 150 - Office Procedures for Veterinary Technicians **3.0 Credit(s)**
- Social Science/Humanities Elective **3.0 Credit(s)**<sup>2</sup>
- AGV 209 - Kennel Management and Animal Care III **1.0 Credit(s)**

Semester Total: 18.0 Credits

#### Fourth Semester

- AGV 149 - Avian, Exotic and Lab Animal Care **3.0 Credit(s)**
- AGV 182 - Diagnostic Imaging **3.0 Credit(s)**
- AGV 806 - Veterinary Technology Internship II **3.0 Credit(s)**
- AGV 185 - Veterinary Surgical Assisting **3.0 Credit(s)**
- MGT 195 - Workplace Empowerment **3.0 Credit(s)**
- AGV 211 - Kennel Management and Animal Care IV **1.0 Credit(s)**

Semester Total: 16.0 Credits

Total Semester Hours Required: 79.0

#### Notes:

Students must earn a "C" or higher in all required courses in order to graduate.

**Social Science/Humanities Elective must be selected from the following:**

- ECN 120 - Principles of Macroeconomics **3.0 Credit(s)**
- ECN 130 - Principles of Microeconomics **3.0 Credit(s)**
- PHI 105 - Introduction to Ethics **3.0 Credit(s)**
- PHI 142 - Ethics in Business **3.0 Credit(s)**
- PSY 111 - Introduction to Psychology **3.0 Credit(s)**
- PSY 121 - Developmental Psychology **3.0 Credit(s)**
- SOC 110 - Introduction to Sociology **3.0 Credit(s)**
- SOC 120 - Marriage and Family **3.0 Credit(s)**

## Welding Certificate

Welding program of study prepares students to enter the workforce as beginning production, maintenance, or job shop welders. Students learn the latest techniques in fabrication of materials by welding processes. Students apply fundamental techniques and principles related to welding. This program provides an overview of topics such as metallurgy, fabrication, layout, estimating, and repair. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- WEL 149 - Fundamentals of Shielded Metal Arc Welding **3.0 Credit(s)**
- WEL 192 - Gas Tungsten Arc Welding **4.0 Credit(s)**
- WEL 228 - Introduction to Welding, Safety, and Health of Workers **1.0 Credit(s)**
- WEL 233 - Print Reading and Welding Symbol Interpretations **3.0 Credit(s)**
- WEL 256 - Gas Metal Arc Welding **4.5 Credit(s)**
- WEL 259 - Oxy-Acetylene Arc Welding **1.0 Credit(s)**

Semester Total: 16.5 Credits

Total Semester Hours Required: 16.5

## Welding Technology Diploma

Welding Technology program of study prepares students to enter the workforce as production, maintenance, or job shop welders. Students apply fundamental techniques and principles related to metallurgy, fabrication, layout, estimating, and repair. Students learn the different career options and welding certifications to better prepare them for the workforce. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

### Recommended Course Sequence

#### First Semester

- WEL 149 - Fundamentals of Shielded Metal Arc Welding **3.0 Credit(s)**
- WEL 192 - Gas Tungsten Arc Welding **4.0 Credit(s)**
- WEL 228 - Introduction to Welding, Safety, and Health of Workers **1.0 Credit(s)**
- WEL 233 - Print Reading and Welding Symbol Interpretations **3.0 Credit(s)**
- WEL 256 - Gas Metal Arc Welding **4.5 Credit(s)**
- WEL 259 - Oxy-Acetylene Arc Welding **1.0 Credit(s)**

Semester Total: 16.5 Credits

#### Second Semester

- MAT 743 - Technical Math **3.0 Credit(s)** <sup>1</sup>
- MFG 190 - Metallurgy **2.0 Credit(s)**
- WEL 301 - Pipe Welding **2.0 Credit(s)**
- WEL 240 - Welding Fabrication/ Certification **3.0 Credit(s)**
- WEL 208 - Introduction to Fabrication **2.0 Credit(s)**

Semester Total: 12.0 Credits

Total Semester Hours Required: 28.5

Notes:

<sup>1</sup>May substitute for MAT 102 or higher

# Course Descriptions

## Accounting

### ACC 111 - Introduction to Accounting

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Introduction to Accounting presents a comprehensive understanding of the relationship between assets, liabilities, and owner's equity. The course explains preparation and analysis of the income statement and balance sheet as well as the accounting cycle and such vital functions as journalizing, posting, cash receipts, cash payments, purchases, and adjusting and closing entries.

### ACC 121 - Principles of Accounting I

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Principles of Accounting I introduces accounting fundamentals using the balance sheet approach and branches into journals, ledgers, financial statements, and developing the accrual method. Topics include inventory valuation and cost of goods sold, plant and equipment, internal control, current and long-term liabilities, receivables, interest, and payroll.

### ACC 122 - Principles of Accounting II

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Principles of Accounting II emphasizes principles and problems of corporations, accounting for manufacturing and departmental costs, budgeting, profit analysis, and financial statements interpretation from the managerial viewpoint.

**Prerequisite(s):** ACC 121 - Principles of Accounting I.

### ACC 161 - Payroll Accounting

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Payroll Accounting presents payroll tax laws and records that are required by these laws. It emphasizes a review of both federal and state payroll tax legislation, methods of calculating earnings, payroll deductions, and employer payroll taxes. Students examine the forms that are necessary to complete the needed governmental reports.

**Prerequisite(s):** ACC 121 - Principles of Accounting I.

### ACC 211 - Intermediate Accounting I

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Intermediate Accounting I presents the principles and procedures essential to the preparation of adequate financial statements. Special attention centers on the solving of problems that arise in the presentation of cash, receivables, inventories, tangible and intangible assets on the balance sheet and related effect on the income statement.

**Prerequisite(s):** ACC 122 - Principles of Accounting II.

### ACC 221 - Cost Accounting

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Cost Accounting provides a theoretical and procedural basis for understanding job order, process and standard cost accounting with emphasis on details concerning cost factors and budgeting in a manufacturing firm. It enables students to account for cost of materials, labor, and factory overhead using various methods. The course also includes cost analysis for decision-making. A practice set is used.

**Prerequisite(s):** ACC 122 - Principles of Accounting II.

### ACC 251 - Governmental and Nonprofit Accounting

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Governmental and Nonprofit Accounting presents the basic concepts and techniques of fund accounting for federal, state and local governments, hospitals, and schools. Students learn to deal with the primary funds and accounting groups, to assist the budget process and to determine variances among the major nonprofit organizations.

**Prerequisite(s):** ACC 121 - Principles of Accounting I.

### ACC 261 - Income Tax Accounting

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Income Tax Accounting is the study of federal income tax regulations as they relate to common types of income tax reports required of individuals and sole proprietorship business. Students also examine employer's tax reporting regulations for FICA Tax, Federal Income Tax, and State Income Tax.

### ACC 311 - Computer Accounting

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Computer Accounting consists of an application of accounting principles and concepts using the microcomputer. Students establish and maintain accounting systems and records for single proprietorship and corporations.

**Prerequisite(s):** ACC 121 - Principles of Accounting I.

### ACC 932 - Internship

**1.0 - 8.0 Credit(s)**

**Lecture 0**

**Lab 0**

**Internship 4-32**

Internship gives students work experience in the field of accounting through placement in government offices, public accounting firms and general business. Students apply the skills acquired in the Para-Accounting program to the everyday responsibilities expected of trained Para-Accountants, including summarizing and recording economic events and using effective oral and written communication skills.

**Prerequisite(s):** Sophomore standing in the program.

## Agriculture - Agronomy

### AGA 165 - Agricultural Fertilizers and Chemicals

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Agricultural Fertilizers and Chemicals examines the production properties and use of the various agricultural/horticultural fertilizers, soil amendments, pesticides, and additives. Topics include soil fertility management, mixing instructions, weeds, crop insects, diseases, environmental concerns, compatibility, viscosity, drift factors, toxicity, crop sequencing limitations, and restrictions.

### AGA 181 - Introduction to Crop Science

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Introduction to Crop Science covers the basic structure and function of plants, origin and classification, growth and development. Additional topics include fundamentals of photosynthesis, plant water use, plant nutrition and genetics that regulate plant growth, development and responses to the environment.

### AGA 182 - Introduction to Soil Science

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Introduction to Soil Science covers physical, chemical, and biological properties of soils, soil formation, classification and global distribution, soil health, soils and humanity and sustainable land management.

### AGA 280 - Crop Development, Production, and Management

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Crop Development, Production, and Management provides an overview of crops and cropping systems in the context of global and US agriculture. Students focus on agronomic principles, constraints and opportunities as they apply to various locations in Iowa, the USA and the world.

**Prerequisite(s):** AGA 181 - Introduction to Crop Science.

### AGA 284 - Pesticide Application Certification

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Pesticide Application Certification stresses the requirements for the license as outlined in the "core manual" prepared by ISU Extension and prepares students for successful completion of the Iowa Department of Agriculture tests in weed, crop, insect, and disease applicator certification.

### AGA 376 - Integrated Pest Management

**3.0 Credit(s)**

**Lecture 2**

**Lab 2**

Integrated Pest Management teaches observation techniques for pest control which includes disease, insect and weed problems as well as techniques for developing and evaluating pest management programs, and procedures involved in integrated pest management.

## Agriculture - Farm Management

### AGB 101 - Agricultural Economics

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

The Agricultural Economics course is the introduction of economic principles of production, supply and demand applied to economic problems of agriculture and agricultural-related industries, and to the decisions in farm management, marketing, foreign trade, and agricultural policy. (3/0).

### AGB 211 - Agricultural Law, Taxation and Records

**3.0 Credit(s)**

**Lecture 2**

**Lab 2**

Agricultural Law, Taxation and Records explores the local, state and federal laws and regulations that govern the successful operation of an agriculture-based business, as well as the records needed to comply with those regulations. Topics include agriculture tax law, financial rules and regulations, estate and property transfer laws, and the use of computer-aided record keeping and analysis tools in making informed business decisions to comply with these regulations.

### AGB 235 - Introduction to Agriculture Markets

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Introduction to Agriculture Markets examines the basic concepts and economics principles related to markets for agricultural inputs and products. It is an overview of current marketing problems faced by farms and agribusinesses, farm and retail price behavior, structure of markets, food marketing channels, food quality, food safety, and the role of agriculture in the general economy. Introduction to hedging, futures, and other risk management tools are also covered. It examines the implications of consumer preferences at the farm level.

### AGB 330 - Farm Business Management

**3.0 Credit(s)**

**Lecture 2**

**Lab 2**

Farm Business Management examines the business and economic principles applied to decision-making and problem-solving in the management of a farm business. Students learn about cash flow, partial, enterprise, and whole farm budgeting. Additional topics include: information systems for farm accounting, analysis, and control; obtaining and managing land, capital, and labor resources; and alternatives for farm business organization and risk management.

### AGB 331 - Entrepreneurship in Agriculture

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Entrepreneurship in Agriculture relates specifically to management of agriculture farms and businesses. Course content emphasizes budget planning, record keeping, record analysis, ag finance/credit, and machinery and land management. Management exercises simulating farm activities and decisions are incorporated. Microcomputers are used to aid in the completion of these management exercises.

**AGB 336 - Agricultural Selling****3.0 Credit(s)****Lecture 3****Lab 0**

Agricultural Selling examines the principles of selling with application to agricultural and food related businesses, attitudes, value systems, and behavioral patterns that relate to agricultural sales. Also covered are marketing, selling strategies, preparing for sales calls, making sales presentations, handling objections, closing sales and the analysis of the buying or purchasing process and the evaluation of the agri-selling profession.

**AGB 437 - Commodity Marketing****3.0 Credit(s)****Lecture 3****Lab 0**

Commodity Marketing examines basis, fundamental and technical price analysis, commodity futures, futures options, alternative cash contracts, sources and uses of marketing information, and relevant agricultural marketing strategies.

**AGB 466 - Agricultural Finance****3.0 Credit(s)****Lecture 3****Lab 0**

Agricultural Finance provides an overview of agricultural finance principles. Topics covered include financial statements, liquidity and solvency analysis and capital structure of agricultural firms. Financial institutions, costs of credit, asset management, and public policy regarding agriculture finance topics are covered as well.

**AGB 804 - Agricultural Internship I****3.0 Credit(s)****Lecture 0****Lab 0****Internship 12**

Agricultural Internship provides Agribusiness Technology students with hands-on training at off-campus work sites.

**AGB 814 - Agricultural Internship II****4.0 Credit(s)****Lecture 0****Lab 0****Internship 16**

Agricultural Internship II consists of practical experience at a workstation off-campus for Agribusiness Technology students.

**Agriculture - Precision Ag****AGP 333 - Precision Farming Systems****3.0 Credit(s)****Lecture 2****Lab 2**

Precision Farming Systems provides an overview of precision farming concepts and the tools of precision farming (GPS, GIS, and VRT). The introductory use of each of these tools within the processes of a precision farming system is covered. There will be hands-on activities that will provide an initial experience in the use of these tools. Economic and environmental benefits are also discussed.

**AGP 456 - Advanced Technology Applications****3.0 Credit(s)****Lecture 2****Lab 2**

Advanced Technology Applications deals with advanced techniques of spatial data manipulation to allow for analysis, report generation and cross-platform transfer of GIS information. It also includes advanced topics in word processing, spreadsheet, database, and presentation software as well as an introduction to network systems operations and data transfer.

**AGP 457 - Agronomic Applications of Site Specific Management****3.0 Credit(s)****Lecture 2****Lab 2**

Agronomic Applications of Site Specific Management provides detailed study of GPS and VRT systems and how they relate to agriculture.

**Agriculture - Comprehensive****AGC 215 - Career Seminar****1.0 Credit(s)****Lecture 1****Lab 0**

Career Seminar is a study of the development of the agricultural industry in the United States and the purposes of higher education within the industry. Outside speakers are used to inform students of career opportunities.

**Agriculture - Animal Science****AGS 113 - Survey of the Animal Industry****3.0 Credit(s)****Lecture 3****Lab 0**

Survey of the Animal Industry introduces students to the various species and breeds of domestic animals and it creates an understanding of the principles of food animal production, product marketing and issues confronting the animal industry.

**AGS 226 - Beef Cattle Science****3.0 Credit(s)****Lecture 2****Lab 2**

Beef Cattle Science studies the practical application of modern production and management practices with regards to cow/calf, feeder cattle and beef cattle finishing, with an emphasis on management of nutrition, reproduction, health, husbandry, and breeding selection. Economics of beef cattle production are also studied.

**Prerequisite(s):** AGS 113 - Survey of the Animal Industry

## Anthropology

### ANT 100 - Introduction to Anthropology

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Introduction to Anthropology introduces the unique holistic approach of anthropology in exploring the biological origins of humanity and the diversity of cultures and societies. Students explore the four sub fields of anthropology: archaeology, ethnology, linguistics, and physical anthropology. Issues concerning evolutionary theory, adaptations, cultural change, and conflict are explored in depth.

### ANT 105 - Cultural Anthropology

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Cultural Anthropology provides a cross-cultural examination of past and present human cultures and societies. Students explore cultural variation as reflected in diverse subsistence strategies, economics, kinship, and political systems. Students apply cross-cultural comparisons in examining issues of social stratification, cultural change and conflict. Examining the issues surrounding applied anthropology and introducing students to global social problems are central to this course.

**Note(s):** Meets diversity requirement for graduation.

## Art

### ART 101 - Art Appreciation

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Art Appreciation develops a cultural understanding and appreciation of art from prehistoric to present time. Students survey the vast field of artistic expression through exposure to quality art forms and styles representative of creativity throughout the world.

### ART 120 - 2-D Design

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

2-D Design is an introductory art course for both art and non-art majors. Topics include an overview of elements, principles, and strategies relevant to the interpretation and execution of two dimensional compositions.

### ART 123 - 3-D Design

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

3-D Design is an introductory art course for both art and non-art majors. Topics include an overview of elements, principles, and strategies relevant to the interpretation and execution of three dimensional compositions.

### ART 125 - Digital Media

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Digital Media introduces students to the use of digital technology as a practical and creative tool within the artistic process. Students explore a variety of digital resources and how they can be used to document, create and present artwork. Content includes image capturing and manipulation, a foundational understanding of creative software programs and finalizing digital content for presentation.

### ART 126 - Digital Media II

**3.0 Credit(s)**

**Lecture 2**

**Lab 2**

Digital Media II builds on methods explored in Digital Media. Emphasis is placed on advanced imaging techniques, color theory, camera raw images, and discussion on copyright.

### ART 133 - Drawing

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Drawing introduces students to basic skills and techniques employed in observational drawing through traditional approaches to line, form, composition, perspective, and value.

### ART 134 - Drawing II

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Drawing II is an advanced course in drawing. Experience in the interpretation of visual forms through drawing media will be stressed during this course. This course is a continuation of Drawing.

**Prerequisite(s):** ART 133 Drawing

### ART 143 - Painting

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Painting introduces students to the basic language of the painting discipline. Students apply the study of color and composition to the creation of paintings using various media. This course explores versatile processes for planning and developing a visual idea.

### ART 151 - Design I

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Design I introduces students to the organization of visual elements and principles while exploring the creative process of two-dimensional and three dimensional design in the digital environment. Students develop conceptual and technical skills through projects and discussions related to the practice of visual communication.

### ART 184 - Photography

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Photography provides students the basic tools and techniques of photography as a digital medium. Students will learn the operation and function of digital cameras and how to use them technically and creatively. Projects will be completed relating photography as an art form and aesthetic medium.

**ART 196 - Studio Practices I****3.0 Credit(s)****Lecture 3****Lab 0**

Studio Practices I addresses processes needed to successfully strategize a working artistic practice. Topics include conceptual development, and creation and execution of art projects. Students are expected to develop and complete a substantial body of work in a specific medium(s). This course provides a forum for the critical evaluation of this work and curatorial guidance in preparation for the next stage of a student's career.

**Prerequisite(s):** A Grade of "C" or higher in ART 120 - 2-D Design, ART 123 - 3-D Design, ART 125 - Digital Media, and ART 133 - Drawing.

**ART 203 - Art History I****3.0 Credit(s)****Lecture 3****Lab 0**

Art History I is a study of Western traditions in art history, starting with prehistoric art and continuing through the classical, medieval, Renaissance, and Baroque periods.

**ART 204 - Art History II****3.0 Credit(s)****Lecture 3****Lab 0**

Art History II is a study of Western traditions in art history, starting with the Baroque period and continuing through the art of today.

**Automation Tech and Robotics****ATR 113 - Industrial Robotics****3.0 Credit(s)****Lecture 3****Lab 0**

Industrial Robotics introduces students to the start-up, operation, programming, and maintenance of industrial robot systems. Topics include robot safety, robot geometries and associated work envelopes, motion types, program planning and structure, decision making, motion and peripheral control, and vision systems.

**Corequisite(s):** ATR 114 - Industrial Robotics Lab.

**ATR 114 - Industrial Robotics Lab****2.0 Credit(s)****Lecture 0****Lab 4**

Industrial Robotics Lab provides students hands-on experience with the start-up, operation, and programming of industrial robots, including the use of vision systems.

**Corequisite(s):** ATR 113 - Industrial Robotics.

**ATR 124 - Application Planning and Layout****3.0 Credit(s)****Lecture 3****Lab 0**

Application Planning and Layout covers the specifics of how an automated manufacturing cell is designed. Topics include robotic placement within the cell, types of robot(s) used within the cell, safety devices, blueprints, electrical interfacing of controls, programming flow charting, timeline development, fixture design, and robot tooling design.

**Prerequisite(s):** ATR 113 - Industrial Robotics.

**ATR 133 - Fluid Power Systems****2.0 Credit(s)****Lecture 2****Lab 0**

Fluid Power Systems covers fluid power and pneumatic systems, basic circuits, and properties of both fluid and compressed air. Storage, connections, valves, fittings, and pressure area volume are examined and explained. Actuating devices and controlling devices used in common automated systems are also covered.

**ATR 140 - Applied Robotics Lab I****6.0 Credit(s)****Lecture 3****Lab 6**

Applied Robotics Lab I gives students the opportunity to work within application groups and to implement the robotic automated manufacturing application design that they developed in Application Planning and Layout. This includes building electrical control centers and building robot end-of-arm tooling and product fixturing. The course also includes programming all of programmable devices within the cell, which can include multiple robots, programmable logic controllers, and sensors. Students document cell progress and evaluate operation of electrical, mechanical, and programmed devices. Applications can be welding, material handling, assembly, and CNC machine load unload, and will replicate actual automated manufacturing processes in industry.

**Prerequisite(s):** ATR 113 - Industrial Robotics.

**ATR 147 - Applied Robotics Lab II****6.0 Credit(s)****Lecture 3****Lab 6**

Applied Robotics Lab II expand the robotic applications and integration of robotic controllers and programmable logic controllers, along with advanced features and function specific to the student designed and built application started in Applied Robotics Lab I. Students use the application to demonstrate functionality to potential employers, fellow students and staff.

**Prerequisite(s):** ATR 140 - Applied Robotics Lab I.

**ATR 152 - Robot Controller Maintenance****2.0 Credit(s)****Lecture 1****Lab 2**

Robot Controller Maintenance covers normal maintenance and troubleshooting of the robot controller components. Students complete exercises in troubleshooting real and simulated faults within the controller using electrical and software troubleshooting procedures as outlined within the manufacturers' manuals. Safe troubleshooting procedures are discussed in lecture and practiced in the lab.

**Prerequisite(s):** ATR 140 - Applied Robotics Lab I.

**ATR 165 - Advanced Robot Controller Programming****2.0 Credit(s)****Lecture 2****Lab 0**

Advanced Robot Controller Programming covers I/O mapping, file manipulation, PLC to Robot setup, and HMI development that a technician would be required to understand. Students program a complete application including HMI and PLC control of a robot for a robotic application such as welding, painting, or assembly.

**Prerequisite(s):** A grade of "C" or higher in ATR 133 - Fluid Power Systems and ATR 140 - Applied Robotics Lab I.

**Corequisite(s):** ATR 147 - Applied Robotics Lab II.

**ATR 170 - Robotics/Automated Systems Internship****3.0 Credit(s)****Lecture 0****Lab 0****Internship 12**

Robotics/Automated Systems Internship provides work experience related to the students' career interests. The course allows students to integrate and apply theory to practice. Work experience hours are arranged.

**Prerequisite(s):** Permission of the instructor.

**Automotive Technology****AUT 116 - Automotive Technology Lab I****6.0 Credit(s)****Lecture 0****Lab 18**

Automotive Technology Lab I allows students to build upon basics learned in introduction to Automotive Technology and Automotive Electricity/Electronics. Students learn basic automotive trade skills such as soldering, oxygen/acetylene cutting, heating and brake tube manufacture and repair, as well as others. Students practice working with R&R components, basic trouble shooting, and electrical skills. Students perform basic engine disassembly, cooling system repairs, vehicle diagnostics, and basic vehicle services, including transmission fluid changes, differential service, axle removal, and clutch service.

**AUT 119 - Introduction to Automotive Technology****4.0 Credit(s)****Lecture 4****Lab 0**

Introduction to Automotive Technology introduces the fundamental skills required to work in the automotive industry. Students study safety protocols, as well as the organizational structures and practices of dealership and independent repair businesses. Students are introduced to engine designs and operations, lubrication and cooling system theories, principles of clutch operations, transmissions/transaxles, four-wheel/all-wheel drive systems, drive shafts/half-shafts, and final drive assemblies.

**AUT 220 - Automotive Technology Lab II****6.0 Credit(s)****Lecture 0****Lab 18**

Automotive lab II allows students to build production skills and confidence in ability to diagnose and repair vehicles, and reinforces skills learned in other courses. Use of a "live lab" environment helps students achieve job entry competency levels. Students perform a wide variety of maintenance procedures, adjustments and minor repairs on customer and college-owned units relating to maintenance and light repair of automobiles and light trucks. This build upon skills from Automotive Technology Lab I.

**AUT 249 - Automotive Technology Lab III****3.0 Credit(s)****Lecture 0****Lab 9**

Automotive Technology Lab III allows students to build production skills, build confidence in ability to diagnose and repair vehicles, and reinforce skills learned in other courses. Use of a "live lab" environment helps students achieve job entry competency levels. Students perform a wide variety of diagnostic tests, adjustments and overhaul/repairs on customer and college-owned units.

**AUT 301 - Automotive Transmission and Drivetrain****4.0 Credit(s)****Lecture 4****Lab 0**

Automotive Transmission and Drivetrain investigates the proper diagnosing, disassembly, cleaning, measurement, analysis, reconditioning, and assembly of automotive transmissions and drivetrains. Instruction covers automatic transmissions (hydraulic and electronic shift), manual transmissions/transaxles, transfer cases, 4WD/AWD, and rear axle/final drives.

**AUT 302 - Automotive Engine Repair and Rebuild****4.0 Credit(s)****Lecture 4****Lab 0**

Automotive Engine Repair and Rebuild covers the proper diagnosing, disassembly, cleaning, measurement, analysis, recondition, and assembly of automotive internal combustion engines.

**AUT 404 - Automotive Suspension and Steering****4.0 Credit(s)****Lecture 4****Lab 0**

Automotive Suspension and Steering exposes students to a variety of types of steering and suspension found in automotive vehicles. Students discuss suspension geometry and its role in vehicle handling. Students also explore how alignment angles affect handling and tire wear characteristics. Students apply electronic principles to suspension monitoring and performance.

**AUT 421 - Automotive Technology Lab IV****6.0 Credit(s)****Lecture 0****Lab 18**

Automotive Technology Lab IV allows students to build production skills and confidence in ability to diagnose and repair vehicles, and reinforces skills learned in other courses. Use of a "live lab" environment helps students achieve job entry competency levels. Students perform a wide variety of maintenance procedures, adjustments and minor repairs on customer and college-owned units relating to maintenance and light repair of automobiles and light trucks. This builds upon skills from Automotive Technology Lab III.

**AUT 506 - Automotive Technology Lab VI****3.0 Credit(s)****Lecture 0****Lab 9**

Automotive Technology Lab VI allows students to build production skills and confidence in ability to diagnose and repair vehicles, and reinforces skills learned in other courses. Use of a "live lab" environment helps students achieve job entry competency levels. Students perform a wide variety of diagnostic tests, adjustments and overhaul/repairs on customer and college-owned units. This builds upon skills from Automotive Technology Lab V.

**AUT 521 - Automotive Technology Lab V****6.0 Credit(s)****Lecture 0****Lab 18**

Automotive Technology Lab V allows students to build production skills and confidence in ability to diagnose and repair vehicles, and reinforces skills learned in other courses. Use of a "live lab" environment helps students achieve job entry competency levels. Students perform a wide variety of diagnostic tests, adjustments and overhaul/repairs on customer and college-owned units. This builds upon skills from Automotive Technology Lab IV.

**AUT 524 - Automotive Brake Systems and Service****4.0 Credit(s)****Lecture 4****Lab 0**

Automotive Brake Systems and Service allows students to explore the scientific principles and mechanical forces behind automotive brake systems. Students learn to properly diagnose and service the hydraulic, mechanical, and electrical components of automotive brakes. Operation and component information for various types of braking systems are presented and discussed. Anti-lock brakes and traction/stability controls are introduced and expanded upon.

**AUT 615 - Automotive Electricity/Electronics****4.0 Credit(s)****Lecture 4****Lab 0**

Automotive Electricity/Electronics introduces students to the world of electrons within the application of automotive technology. Students learn basic scientific principles that govern electrical current throughout the automobile. Students are instructed in what electricity is, where it comes from, and how to control it. Students are shown how to diagnose and service both simple and complex electrical systems.

**AUT 617 - Automotive and Diesel Fuel Systems****4.0 Credit(s)****Lecture 4****Lab 0**

Automotive and Diesel Fuel Systems provides instruction in automotive gas and diesel fuel system principals, operation, and diagnosis. Discussions are centered on computer sensor inputs and fuel system component outputs. Students receive a basic introduction to turbocharging and supercharging systems. Electric drive systems are discussed with an emphasis on battery and drive system maintenance.

**AUT 837 - Automotive Heating and Air Conditioning****2.0 Credit(s)****Lecture 2****Lab 0**

Automotive Heating and Air Conditioning introduces students to automotive heating and air conditioning systems. Students explore the state changes of liquids through super heating, super cooling, radiation, conduction, convection, expansion, and compression. Students learn diagnostic and service components, as well as safe handling techniques with refrigerant and environmental issues affecting the industry.

**AUT 910 - Automotive Technology Internship I****6.0 Credit(s)****Lecture 0****Lab 0****Internship 24**

Automotive Technology Internship I provides work experience related to training at Iowa Western Community College. This is a partnership between Iowa Western, an approved work site, and a student who can benefit from on-the-job training. Internship hours are arranged. Students must complete an application procedure. Students must be approved by the instructor.

**Prerequisite(s):** Permission from the instructor.**AUT 915 - Automotive Technology Internship II****3.0 Credit(s)****Lecture 0****Lab 0****Internship 12**

Automotive Technology Internship II provides work experience related to training at Iowa Western Community College. This is a partnership between Iowa Western, an approved work site, and a student who can benefit from on-the-job training. Internship hours are arranged. Students must meet minimum requirements and complete an application procedure. All internships must be approved by the instructor.

**Prerequisite(s):** Permission from the instructor.**AUT 951 - Advanced Automotive Engine and Electronic Diagnostics****4.0 Credit(s)****Lecture 4****Lab 0**

Advanced Automotive Engine and Electronic Diagnostics provides instruction and engine mechanical diagnosis utilizing vacuum and compression testing. Students use conventional and advanced electronic methods. They use digital storage oscilloscopes to analyze electrical signals going to and coming from the powertrain control module. Students are shown how to use and practice using wiring diagrams to diagnose engine computer systems. Operating principles of computerized ignition systems is introduced.

**Aviation Maintenance****AVI 255 - FAA Part 107 Remote Pilot****3.0 Credit(s)****Lecture 3****Lab 0**

FAA Part 107 Remote Pilot covers aspects related to flying unmanned aircraft (drones). Upon completion of the course, students are prepared to take the FAA Part 107 Remote Pilot Certification Exam.

**Note(s):** Students must be at least 16 years old to take the FAA Part 107 Remote Pilot Certification Exam.**AVM 120 - Aviation Mechanics General I****7.0 Credit(s)****Lecture 4.50****Lab 7.50**

Aviation Mechanics General I covers the first part of the subject areas required for aviation maintenance technicians as outlined by the Federal Aviation Administration in Title 14 CFR Part 147. Subject areas are ground operation and servicing, aircraft drawings, cleaning and corrosion control, aircraft weight and balance, fluid lines and fittings, and aircraft materials and processes.

**AVM 140 - Aviation Mechanics General II****7.0 Credit(s)****Lecture 4.5****Lab 7.5**

Aviation Mechanics General II covers the last part of the subject areas required for aviation maintenance technicians as outlined by the Federal Aviation Administration in Title 14 CFR Part 147.

Subject areas are basic aviation physics, basic aircraft electricity, mechanics privileges and limitations, maintenance publications, and maintenance forms.

**AVM 181 - Aviation Airframe I****7.5 Credit(s)****Lecture 5****Lab 7.5**

Aviation Airframe I covers the subject areas of sheet metal and nonmetallic structures and welding. Students study the techniques and skills required to perform inspection, repair and the fabrication associated with the main structural components of an aircraft's airframe. Students gain the required knowledge of the tools and special tools that are needed in maintaining the structural integrity of the airframe. Students have hands-on experience in the various types of welding processes that are used in the repair of aircraft, and they learn the reasons for various repair techniques.

**AVM 182 - Aviation Airframe II****7.5 Credit(s)****Lecture 5****Lab 7.5**

Aviation Airframe II covers six subject areas: wood structures, aircraft coverings, aircraft finishes, assembly and rigging, fire protection systems, and aircraft fuel systems. Students gain knowledge in the inspection, identification and repair of wood structural members, fabric coverings, finish applications, finish defects, and registration markings. Students learn about the assembly and rigging of control systems for both helicopters and airplanes along with the inspection, troubleshooting, servicing and repair of such systems. Students examine different methods of detecting and extinguishing fires as well as the inspection, troubleshooting and repair of various fuel systems and components.

**AVM 185 - Aviation Airframe III****7.0 Credit(s)****Lecture 4.5****Lab 7.5**

Aviation Airframe III covers three of the FAA's required subject areas in the systems and components sections. They are aircraft electrical systems, hydraulic and pneumatic systems, and ice and rain control systems. The course explores in detail the inspection, checking, servicing, troubleshooting, and repair of the three systems.

**AVM 186 - Aviation Airframe IV****7.0 Credit(s)****Lecture 4.5****Lab 7.5**

Aviation Airframe IV finishes the airframe subject areas. This course covers the final six required subject areas and also includes a comprehensive airframe review and testing section that helps prepare students to take the FAA written, oral, and practical tests. The subject areas covered are: communication and navigation systems, aircraft instrument systems, cabin atmosphere control systems, aircraft landing gear systems, position and warning systems, and airframe inspection.

**AVM 191 - Aviation Powerplant I****7.0 Credit(s)****Lecture 4.50****Lab 7.50**

Aviation Powerplant I starts the powerplant systems and components subject areas with fuel metering systems, engine fuel systems, engine instrument systems, and propellers. The course focuses on the inspection, checking, servicing, troubleshooting, and repair of these systems. Students learn terminology and operational principles associated with the systems.

**AVM 192 - Aviation Powerplant II****7.5 Credit(s)****Lecture 5****Lab 7.5**

Aviation Powerplant II covers four systems and components including subject areas of engine lubrication systems, engine electrical systems, engine ignition and starting systems, and engine fire protection systems. In this course, students learn how to perform the inspection, servicing, checking, troubleshooting, and repair of the various components that make up the systems as well as the terminology used in the description and maintenance of the various systems.

**AVM 193 - Aviation Powerplant III****8.5 Credit(s)****Lecture 6.5****Lab 6**

Aviation Powerplant III encompasses the following subject areas: engine exhaust and reverser systems, engine cooling systems, induction and engine airflow systems, engine inspection, and one-half of reciprocating engines and one-third of turbine engines. This course discusses in detail the needs and operation of the covered systems. Aviation Powerplant III also emphasizes the various procedures and methods required to maintain the systems in proper condition. It introduces students to the theory and maintenance of reciprocating and turbine engines, including the inspection, checking, servicing, and repair of such engines and installation.

**AVM 194 - Aviation Powerplant IV****7.5 Credit(s)****Lecture 5****Lab 7.5**

Aviation Powerplant IV investigates the subject areas of unducted fans and auxiliary power units, completes the second half of the subject area of reciprocating engines, and finishes the last two-thirds of the subject area of turbine engines. This course also contains a comprehensive powerplant review and testing section which helps students prepare to take the FAA powerplant written, oral and practical exams for the issuance of a powerplant rating.

**Biology****BIO 105 - Introductory Biology****4.0 Credit(s)****Lecture 3****Lab 2**

Introductory Biology is designed for non-science majors or as a refresher course for those wishing to take higher-level biology courses. Topics include the characteristics of life; the molecular and cellular basis of life; cell division, photosynthesis and respiration; genetics, evolution and ecology. Laboratory work complements each topic of study.

**BIO 112 - General Biology I****4.0 Credit(s)****Lecture 3****Lab 2**

General Biology I is designed for science majors. Topics include an introduction to the chemical and cellular basis of life, cellular processes, heredity, and evolution. Laboratory work complements each topic of study.

**Prerequisite(s):** A grade of "C" or higher in high school biology or BIO 105 - Introductory Biology.

**BIO 113 - General Biology II****4.0 Credit(s)****Lecture 3****Lab 2**

General Biology II is designed for science majors. This class explores the diversity of life by focusing on characteristics in the four eukaryotic kingdoms and prokaryotes. Topics covered include taxonomy, structure, function, ecology and evolution. Laboratory exercises complement each topic.

**Prerequisite(s):** A grade of "C" or higher in BIO 112 - General Biology I.

**BIO 125 - Plant Biology****4.0 Credit(s)****Lecture 3****Lab 2**

Plant Biology is designed for non-science majors interested in plants and plant-like organisms. Topics include classification, plant structure and function, development, metabolism, and heredity. Laboratory work complements each topic of study.

**BIO 151 - Nutrition****3.0 Credit(s)****Lecture 3****Lab 0**

Nutrition is the study of basic nutrients and relationship to health, which includes the digestion, absorption, and metabolism of carbohydrates, proteins, and fats in the human body. Additional topics are dietary planning for all ages, dietary exchanges and other health related diets, physical fitness, stress management, and food habits involving ethnic groups.

**BIO 157 - Human Biology****4.0 Credit(s)****Lecture 3****Lab 2**

Human Biology is designed for non-science majors or as a prerequisite for higher-level anatomy and physiology courses. It focuses on the following areas: the molecular and cellular basis of human life; the integration of humans and the biosphere; the structure and function of human tissues, organs and organ systems; and the principles of genetics and human development. Laboratory work complements each topic of study.

**BIO 168 - Human Anatomy and Physiology I****4.0 Credit(s)****Lecture 3****Lab 2**

Human Anatomy and Physiology I covers the structure and function of the human body from the cellular level to organ systems. Topics at the cellular level include the fundamental basics of chemistry, cell structure and cellular metabolism, genetics, and histology. The organ systems studied include the skin and integumentary system, the skeletal and muscular systems, the nervous system, and the special senses. Laboratory work complements each topic of study.

**Prerequisite(s):** A grade of "C" or higher in BIO 157 - Human Biology, or a grade of "C" or higher in one year of high school anatomy and physiology earned within the last two years.

**BIO 173 - Human Anatomy and Physiology II****4.0 Credit(s)****Lecture 3****Lab 2**

Human Anatomy and Physiology II is a continuation of Human Anatomy and Physiology I. This course examines organ systems including the endocrine, cardiovascular, lymphatic, respiratory, urinary, digestive, and the reproductive systems. Other topics include the body's balance of water, electrolytes, and acids and bases; and an introduction to human growth and development. Laboratory work complements each topic of study.

**Prerequisite(s):** A grade of "C" or higher in BIO 168 - Human Anatomy and Physiology I.

**BIO 186 - Microbiology****4.0 Credit(s)****Lecture 3****Lab 2**

Microbiology is the study of microorganisms with special emphasis on the pathogens and the aspects of microbiology that directly affect humans. The course covers the fundamentals of microbiology, a survey of the microbial world, interactions between microbes and hosts, microorganisms and human disease, and environmental and applied microbiology. Laboratory work explores all aspects of microbiology, but emphasizes the culture, handling and identification of bacteria.

**Prerequisite(s):** A grade of "C" or higher in BIO 168 - Human Anatomy and Physiology I, BIO 112 - General Biology I, or CHM 166 - General Chemistry I.

**BIO 209 - Kinesiology****3.0 Credit(s)****Lecture 2****Lab 2****Internship 0**

Kinesiology explores the basics of biomechanical principles to human motion as they relate to skeletal and muscular systems, including nerve innervations and range of motion levers. Torque and gait are studied in relation to balance and normal body movement.

**Prerequisite(s):** A grade of "C" or higher in BIO 168 - Human Anatomy and Physiology I.

**Corequisite(s):** BIO 173 - Human Anatomy and Physiology II.

**BIO 211 - Pathophysiology****3.0 Credit(s)****Lecture 3****Lab 0**

Pathophysiology examines the etiology and processes of human disease. Content covers the altered structure and function of the body, prevalence, risk factors, signs and symptoms, diagnosis, prognosis, complications, and treatment options for selected diseases.

**Prerequisite(s):** A grade of "C" or higher in BIO 168 - Human Anatomy and Physiology I.

**Prerequisite(s)/Corequisite(s):** BIO 173 - Human Anatomy and Physiology II.

**BIO 908 - Cooperative Education****1.0 - 6.0 Credit(s)****Lecture 0****Lab 0****Co-Op 4 - 24**

Cooperative Education provides cooperative work experience related to the sciences. Work experience hours are arranged.

**BIO 927 - Honors Study****2.0 Credit(s)****Lecture 2****Lab 0**

Honors Study explores current scientific topics. In addition to other projects, students research, write, and present a biology review paper.

**Prerequisite(s):** Nomination by the science faculty and approval of the dean.

**Business****BUS 102 - Introduction to Business****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Business surveys American enterprise and examines the interrelated roles of accounting, economics, finance, management, and marketing as they affect the firm. Students view the firm from both its functional role and its social institutional role.

**BUS 105 - Accounting and Business Professional Development****1.0 Credit(s)****Lecture 1****Lab 0**

Accounting and Business Professional Development introduces students to career fields open to accounting and business majors. Business professionals present various areas of business, including topics in the areas of work attitudes, confidentiality, job promotion, opportunities, ethics, and employer/employee responsibilities.

**Note(s):** This course is offered on a pass/fail basis only.

**BUS 121 - Business Communications****3.0 Credit(s)****Lecture 3****Lab 0**

Business Communications develops the art of organizational communication for a business. It emphasizes practical applications in writing business letters, reports, resumes, and other organizational communications.

**BUS 130 - Introduction to Entrepreneurship****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Entrepreneurship emphasizes these processes: understanding how to find, analyze, and pursue an opportunity; understanding oneself and personality characteristics of the "entrepreneur"; and examining the environment for entrepreneurship. A case and experiential approach is used throughout.

**BUS 154 - E-business****3.0 Credit(s)****Lecture 3****Lab 0**

E-business covers the unique aspects of creating a business strategy in the e-business environment and focuses on the Internet as a medium for promotion and distribution. E-business discusses how traditional marketing and business arenas can be transformed in this environment.

**BUS 161 - Human Relations****3.0 Credit(s)****Lecture 3****Lab 0**

Human Relations inquires into the nature of human behavior in the workplace. Using the administrative viewpoint, it focuses on human motivation, leadership, organizational structure, and current topics in employment.

**BUS 185 - Business Law I****3.0 Credit(s)****Lecture 3****Lab 0**

Business Law I concentrates on the foundation of business transactions, contracts, and sales. Emphasis focuses on the Uniform Commercial Code where relevant.

**BUS 186 - Business Law II****3.0 Credit(s)****Lecture 3****Lab 0**

Business Law II explores a variety of topics essential to an understanding of the business environment: insurance, agency and employment, business organizations, commercial paper, property, secured transactions, and bankruptcy.

**BUS 210 - Business Statistics****3.0 Credit(s)****Lecture 3****Lab 0**

Business Statistics applies descriptive and inferential statistics to business problems. Topics include frequency distributions, histograms, measures of central tendency, dispersion, probability, the central limit theorem, confidence interval estimates, hypothesis testing, analysis of variance, correlation analysis, linear and multiple regression analysis, chi-squared test, time series and forecasting, and statistical quality control.

**Prerequisite(s):** MAT 157

**BUS 280 - Fundamentals of Lean Process Improvement****3.0 Credit(s)****Lecture 3****Lab 0**

Fundamentals of Lean Process Improvement focuses on learning and practicing Lean methods of minimizing waste, increasing efficiency and improving quality within organizations. This course provides basic understanding and practical applications of organization techniques, Lean mapping tools, streamlining work processes and problem-solving methodologies.

**BUS 908 - Cooperative Education****1.0 - 6.0 Credit(s)****Lecture 0****Lab 0****Co-Op 4 - 24**

Cooperative Education draws correlation between theory and practice in the student's area of specialization. Variable credit is granted, depending on individual circumstances.

**Prerequisite(s):** Permission from the instructor.**Business Computer Application****BCA 152 - Comprehensive Spreadsheets****3.0 Credit(s)****Lecture 3****Lab 0**

Comprehensive Spreadsheets deals with the command menu, functions, template design, printing, file handling, graphics, database features, and keystroke macros. Students should have some prior spreadsheet experience.

**Prerequisite(s):** [CSC 116 - Information Computing](#)**BCA 184 - Comprehensive Web Page Design Software****3.0 Credit(s)****Lecture 3****Lab 0**

Comprehensive Web page Design Software teaches students how to develop web pages. Basic design, construction, and maintenance of the web page are covered. Students learn how to set up a web page using current web page design software and tools.

**Chemistry****CHM 122 - Introduction to General Chemistry****4.0 Credit(s)****Lecture 3****Lab 3**

Introduction to General Chemistry is a one-semester course that covers the fundamentals of inorganic chemistry. Topics include the structure of the atom, properties and states of matter, nomenclature, chemical bonding, stoichiometry, gas laws, solutions, and acid-base chemistry. Laboratory experience provides hands-on exploration of the fundamentals of inorganic chemistry and reinforces lecture concepts. Laboratory is required.

**Prerequisite(s):** A grade of "C" or higher in one of the following: One year of high school algebra earned within the last two years, MAT 102 - Intermediate Algebra, or MAT 743 - Technical Math.**CHM 132 - Introduction to Organic and Biochemistry****4.0 Credit(s)****Lecture 3****Lab 3**

Introduction to Organic and Biochemistry covers selected principles of general, organic, and biochemistry for students of health sciences. Basic bonding, molecular structure, acid/base chemistry, and radiological effects are covered from general chemistry. It introduces functional groups, nomenclature, and some main reactions in organic chemistry. The biochemistry emphasizes structure and reactions of molecules in metabolism and the biosynthesis of carbohydrates, lipids and proteins. Additional topics are nucleic acids, protein synthesis, immunology, nutrition, and digestion. Laboratory work complements each topic of study.

**Prerequisite(s):** CHM 122 - Introduction to General Chemistry or a grade of "C" or higher in one year of high school chemistry earned within the last two years.**CHM 166 - General Chemistry I****5.0 Credit(s)****Lecture 3****Lab 4**

General Chemistry I, first of a two-semester sequence, covers the fundamentals of chemistry. Topics include: structure of the atom, chemical bonding, stoichiometry, and kinetic theory of matter as applied to gases, liquids, and solids. General Chemistry I Lab explores the fundamentals of chemistry, emphasizing laboratory technique, data collection and analysis, and technical writing. Laboratory work complements each topic of study.

**Prerequisite(s):** CHM 122 - Introduction to General Chemistry, or a grade of "C" or higher in one year of high school chemistry earned within the last two years, and one of the following: A grade of "C" or higher in two years of high school algebra or a grade of "C" or higher in Mat 102 - Intermediate Algebra.**CHM 176 - General Chemistry II****5.0 Credit(s)****Lecture 3****Lab 4**

General Chemistry II, second of a two-semester sequence, covers the fundamentals of chemistry. Topics studied include solutions, acid-base chemistry, kinetics, chemical equilibrium, thermodynamics, electrochemistry, and an introduction to organic chemistry. General Chemistry II Laboratory emphasizes data collection and analysis to explore the topics from lecture. Emphasis is placed on experiment design and technical writing. Laboratory work complements each topic of study.

**Prerequisite(s):** A grade of "C" or higher in CHM 166 - General Chemistry I.**CHM 263 - Organic Chemistry I****5.0 Credit(s)****Lecture 3****Lab 4**

Organic Chemistry I studies carbon skeletons of aliphatic hydrocarbons and organic functional groups. It emphasizes the nature of bonding, nomenclature, isomerism, and reactions. Laboratory work introduces techniques used in identifying organic compounds and typical reactions.

**Prerequisite(s):** CHM 176 - General Chemistry II.

**CHM 273 - Organic Chemistry II****5.0 Credit(s)****Lecture 3****Lab 4**

Organic Chemistry II continues the study of organic compounds. It emphasizes the nature of alkynes and aromatics and includes the study of organic groups such as esters, amides, amino acids, and phenols. Laboratory work covers the synthesis of organic compounds.

**Prerequisite(s):** CHM 263 - Organic Chemistry I.

**Computer Aided Drafting****CAD 129 - CAD I****3.0 Credit(s)****Lecture 2****Lab 2**

CAD I provides instruction in entry-level CAD (computer-aided design) skills. Students learn 2D and 3D representation of objects, and national and international standards for documentation. Students will use Siemens software and teamwork to create drawings. Parametric solid modeling will be introduced.

**Prerequisite(s)/Corequisite(s):** EGT 113 - Introduction to PLM

**CAD 139 - Introduction to CAD/CAM****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to CAD/CAM demonstrates the integration of Computer-Aided-Design (CAD) and Computer-Aided-Manufacturing (CAM). Students learn modern prototyping and machining methods, the use of specific software for converting 2D and 3D CAD drawing geometry directly into toolpath information used to drive numerically controlled turning and milling machines.

**CAD 197 - CAD 3D-NX****4.0 Credit(s)****Lecture 3****Lab 2**

CAD 3D-NX introduces basic (Unigraphics Solutions) NX® parametric based solid modeling techniques. Exercises include creating and editing solid models using primitive features, form features and sketches. Introduces master modeling technique of drawing creation and editing; file management in a team environment is emphasized.

**Prerequisite(s):** CAD 129 - CAD I.

**CAD 203 - Principles of Design****3.0 Credit(s)****Lecture 2****Lab 2**

Principles of Design emphasizes further development of geometric dimensioning and tolerancing techniques and the application of tolerances for functionality and manufacturability. Students use CAD software to create solid models, detail, and assembly drawings suitable for manufacturing production.

**Prerequisite(s):** CAD 197 - CAD 3D-NX

**CAD 222 - Advanced CAD 3D-NX****3.0 Credit(s)****Lecture 3****Lab 0**

Advanced CAD NX® explores areas of three-dimensional constructions and related features of the Unigraphics CAD system. Participants will construct 3-D models and perform model editing, use a 3-D coordinate system, create and apply surface techniques, and create 2-D drawings based on 3-D models. Students will also learn to transition data to others within the manufacturing process.

**Prerequisite(s):** CAD 197 - CAD 3D-NX

**CAD 236 - Design Problems****6.0 Credit(s)****Lecture 3****Lab 6**

Design Problems offers students the opportunity to use creativity in designing a specific product from scratch. The process begins with a basic concept as a solution to a problem and progresses through an analytical state, involving calculations and layout drawings. The project includes final assembly and detail drawing, as well as a bill of materials. Different failure modes, and design methods to avoid failure and meet functional requirements, are studied.

**Corequisite(s):** EGT 184 - Strength of Materials

**CAD 238 - Design Communications****3.0 Credit(s)****Lecture 2****Lab 2**

Design Communication teaches techniques to communicate the design ideas to stake holders. It covers reporting to the client via different graphic methods and perspectives. Students generate presentations, animations and assembly demonstrations. Students prepare data for production.

**Prerequisite(s):** CAD 197 - CAD 3D-NX.

**CAD 933 - Design Technology Internship****6.0 Credit(s)****Lecture 0****Lab 0****Internship 24**

Design Technology internship provides work experience related to the student's Design training. This course allows the student to integrate theory with practice in the student's area of specialization. Work experience hours are arranged.

**Prerequisite(s):** A grade of "C" or higher in all first-year Design Technology courses, including MAT 743 - Technical Math and MAT 750 - Technical Mathematics II, and permission from the instructor.

**Computer - Networking****NET 142 - Network Essentials****3.0 Credit(s)****Lecture 3****Lab 0**

Network Essentials introduces the networking field. The course focuses on network terminology and protocols, local area networks (LANs), wide-area networks (WANs), Open System Interconnection (OSI) models, cabling, cabling tools, routers, router programming, Ethernet, Internet Protocol (IP) addressing, and network standards. Instruction and training are provided in the proper care, maintenance, and use of networking software, tools, and equipment and all local, state, and federal safety, building, and environmental codes and regulations.

**NET 204 - Introduction to Networks****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Networks introduces the architecture, structure, functions, components and models of the Internet and other computer networks. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. Students build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes.

**NET 278 - Enterprise Networking, Security, and Automation****3.0 Credit(s)****Lecture 3****Lab 0**

Enterprise Networking, Security, and Automation describes the routers and switches using OSPF in point-to-point and multi-access networks. Students mitigate threats and enhance network security using access control lists and security best practices. Students understand virtualization, SDN, APIs and how configuration management tools enable network automation.

**Prerequisite(s):** NET 311 Switching, Routing, and Wireless Essentials**NET 311 - Switching, Routing, and Wireless Essentials****3.0 Credit(s)****Lecture 3****Lab 0**

Switching, Routing and Wireless Essentials describes the architecture, components, and operations of routers and switches in a small network. Students configure a router and a switch for basic functionality. Students configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, and single-area and multi-area OSPF, virtual LANS, wireless LANS, and inter-VLAN routing in both IPv4 and IPv6 networks, redundancy on a switched network using STP and EtherChannel.

**Prerequisite(s):** NET 204 Introduction to Networks**NET 313 - Windows Server****3.0 Credit(s)****Lecture 3****Lab 0**

Windows Server introduces the managing and maintaining of a Windows Server environment. Students learn how to install, configure, administer and support the primary services in the latest Windows Server operating system.

**Prerequisite(s):** CSC 121 - Operating Systems.**NET 343 - Windows Directory Services****3.0 Credit(s)****Lecture 3****Lab 0**

Windows Directory Services provides the knowledge and skills necessary to plan, analyze, optimize, and troubleshoot Microsoft Windows NT® Server network operating systems in an enterprise environment. The course includes how to set up, configure, use, and support Transmission Control Protocol/Internet Protocol (TCP/IP).

**Prerequisite(s):** NET 313 - Windows Server.**NET 418 - LINUX Administration****3.0 Credit(s)****Lecture 3****Lab 0**

LINUX Administration introduces the techniques necessary to create and manage users, groups, computers, and firewalls that make up a LINUX network. Students install and configure a secure LINUX system, applications, and user configuration files.

**Prerequisite(s):** CSC 121 - Operating Systems.**NET 495 - Virtual Infrastructure****3.0 Credit(s)****Lecture 3****Lab 0**

Virtual Infrastructure introduces students to the concepts and capabilities of virtual architecture with a focus on the installation, configuration and management of a VMware virtual infrastructure. This course covers fundamentals of virtual network design and implementation, fundamentals of storage area networks, virtual switching, virtual system management, and engineering for high availability.

**NET 612 - Fundamentals of Network Security****3.0 Credit(s)****Lecture 3****Lab 0**

Fundamentals of Network Security provides a fundamental understanding of network security principles and implementation. Students examine the technologies used and principles involved in creating a secure computer networking environment.

**Prerequisite(s):** CSC 121 - Operating Systems.**NET 785 - Fundamentals of Desktop Support****3.0 Credit(s)****Lecture 3****Lab 0**

Fundamentals of Desktop Support introduces the concepts of supporting computers and computer users as a career. Students improve proficiency in providing computer support by troubleshooting real-life scenarios including specification/management considerations and customer service skills. Student activities may include upgrading computers and computer peripherals for non-profit organizations. Students will use troubleshooting tools, the Microsoft Knowledge Base and help desk software.

**NET 790 - PC Support I****3.0 Credit(s)****Lecture 3****Lab 0**

PC Support I introduces computer hardware and software concepts necessary for an entry-level computer repair technician. Students learn to troubleshoot, repair, upgrade, and maintain PC hardware and software.

**NET 795 - Desktop Support Practicum****1.0 Credit(s)****Lecture 0****Lab 4**

Desktop Support Practicum puts the skills learned in the classroom to work as they help staff the Reiver Tech Team's student run help desk. Students learn to provide positive customer service while repairing student and staff personal computers.

**Corequisite(s):** NET 785 - Fundamentals of Desktop Support.

**NET 810 - Computer Internship****1.0 - 8.0 Credit(s)****Lecture 0****Lab 0****Internship 4-32**

Computer Internship provides work experience related to the student's computer training. This course allows the student to integrate theory with practice in the student's area of specialization. Work experience hours are arranged.

**Prerequisite(s):** Permission from the instructor.

**Computer Programming****CIS 121 - Introduction to Programming Logic****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Programming Logic covers the basic concepts of flowcharting techniques and introduces program analysis. Students also analyze and flowchart a set of modular programs.

**CIS 127 - Introduction to Programming****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Programming uses programming languages to teach the basics of good programming and algorithm development, with emphasis on logic, functions, debugging and graphical user interfaces.

**CIS 134 - Web Design****3.0 Credit(s)****Lecture 3****Lab 0**

Web Design encompasses the design, creation, and maintenance of web pages and websites. Students learn how to critically evaluate website quality, create and maintain quality web pages, assess web design standards, and manipulate images. The course progresses from introductory work on web design to a culminating project in which students design and develop comprehensive websites and publish to a web server.

**Prerequisite(s):** CIS 207 - Fundamentals of Web Programming.

**CIS 139 - Programming I****3.0 Credit(s)****Lecture 3****Lab 0**

Programming I is a beginning applied programming course that uses object-oriented programming. The course emphasizes the basics of good programming techniques and style. Students will practice implementing and debugging programs. Programs include interactive data types, error handling and web forms.

**Prerequisite(s):** CIS 127 - Introduction to Programming or CIS 171 - Java.

**CIS 144 - Programming II****3.0 Credit(s)****Lecture 3****Lab 0**

Programming II covers the development of interactive data-driven web-based applications using the .NET environment. Topics include web controls, custom controls, data connections, application and session state, application cache, security, accessibility, and page design. (3/0)

**Prerequisite(s):** CIS 139 - Programming I.

**CIS 158 - Web e-Business****3.0 Credit(s)****Lecture 3****Lab 0**

Web e-Business covers the development of ecommerce websites that are able to sell products and services. Students will learn to create catalogs, shopping carts and processing of multiple payment options.

**Prerequisite(s):** CIS 215 - Server Side Web Programming

**CIS 171 - Java****3.0 Credit(s)****Lecture 3****Lab 0**

Java examines the Java programming language. Students explore interactive web application development using object-oriented development techniques as well as Java language constructs, run-time libraries, and graphics libraries.

**CIS 175 - Java II****3.0 Credit(s)****Lecture 3****Lab 0**

Java II covers advanced client-server application development constructs. Advanced GUI techniques, exception-handlers, database connectivity, and debugging are topics covered. Students will create programs using inheritance and polymorphism concepts.

**Prerequisite(s):** CIS 171 - Java.

**CIS 187 - ASP.NET MVC with C#****3.0 Credit(s)****Lecture 3****Lab 0**

ASP.NET MVC with C# provides students with hands-on experience using Visual Studio to create dynamic web applications using the ASP.NET MVC Framework and C#. Students learn how to leverage the power of the Model-View-Controller pattern to separate the layers of a web site into input handling (model), user interface (view) and business/data logic (controller). Students will learn the benefits of using the MVC pattern for web site development while creating model, views and controllers.

**Prerequisite(s):** CIS-139 Programming I

**CIS 207 - Fundamentals of Web Programming****3.0 Credit(s)****Lecture 3****Lab 0**

Fundamentals of Web Programming teaches how to create, design, publish, and maintain a web site. Students learn HTML, DHTML and CSS using web site creation software. Design considerations such as usability, download time and aesthetics are emphasized.

**CIS 213 - Advanced Client Side Scripting****3.0 Credit(s)****Lecture 3****Lab 0**

Advanced Client Side Scripting teaches current technologies for scripting the web client. Students will create scripts, dashboards and widgets.

**Prerequisite(s):** CIS 207 Fundamentals of Web Programming

**CIS 215 - Server Side Web Programming****3.0 Credit(s)****Lecture 3****Lab 0**

Server Side Web Programming introduces several of the most common server-sided scripting languages used in business today. The programming constructs used in these languages are covered. Scripts are designed, programmed, tested, and debugged.

**Prerequisite(s):** CIS 213 - Advanced Client Side Scripting and CIS 134 - Web Design.

**CIS 227 - Advanced Web Design****3.0 Credit(s)****Lecture 3****Lab 0**

Advanced Web Design introduces students to more advanced skills by using color and typography creatively and how to achieve effective web page layout by incorporating principles and standards of the web design process in the web environment. Students explore advanced web production skills such as layers and table-free layouts, templates, reusable elements, external Cascading Style Sheets, XML, automation of dynamic HTML, and site management. Students also explore complex websites with more advanced design concepts in web site creation, such as efficient navigation design, portability and accessibility, separating content from presentation for easy site updating and maintenance, planning interactivity, and search engine optimization.

**Prerequisite(s):** CIS 134 - Web Design and CIS 213 - Advanced Client Side Scripting.

**CIS 332 - Database and SQL****3.0 Credit(s)****Lecture 3****Lab 0**

Database and SQL introduces students to the techniques and methodologies needed to construct large relational databases. It covers Data Modeling, System Query Language (SQL) and Application Programming Interfaces (API).

**CIS 601 - Introduction to Cryptography****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Cryptography provides an introduction to the fundamental components of encryption. Topics include the history of cryptography, public key and private key systems, hashing, and digital signatures. Students study the development of the Advanced Encryption Standard, the use and functionality of Pretty Good Privacy, and the Secure Socket Layer.

**CIS 602 - Cyber Investigations and Forensics****3.0 Credit(s)****Lecture 2****Lab 2**

Cyber Investigations and Forensics examines basic methods of investigation, information acquisition, and management of Internet and computer forensic cases. Topics include record-searching, note taking and report writing, and using scientific methodology in cyber investigations. Students apply the basic tools and techniques for forensic analysis of computers, networks systems, and mobile devices.

**CIS 616 - Network and Information Security Basics****3.0 Credit(s)****Lecture 3****Lab 0**

Network and Information Security Basics is a survey of network and information security. Topics include threat assessment, risk management, establishing and managing network security policy, user training, security models, objectives, architectures, and the investigative process. It examines information security topics, such as constitutional issues, applicable laws, right and rules of evidence, confidentiality, integrity, availability, accountability, and auditing.

**CIS 617 - Information Systems, Forensics, and Legal Topics****3.0 Credit(s)****Lecture 3****Lab 0**

Information Systems, Forensics, and Legal Topics presents computer forensics concepts, tools, and data analysis. Students explore civil and common law issues that apply to information systems and gain practical experience in evidence detection and preservation. Students learn the concepts of establishing communications with company leadership and investigative agencies.

**CIS 619 - Network Attacks, Intrusions, and Penetration Testing****3.0 Credit(s)****Lecture 2****Lab 2**

Network Attacks, Intrusions, and Penetration Testing covers attack and intrusion methods and how to defend against them. By studying network security from the point of view of the cracker and hacker, students get hands-on exposure to penetration testing and intrusion detection systems. Students investigate methods used to circumvent systems, malicious code and its impact on systems, and defense against attacks.

**CIS 621 - Assessments and Audits****3.0 Credit(s)****Lecture 3****Lab 0**

Assessments and Audits introduces students to the principles of risk assessment, vulnerability analysis, and auditing and how they are used to evaluate the effectiveness of information security controls. Students develop an understanding of threat and asset identification, countermeasures and safeguards, acceptable risks, and vulnerabilities. The course introduces auditing concepts of technical, physical, and administrative controls and discusses how to measure these controls for effectiveness.

**CIS 623 - Boundary Protection****3.0 Credit(s)****Lecture 2****Lab 2**

Boundary Protection introduces the various methodologies for defending a network. Students focus on the concepts of firewalls, including packet filtering, proxy firewalls, application gateways, circuit gateways, and stateful inspection. Students delve into security planning, well-designed security policies, and integrated support from anti-virus software, intrusion detection systems, and related tools. This course explores firewalls in the context of these critical elements, providing an overview that focuses on both managerial and technical aspects of security.

**CIS 625 - Information Assurance Fundamentals****3.0 Credit(s)****Lecture 3****Lab 0**

Information Assurance Fundamentals topics include leading practices for information security and assurance governance and risk management. Students focus on network architecture and design of systems to maximize assurance. Students concentrate on business continuity, disaster recovery planning, resiliency, data privacy, risks, and laws. Student learn to understand legal, investigation, information-security incident response and management processes and developing secure application software.

**CIS 627 - Building Secure Environments****3.0 Credit(s)****Lecture 3****Lab 0**

Building Secure Environments examines a variety of communication protocols, the client/server applications that use them, and vulnerabilities. Students explore methods to mitigate vulnerabilities of Internet/Intranet applications while maintaining Web servers and workstations usability. Discussion centers on best practices and students use a variety of methods to build, test, and defend all computers in the enterprise environment.

**CIS 628 - Information Warfare****3.0 Credit(s)****Lecture 3****Lab 0**

Information Warfare is designed as an overview of the fundamental processes associated with waging war in an electronic age. Topics include strategic planning and tactical analysis for target identification, reconnaissance, and tool selection. The course focuses on individual, corporate and national forms of warfare.

**CIS 629 - Security Capstone****3.0 Credit(s)****Lecture 2****Lab 2**

Security Capstone provides realistic, hands-on, scenario-based environments in which to combine and implement concepts and tools covered in previous courses. Students conduct risk analyses and threat assessments, and they complete security plans that include auditing, monitoring, incident response, forensics, and penetration testing.

**Prerequisite(s):** Permission from the instructor

**CIS 780 - Computer Projects****3.0 Credit(s)****Lecture 3****Lab 0**

Computer Projects involves systems from inception to completion. Projects revolve around courses taken in the curriculum with emphasis on systems, hardware, software, languages and databases. (3/0-3)

**Prerequisite(s):** CIS 215- Server Side Web Programming, or NET 311- Switching, Routing, and Wireless Essentials.

**Computer Science****CSC 110 - Introduction to Computers****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Computers consists of a hands-on introduction to microcomputer hardware, operating systems and application software. Students enter, modify and manipulate data with word processing, presentation, spreadsheet, and database programs. Students should be familiar with the standard keyboard.

**CSC 114 - Introduction to Information Technology****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Information Technology examines computer hardware and software, computer networking, and data analysis and communication. Business case problems are used to introduce students to the general concepts of computers and information technology. Students work extensively in teams to collaborate and design solutions to business case problems using case-based problem methodology.

**CSC 116 - Information Computing****3.0 Credit(s)****Lecture 3****Lab 0**

Information Computing presents the basic concepts of information systems and computer literacy. The course incorporates theory as well as hands-on practice which focuses on spreadsheets and database management systems (DBMS).

**CSC 121 - Operating Systems****3.0 Credit(s)****Lecture 3****Lab 0**

Operating Systems is a hands-on course introducing the concepts of operating systems, including process, memory and storage management, protection, security and distributed systems. Students learn basic command line tools, scripting, file management and commands for several different operating systems.

**Construction****CON 114 - Blueprint Reading****3.0 Credit(s)****Lecture 3****Lab 0**

Blueprint Reading presents an introduction to the fundamentals of blueprint reading. Students get hands-on experience with residential and commercial drawings, and specifications. Students are introduced to the symbols, lines, schedules, specifications, and how they are associated with blueprints.

**CON 115 - Commercial Print Reading****3.0 Credit(s)****Lecture 3****Lab 0**

Commercial Print Reading provides introductory skills using electronic plans, programs, and devices in the interpretation of blueprints and construction drawings. Students work with computer software to use digital drawings.

**Prerequisite(s):** CON 114 - Blueprint Reading**CON 118 - Introduction to Sustainable Construction****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Sustainable Construction provides students with a working knowledge of sustainable building systems and impact on the construction industry. Students study sustainable principles, materials, methods, and impact on the environment.

**CON 119 - Construction Materials and Inspection****3.0 Credit(s)****Lecture 3****Lab 0**

Construction Materials and Inspection focuses on construction materials of the past, present, and future. The course emphasizes the selection, application, and laboratory testing of construction materials. Students become familiar with aspects of a construction inspector's duties, responsibilities, and record keeping.

**CON 170 - Building Construction Techniques I****6.0 Credit(s)****Lecture 0****Lab 12**

Building Construction Techniques I provides the practical application of selected building techniques. Students learn construction techniques in wall and ceiling systems, stair construction, and interior finishing.

**Corequisite(s):** CON 180 - Principles of Building Construction I**CON 171 - Building Construction Techniques II****6.0 Credit(s)****Lecture 0****Lab 12**

Building Construction Techniques II provides practical application of selected construction techniques. This course covers the basics of concrete forming and placement, block laying, door and window installation, advanced floor, stair framing, roofing, and siding.

**Prerequisite(s):** CON 170 - Building Construction Techniques I and CON 180 - Principles of Building Construction I**Corequisite(s):** CON 181 - Principles of Building Construction II**CON 180 - Principles of Building Construction I****3.0 Credit(s)****Lecture 3****Lab 0**

Principles of Building Construction I provides an introduction to the building construction process. It emphasizes construction safety issues and building code requirements; characteristics, use, and selection of building materials; and selection, care, and use of hand and power tools.

**Corequisite(s):** CON 170 - Building Construction Techniques I.**CON 181 - Principles of Building Construction II****3.0 Credit(s)****Lecture 3****Lab 0**

Principles of Building Construction II provides fundamental theory of advanced construction techniques. This course explains floor systems, wall and ceiling framing, stair construction, interior finishing techniques, door and window selection, installation, and concrete forming and placement.

**Prerequisite(s):** CON 170 - Building Construction Techniques I and CON 180 - Principles of Building Construction**Corequisite(s):** CON 171 - Building Construction Techniques II**CON 244 - Related Trade Applications****3.0 Credit(s)****Lecture 3****Lab 0**

Related Trade Applications presents an introduction to the principles of HVAC, plumbing, and electrical systems in construction. This course addresses basic theory, related codes, techniques, and applications.

**CON 250 - Principles of Commercial Construction I****3.0 Credit(s)****Lecture 3****Lab 0**

Principles of Commercial Construction I provides fundamental theory in commercial construction. Students learn advanced skills in concrete (flat form work and tilt-up construction) and site preparation.

**CON 251 - Commercial Construction Techniques I****6.0 Credit(s)****Lecture 0****Lab 18**

Commercial Construction Techniques I provides practical applications of selected commercial construction techniques. Students learn construction techniques in concrete, flat work, form work, tilt-up construction, site preparation, and site layout.

**CON 253 - Principles of Commercial Construction II****3.0 Credit(s)****Lecture 3****Lab 0**

Principles of Commercial Construction II provides fundamental theory in commercial construction. Students learn advanced skills in superstructure construction (i.e., steel stud framing practices and iron work), exterior finishes and roofing components.

**CON 254 - Commercial Construction Techniques II****6.0 Credit(s)****Lecture 0****Lab 18**

Commercial Construction Techniques II provides practical applications of selected commercial construction techniques. Students learn construction techniques in superstructure construction, exterior finishes, and roofing components.

**CON 266 - Construction Safety****3.0 Credit(s)****Lecture 3****Lab 0**

construction Safety provides students with the requirements and expectations of safety for the commercial and residential construction industry. Students learn the elements of an occupational safety program, safe working environment, personnel protection and welfare, occupational health hazards, safety laws and legal aspects of safety. Students receive an OSHA certification upon successful completion of this safety course.

**CON 325 - Estimating****3.0 Credit(s)****Lecture 3****Lab 0**

Estimating introduces students to the principles and techniques of estimating construction costs, with emphasis on quantity take-off, pricing elements of work, labor, equipment, material, subcontractor cost, and indirect costs. Spreadsheets and scheduling software will be used for computerized estimating.

**CON 348 - Supervision and Leadership in Building Construction****3.0 Credit(s)****Lecture 3****Lab 0**

Supervision and Leadership in Building Construction teaches the skills needed by construction supervisors in management. Students participate in seminar-style projects conducted by industry professionals.

**CON 425 - Internship****4.0 Credit(s)****Lecture 0****Lab 0****Internship 16**

Internship allows students to practice building trades skills and train at an off-campus construction site.

**Prerequisite(s):** CON 171 - Building Construction Techniques II and CON 181 - Principles of Building Construction II

**CON 426 - Internship II****4.0 Credit(s)****Lecture 0****Lab 0****Internship 16**

Internship II allows students to practice advanced construction skills and techniques from industry professionals.

**Prerequisite(s):** CON 425 - Internship

**Construction Technology****CET 139 - Introduction to CAD/CAM****3 Credit(s)****Lecture 3****Lab 0**

Introduction to CAD/CAM demonstrates the integration of Computer-Aided-Design (CAD) and Computer-Aided- Manufacturing (CAM). students learn modern prototyping and methods for multiple industries; the use of specific software for converting 2D and 3D CAD drawing geometry directly into toolpath information used to drive numerically controlled turning and milling machines and for design and detailing structural drawings.

**CET 160 - Surveying****3.0 Credit(s)****Lecture 2****Lab 2**

Surveying provides students fundamental knowledge of surveying techniques used in construction and civil engineering. Topics include introduction to surveying instruments and equipment, measurement of distances and angles, determining elevation, note keeping, traversing, triangulation, mapping, and the researching of monuments and benchmarks.

**CET 208 - Technical Drafting and CAD****4.0 Credit(s)****Lecture 3****Lab 2**

Technical Drafting and CAD introduces students to hands-on technical drawing and computer-aided design. Students learn manual drawings and plot and edit CAD drawings in multiple software programs utilized by industry that create two-dimensional engineering CAD drawings.

**CET 233 - Fundamentals of GPS and GIS****3.0 Credit(s)****Lecture 3****Lab 0**

Fundamentals of GPS and GIS provides students the processes of Global Positioning Systems (GPS) including technical aspects of GPS satellites, differential corrections and hardware. Students discuss and demonstrate mapping and data collection. Processes and applications of Geographic Information Systems (GIS) introduce students to file formats, database management, spatial analysis and manipulation of data.

**CET 240 - Soils and Erosion Control****2.0 Credit(s)****Lecture 1****Lab 2**

Soils and Erosion Control teaches students concepts of geology and engineering properties including soil type, index properties, soil classification, stress and strain, soil compaction and erosion control.

**Criminal Justice****CRJ 100 - Introduction to Criminal Justice****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Criminal Justice introduces the agencies and processes involved in the apprehension, conviction, and punishment of criminal offenders. Topics include law and the Constitution, the purpose of law enforcement, the role of the police officer, federal and state courts, penal institutions, probation and parole in present day life.

**CRJ 111 - Police and Society****3.0 Credit(s)****Lecture 3****Lab 0**

Police and Society provides an overview of the role and activities of police in American society. Students examine the origins of policing, the nature of police organization, work, and personality as well as the patterns of relations between police and the public. Topics include characteristics of the peace officer, police subculture, corruption, recruitment, and legal aspects of policing, such as search and seizure.

**CRJ 120 - Introduction to Corrections****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Corrections examines the history, philosophy, and evolution of the American correctional process. Topics include the history of punishment, jail and prison systems, community-based corrections, and capital punishment.

**CRJ 130 - Criminal Law****3.0 Credit(s)****Lecture 3****Lab 0**

Criminal Law examines the means by which society attempts to use criminal law to prevent harm to society. It examines the acts that are declared criminal and the punishment for committing those acts, as well as current substantive criminal law, English common law, and the United States Constitution. Topics include crimes against the person, such as homicide; crimes against property and habitation, such as burglary; and crimes against public order and morals, such as prostitution. Students also examine defenses against prosecution, such as insanity and entrapment.

**CRJ 133 - Constitutional Criminal Procedure****3.0 Credit(s)****Lecture 3****Lab 0**

Constitutional Criminal Procedure examines legal aspects of investigative and arrest processes as well as rules governing the admissibility of evidence in court. It focuses primarily on police and correctional due process, application of the law, and civil liability concerns. Topics include search and seizure, arrest and interrogation, revocation and probation and parole, probable cause, and other timely issues.

**CRJ 142 - Criminalistics****3.0 Credit(s)****Lecture 3****Lab 0**

Criminalistics builds on the knowledge gained from Introduction to Forensic Investigation. This course examines the following topics in more depth and detail: the crime laboratory, establishing personal identity, trace evidence, physiological evidence, impression evidence, firearm evidence, and evidence processing.

**Prerequisite(s):** CRJ 160 - Introduction to Forensic Investigation.

**CRJ 160 - Introduction to Forensic Investigation****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Forensic Investigation introduces various disciplines and techniques in forensic investigation. Topics included are Forensic Anthropology, Forensic Odontology, Forensic Entomology, Forensic Serology, and Criminalistics.

**CRJ 240 - Criminal Investigation****3.0 Credit(s)****Lecture 3****Lab 0**

Criminal Investigation covers the basic techniques and procedures utilized in conducting general criminal investigations. Topics include interviews & interrogations, surveillance, use of informants, undercover investigations and more.

**Prerequisite(s):** CRJ 100 - Introduction to Criminal Justice.

**CRJ 258 - Ethical Issues in Criminal Justice****3.0 Credit(s)****Lecture 3****Lab 0**

Ethical Issues in Criminal Justice introduces the student to ethical concepts, foundations, dilemmas, and applications, as applied to the police, courts, and correctional components of the Criminal Justice system.

**Prerequisite(s):** CRJ 100 - Introduction to Criminal Justice.

**CRJ 260 - Medicolegal Death Investigation****3.0 Credit(s)****Lecture 3****Lab 0**

Medicolegal Death Investigation continues the study of forensic investigation and crime scenes. This course examines the topics of medicolegal investigative systems, cause and manner of death, autopsy procedures and protocol, forensic medicine, crime scene reconstruction, and advanced forensic investigative techniques.

**Prerequisite(s):** CRJ 160 - Introduction to Forensic Investigation and CRJ 142 - Criminalistics.

**CRJ 290 - Criminal Justice Cooperative Education****3.0 Credit(s)****Lecture 0****Lab 0****Co-Op 4-24**

Criminal Justice Cooperative Education provides cooperative work experience related to criminal justice. Work experience hours are arranged.

**Prerequisite(s):** Permission from the instructor.

**CRJ 291 - Forensic Investigation Cooperative Education****3.0 Credit(s)****Lecture 0****Lab 0****Co-Op 4-24**

Forensic Investigation Cooperative Education provides students with work experience related to career goals. Cooperative Education hours are arranged.

**Prerequisite(s):** Permission from the instructor.

**Dance****DAN 105 - Dance I****2.0 Credit(s)****Lecture 0****Lab 4**

Dance I focuses on posture, balance, coordination, rhythm, and artistic movement. Students learn proper warm-up, stretches, isolations, across-floor progressions, and combinations. Students study jazz and tap techniques and terminology through the lens of choreography for musical theater.

**Prerequisite(s):** Permission from the instructor.

**DAN 106 - Dance II****2.0 Credit(s)****Lecture 0****Lab 4**

Dance II continues the exploration of dance techniques introduced in Dance I. Students practice proper warm-ups, stretches, isolations, across-floor progressions, and combinations. Students practice increasingly complex dance combinations using advanced patterning. Students also perform progressing tap steps to traditional tap rhythms.

**Prerequisite(s):** Obtain instructor permission.

**DAN 107 - Dance III****2.0 Credit(s)****Lecture 0****Lab 4**

Dance III builds on proper dance techniques from previous courses while exploring various dance styles used in Broadway productions. Lessons are based on the Broadway-style jazz movement. Students practice proper warm-ups, stretches, isolations, across-floor progressions, and combinations. Emphasis is on developing performance skills such as connecting with the audience and telling a story through dance and facial expressions. Students learn how to choreograph.

**Prerequisite(s):** Obtain instructor permission.

**DAN 115 - Hip Hop and Modern Dance****2.0 Credit(s)****Lecture 0****Lab 2**

Hip Hop and Modern Dance borrows techniques from ballet, jazz, social dances, and 20-century modern dance. Student dancers are encouraged to perform with versatile expressions to portray a wide array of movement styles and emotion. Instruction focuses on spatial and body awareness, use of body weight, floor work, leaps, turns, the efficiency of muscle usage, and safe body alignment. (0/2-2)

**Prerequisite(s):** Permission from the instructor.

**Dental Assistant****DEA 253 - Dental Science I****4.0 Credit(s)****Lecture 4****Lab 0**

Dental Science I is the introduction to the various sciences necessary for the dental assistant, including microbiology, pathology, dental caries, nutrition, preventative dentistry and dental anatomy.

**DEA 263 - Dental Science II****2.0 Credit(s)****Lecture 2****Lab 0**

Dental Science II is a continuation of Dental Science I. Topics include pharmacology from a dental perspective, dental emergencies, anesthesia, and ethical foundations.

**DEA 312 - Dental Radiography I****3.0 Credit(s)****Lecture 2****Lab 2**

Dental Radiography I introduces the history, characteristics, and measurement of radiation, and its effects on biological structures. Students receive training in the use of x-ray equipment and processing techniques in the production of diagnostic radiographs. Digital radiography is introduced, as well as paralleling technique, and the importance of radiation protection and infection control.

**DEA 321 - Dental Radiography II****2.0 Credit(s)****Lecture 1****Lab 2**

Dental Radiography II is a continuation of Dental Radiography I. Students receive training in the bisecting technique, intraoral and extraoral procedures, use of imaging in the detection of dental caries, interpretation of periodontal disease, and the recognition of radiographic errors and corrections.

**DEA 403 - Dental Materials****3.0 Credit(s)****Lecture 1****Lab 0/6**

Dental Materials examines the theory of materials utilized at chairside and in chairside-related procedures. Practical application includes preparing impression materials, restorative materials, models, custom trays, occlusal registrations, and temporary restorations.

**DEA 502 - Dental Assisting Principles****4.0 Credit(s)****Lecture 3****Lab 4**

Dental Assisting Principles provides techniques in four-handed dentistry, knowledge of general dental armamentarium, OSHA compliance, infection control protocol, and legal intraoral functions.

**DEA 582 - Dental Assisting Experience I****2.0 Credit(s)****Lecture 0****Lab 0/6**

Dental Assisting Experience I provides experience in a clinical setting. Emphasis centers on chairside assisting of general dentistry with scheduled rotations through the dental specialties.

**Prerequisite(s):** DEA 502 - Dental Assisting Principles and DEA 403 - Dental Materials.

**DEA 585 - Dental Assisting Experience II****5.0 Credit(s)****Lecture 0****Lab 0/15**

Dental Assisting Experience II offers additional experience in the dental office setting. The students' role increases in chairside assisting of general dentistry. A specialty rotation is recommended.

**DEA 602 - Dental Specialties****4.5 Credit(s)****Lecture 4****Lab 2**

Dental Specialties emphasizes competence in coronal polish and fluoride application and also develops a foundation in the following specialty areas: periodontics, oral maxillofacial surgery, endodontics, orthodontics, and pediatric dentistry.

**Prerequisite(s):** DEA 502 - Dental Assisting Principles.

**DEA 706 - Procedures for the Dental Office****2.5 Credit(s)****Lecture 2****Lab 1.5**

Procedures for the Dental Office introduces office receptionist responsibilities. The course includes resume writing, interviewing techniques, record keeping, insurance forms, telephone techniques, and appointment making.

**DEA 933 - Internship Seminar****1.0 Credit(s)****Lecture 1****Lab 0**

Internship Seminar emphasizes group discussion and individual conferences on clinical experiences. The course includes preparation for the National Board examination.

**Prerequisite(s):** DEA 582 - Dental Assisting Experience I.

**Dental Hygiene****DHY 114 - Dental Hygiene Anatomical Sciences****4.0 Credit(s)****Lecture 4****Lab 0**

Dental Hygiene Anatomical Sciences deals with the fundamental study of head and neck anatomy, oral anatomy, tooth morphology, functions of the teeth, individual tooth identification, and physiology of occlusion. Instruction emphasizes dental nomenclature and the anatomy of the teeth and surrounding structures.

**Prerequisite(s):** BIO 168 - Human Anatomy and Physiology I and BIO 173 - Human Anatomy and Physiology II.

**DHY 118 - Oral Histology and Embryology****1.0 Credit(s)****Lecture 1****Lab 0**

Oral Histology and Embryology presents the fundamentals of oral histology and embryology of facial structure and dental tissues.

**Prerequisite(s):** BIO 168 - Human Anatomy and Physiology I and BIO 173 - Human Anatomy and Physiology II.

**DHY 132 - Dental Pharmacology****3.0 Credit(s)****Lecture 3****Lab 0**

Dental Pharmacology studies drugs and actions on living tissues. This course includes the drugs used as an aid in the diagnosis, treatment, and prevention of disease or to control or improve any physiological or pathological condition.

**Prerequisite(s):** BIO 168 - Human Anatomy and Physiology I, BIO 173 - Human Anatomy and Physiology II, and CHM 132 - Introduction to Organic and Biochemistry.

**DHY 141 - General and Oral Pathology****3.0 Credit(s)****Lecture 3****Lab 0**

General and Oral Pathology presents the basic concepts of the disease process and the oral manifestations of inflammation, degenerative changes, neoplasms, and developmental anomalies of the oral cavity.

**Prerequisite(s):** DHY 114 - Dental Hygiene Anatomical Sciences.

**DHY 153 - Dental Emergencies****1.0 Credit(s)****Lecture 1****Lab 0**

Dental Emergencies examines elements of dental hygiene care as they relate to the treatment planning of special patient and medical emergencies in the dental office. A major portion of the course deals with the prevention, recognition and management of medical emergencies which occur in the dental office with specific emphasis on systemic disease processes.

**DHY 155 - Radiology****2.0 Credit(s)****Lecture 2****Lab 0**

Radiology offers an introduction to scientific principles of oral radiography including production and absorption of radiation, x-ray unit function, imaging systems, quality assurance, radiation biology, and radiographic interpretation.

**DHY 157 - Radiology Lab****1.0 Credit(s)****Lecture 0****Lab 3**

Radiology lab experiences develop competence in exposing, processing, mounting, critically evaluating and interpreting dental radiographs.

**DHY 174 - Principles of Dental Hygiene****5.0 Credit(s)****Lecture 3****Lab 6**

Principles of Dental Hygiene introduces basic principles of clinical dental hygiene. The etiology of deposits and the effect on oral tissue and the theory and techniques of instrumentation in removal of deposits are emphasized in the lab portion.

**DHY 183 - Dental Hygiene I Theory****2.0 Credit(s)****Lecture 2****Lab 0**

Dental Hygiene I Theory continues the instrumentation techniques provided via clinical experience in oral prophylaxis techniques. Emphasis centers on comprehensive patient care on the simple patient classifications including patient assessment, treatment planning, and patients with special needs.

**DHY 184 - Clinical Dental Hygiene I****3.0 Credit(s)****Lecture 0****Lab 12**

Clinical Dental Hygiene I continues the instrumentation techniques provided via clinical experience in oral prophylaxis techniques, application of preventive therapies, and radiographic skills to beginner level.

**DHY 211 - Periodontology****2.0 Credit(s)****Lecture 2****Lab 0**

Periodontology provides an in-depth study of the pathogenesis of periodontal disease. It presents the clinical characteristics, histopathology, etiology, and risk factors of periodontal diseases. Special emphasis centers on the role of the immune system in the initiation and progression of periodontal disease.

**Prerequisite(s):** BIO 186 - Microbiology.

**DHY 213 - Periodontology II****1.0 Credit(s)****Lecture 1****Lab 0**

Periodontology II builds on the knowledge base acquired in Periodontology. Based on individualized patient needs, the student explores the rationale and clinical indications of surgical techniques, implant maintenance as well as new products within the field of periodontics.

**Prerequisite(s):** DHY 211 - Periodontology.

**DHY 226 - Biomaterials for the Dental Hygienist****2.5 Credit(s)****Lecture 2****Lab 1.5**

Biomaterials for the Dental Hygienist deals with the various materials used in restorative dentistry and other specialty areas in dentistry to fabricate dental appliances and tooth restorations. The course consists of lecture and laboratory components to help students develop an understanding of the composition, properties, structure, and manipulative variables of dental materials historically used in dentistry as well as new materials and techniques that are rapidly evolving. Emphasis centers on practical, clinical applications of materials, the need for educating patients regarding these materials, and techniques for placement of the materials in the oral cavity.

**DHY 228 - Clinical Preventive Dentistry****2.0 Credit(s)****Lecture 2****Lab 0**

Clinical Preventive Dentistry focuses on products and techniques for individualized oral health care instruction. It includes relationship of the saliva and the caries process to oral disease. Emphasis is given to geriatric, pediatric and medically compromised patients' special self care needs.

**Prerequisite(s):** DHY 114 - Dental Hygiene Anatomical Sciences.

**DHY 230 - Oral Health Nutrition****2.0 Credit(s)****Lecture 2****Lab 0**

Oral Health Nutrition presents the fundamentals of nutrition and relates them to health and diseases of the oral tissues. Emphasis will be on patient nutrition counseling and applying the information to the clinic setting.

**Prerequisite(s):** CHM 132 - Introduction to Organic and Biochemistry, or CHM 166 - General Chemistry I and CHM 176 - General Chemistry II.

**DHY 241 - Dental Ethics****1.0 Credit(s)****Lecture 1****Lab 0**

Dental Ethics surveys baseline knowledge of ethical theories, various models of decision making, and major contemporary health care issues and dilemmas facing the dental professional, such as the mandatory reporting of adult and child abuse. The course covers legal aspects of health care as well as statutes, rules, and regulations pertaining to the practice of dentistry and dental hygiene in the states of Iowa and Nebraska.

**DHY 252 - Community Dentistry****2 Credit(s)****Lecture 2****Lab 0**

Community Dentistry includes community site rotations. The course relates the concepts of dental public health and preventive dentistry, including principles of biostatistics, epidemiology, educational instruction, dental manpower, and delivery systems. Students plan a community dental health project for implementation and evaluation in DHY 259 - Community Oral Health Service Learning Experience.

**DHY 255 - Community Oral Health****2.0 Credit(s)****Lecture 1****Lab 3**

Community Oral Health builds on Community Dentistry, which laid the foundation for creating a community health project. The project will be implemented and evaluated in the lab portion of this course. In lecture, topics will include public health agreements and permits, insurance codes, and Medicaid reimbursement for services.

**Prerequisite(s):** DHY 252 - Community Dentistry.

**DHY 259 - Community Oral Health Service Learning Experience****1.0 Credit(s)****Lecture 0****Lab 2**

This course is designed to provide the students with experience developing and evaluating community oral health programs.

**Prerequisite(s):** DHY 252 - Community Dentistry

**DHY 275 - Dental Hygiene II Theory****1.0 Credit(s)****Lecture 1****Lab 0**

Dental Hygiene II Theory continues the clinical practices providing further instruction and application of patient education and oral prophylaxis techniques. Emphasis focuses on continued improvement and advancement in patient assessment skills, instrumentation and radiographic skills, and total care on simple and moderate patient classifications.

**Prerequisite(s):** DHY 183 - Dental Hygiene I Theory.

**DHY 286 - Clinical Dental Hygiene II****1.0 Credit(s)****Lecture 0****Lab 0****Internship 4**

Clinical Dental Hygiene II continues the clinical practices providing further instruction and application of patient education and oral prophylaxis techniques. Emphasis focuses on continued improvement and advancement in patient assessment skills, instrumentation and radiographic skills, and total care on simple and moderate patient classifications.

**Prerequisite(s):** DHY 184 - Clinical Dental Hygiene I.

**DHY 288 - Local Anesthesia and Pain Control****1.0 Credit(s)****Lecture 1****Lab 0**

Local Anesthesia and Pain Control builds on the knowledge base of anatomy and physiology. Emphasis focuses on patient pain control, therapies and techniques.

**Prerequisite(s):** DHY 114 - Dental Hygiene Anatomical Sciences.

**DHY 293 - Dental Hygiene III Theory****2.0 Credit(s)****Lecture 2****Lab 0**

Dental Hygiene III Theory expands clinical practices providing further instruction and application of patient education skills, nonsurgical periodontal therapy and maintenance, and preventive therapeutics on more complex periodontal patients. Emphasis focuses on developing more advanced instrumentation and radiographic skills, improving efficiency and effectiveness in patient assessment, and providing comprehensive dental hygiene care to simple, moderate, and advanced cases. Topics include but are not limited to advanced periodontal instrumentation, patient education, and occupational hazards.

**Prerequisite(s):** DHY 275 - Dental Hygiene II Theory.

**DHY 295 - Clinical Dental Hygiene III****4.0 Credit(s)****Lecture 0****Lab 16**

Clinical Dental Hygiene III expands clinical practices providing further instruction and application of patient education skills, oral prophylaxis techniques, and preventive therapeutics on more complex periodontal patients. Emphasis focuses on developing more advanced instrumentation and radiographic skills, improving efficiency and effectiveness in patient assessment, and providing comprehensive dental hygiene care to simple, moderate, and advanced cases.

(0/0/16-4)

**Prerequisite(s):** DHY 286 - Clinical Dental Hygiene II.

**DHY 303 - Dental Hygiene IV Theory****2.0 Credit(s)****Lecture 2****Lab 0**

Dental Hygiene IV Theory continues clinical practices providing the opportunity to synthesize knowledge and skills learned in all first and second year dental hygiene practice courses while rendering comprehensive dental hygiene care to patients at a program exit-level of competence. Students examine basic research principles to facilitate reading/critiquing of professional and scientific literature in order for the dental hygienist to continue to learn about new treatment modalities, scientific discoveries, oral hygiene products on the market, and other appropriate topics that enhance the practice of dental hygiene.

**Prerequisite(s):** DHY 293 - Dental Hygiene III Theory.

**DHY 304 - Clinical Dental Hygiene IV****4.0 Credit(s)****Lecture 0****Lab 16**

Clinical Dental Hygiene IV continues clinical practices providing the opportunity to synthesize knowledge and skills learned in all first and second year dental hygiene clinical courses while rendering comprehensive dental hygiene care to patients at a program exit-level of competence.

**Prerequisite(s):** DHY 295 - Clinical Dental Hygiene III.

**Diesel****DSL 144 - Electrical Systems****4.0 Credit(s)****Lecture 4****Lab 0**

Electrical Systems is designed to introduce the electrical system requirements for diesel powered vehicles and equipment. Batteries, starting and charging systems as well as circuitry and basic electronics are covered.

**DSL 324 - Introduction to Diesel****4.0 Credit(s)****Lecture 4****Lab 0**

Introduction to Diesel is designed to introduce the diesel engine. Engine development, history, operation theories, and basic subsystems and component nomenclature are covered. Knowledge of basic repair procedures and use of various tools for testing and measuring in both English and metric systems of measurement are examined.

**DSL 354 - Engines I****4.0 Credit(s)****Lecture 4****Lab 0**

Engines I is designed to cover specific technical repair procedures for various engine manufacturers and models. While all engines are basically the same, this course examines the specifics of certain models and manufacturer-recommended repair procedures. General engine construction and design modifications, including the latest production and service changes, are examined.

**DSL 364 - Engines II****4.0 Credit(s)****Lecture 4****Lab 0**

Engines II is a continuation of Engines I and is also designed to include specific technical repair procedures for various engine manufacturers and models. While all engines are basically the same, this course examines the specifics of certain model and manufacturer recommended repair procedures. General engine construction and design modifications are examined including the latest production and service changes.

**DSL 444 - Fuel Systems****4.0 Credit(s)****Lecture 4****Lab 0**

Fuel Systems is designed to provide information about diesel fuel injection systems. Mechanical and electronic injection systems, which are commonly used throughout the diesel industry, are studied. Basic system design, pump operation, and tune-up adjustments are covered. Computer diagnostics and software applications used in relation to the heavy-duty engine maker are covered.

**DSL 544 - Transmissions/Drive Axle****4.0 Credit(s)****Lecture 4****Lab 0**

Transmissions/Drive Axle is designed to provide knowledge of in-depth operational theories, diagnosis, and repair procedures of heavy-duty truck transmissions and rear drive axles. Specific operational features and repair procedures of the popular units in use today are presented. Transmissions, air shifting, power dividers, two-speed axles, and other related equipment are covered.

**DSL 654 - Hydraulic/Air Brakes****4.0 Credit(s)****Lecture 4****Lab 0**

Hydraulic/Air Brakes is designed to introduce the braking systems of vehicles that use both hydraulic and compressed air actuation. Component operation repair and testing are covered. Basic hydraulics and pneumatic systems, which are in common use on vehicles, are also covered.

**DSL 674 - Chassis/Driveline****4.0 Credit(s)****Lecture 4****Lab 0**

Chassis/Driveline is designed to introduce the truck chassis and methods used to integrate various components into the vehicle. Power flow from the clutch, drive shaft and rear axles to the wheels as well as steering and suspension systems are covered.

**DSL 742 - Air Conditioning/Refrigeration****2.0 Credit(s)****Lecture 2****Lab 0**

Air Conditioning/Refrigeration is designed to introduce the theories of mechanical refrigeration/heating systems. Application to vehicle climate control and trailer refrigeration/heating and system service procedures are covered.

**DSL 829 - Preventative Maintenance****2.0 Credit(s)****Lecture 2****Lab 0**

Preventative Maintenance is designed to introduce the student to the concept and objectives of a complete preventative maintenance inspection and repair program. The inspection, documentation, record keeping and repair procedures will be covered.

**DSL 837 - Commercial Driver's License and Tools****1.5 Credit(s)****Lecture 1****Lab 1**

Commercial Driver's License and Tools covers certification for Commercial Driver's License. Students will learn procedures that may lead to obtaining a CDL license and utilize common hand tools related to the job.

**DSL 846 - Diesel Lab I****6.0 Credit(s)****Lecture 0****Lab 18**

Diesel Lab I provides a hands-on shop/lab in which students become familiar with the diesel lab/shop facilities and develop the ability to work in a shop environment. The learning experience allows students to apply classroom instruction to develop the skills needed to become productive diesel technicians. Students accomplish training in the diesel shop/lab on diesel trucks and/or related components.

**DSL 856 - Diesel Lab II****6.0 Credit(s)****Lecture 0****Lab 18**

Diesel Lab II provides a hands-on shop/lab in which students perform assigned tasks to develop necessary skills for job-entry level. Emphasis centers on student motivation, self-guidance, and the use of reference materials. Students develop concentration on the task and the use of proper procedures because training takes place in the diesel shop/lab on trucks or related equipment.

**DSL 863 - Diesel Lab III****3.0 Credit(s)****Lecture 0****Lab 9**

Diesel Lab III consists of a hands-on shop/lab in which students perform assigned tasks on school and/or customer-owned equipment. Student evaluation centers on self-guidance and job completion related to time and accuracy. Training takes place on trucks or related equipment in the diesel shop/lab.

**DSL 876 - Diesel Lab IV****6.0 Credit(s)****Lecture 0****Lab 18**

Diesel Lab IV emphasizes the technical skills needed to enter the work environment and the practice of basic skills, such as adjustments and maintenance skills. Training takes place on school and/or customer-owned trucks or related equipment in the diesel shop/lab.

**DSL 881 - Diesel Internship I****3.0 Credit(s)****Lecture 0****Lab 0****Internship 12**

Diesel Internship I provides work experience related to diesel technology lab training. Internship hours are scheduled on an arranged basis.

**Prerequisite(s):** Permission from the instructor.

**DSL 883 - Diesel Internship II****6.0 Credit(s)****Lecture 0****Lab 0****Internship 24**

Diesel Internship II provides work experience related to diesel technology lab training. Internship hours are scheduled on an arranged basis.

**Prerequisite(s):** Permission from the instructor.

**DSL 886 - Diesel Lab V****6.0 Credit(s)****Lecture 0****Lab 18**

Diesel Lab V emphasizes the technical skills needed to enter the work environment with an increased emphasis on completing projects in time frames according to industry standards.

**DSL 893 - Diesel Lab VI****3.0 Credit(s)****Lecture 0****Lab 9**

Diesel Lab VI emphasizes the technical skills needed to enter the work environment. Students focus on review of pertinent procedures just prior to entering the work force. Students cover specifics, such as tune-up and troubleshooting of various engines.

**Drama - Film and Theatre****DRA 101 - Introduction to Theatre****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Theatre helps the student develop an awareness of and an appreciation for theatrical arts across the globe in various times and places. This course combines lecture, selected readings, video presentations, projects, and a live performance. This course will help the student understand the prevalence of theatre in our daily lives, how theatre gives a voice to diverse cultures, and how to apply critical thinking skills through evaluation and analysis.

**Note(s):** Meets diversity requirement for graduation.

**DRA 113 - History of Musical Theater****3.0 Credit(s)****Lecture 3****Lab 0**

History of Musical Theater takes students through the developmental timeline of musical theater as an art form. Students study musical theater from its inception through the 20th century. Students analyze, compare, and contrast, and evaluate the various periods of musical theater.

**DRA 130 - Acting I****3.0 Credit(s)****Lecture 3****Lab 0**

Acting I examines the theory and practice of acting technique, stage movement, and interpretation of character. It includes studies in the basics of vocal development and control and the use of the body in performance. Students apply these fundamentals through recital or actual theatrical production.

**Note(s):** Meets diversity requirement for graduation.

**DRA 132 - Acting II****3.0 Credit(s)****Lecture 3****Lab 0**

Acting II follows Acting I and expands upon the student's basic knowledge of movement, voice, style, text analysis, auditioning, and directing. Acting II provides opportunities for students to work with each other in groups in order to further collaborative skills on scene-building and ensemble work.

**Note(s):** Meets diversity requirement for graduation.

**DRA 162 - Technical Theatre****3.0 Credit(s)****Lecture 3****Lab 0**

Technical Theatre introduces the student to the backstage crafts of theatre. Instruction includes scene design, parts and uses of the theatre, basic techniques of scenic carpentry, scene painting and stage lighting.

**DRA 180 - Theatre Lab I****1.0 Credit(s)****Lecture 0****Lab 3**

Theatre Lab I provides students with supervised experiences in creating, mounting, and running a theatrical production. This class emphasizes the importance of teamwork, and introduces the practical skills involved with creating a production, including planning and preparation, the rehearsal process, the technical rehearsal process, realizing a fully staged production, and striking stage equipment and materials post-production. Each student's particular assignment is negotiated between the faculty and the student, and is based on the student's experience, abilities, and interests.

**DRA 181 - Theatre Lab II****1.0 Credit(s)****Lecture 0****Lab 3**

Theatre Lab II builds on the skills acquired in Theatre Lab I, and provides students with supervised experiences in creating, mounting, and running a theatrical production. This class emphasizes the importance of teamwork, and expands on practical skills involved with creating a production, including planning and preparation, the rehearsal process, the technical rehearsal process, realizing a fully staged production, and striking stage equipment and materials post-production. Each student's particular assignment is negotiated between the faculty and the student, and is based on the student's experience, abilities, and interests.

**Prerequisite(s):** DRA 180 - Theatre Lab I.

**DRA 187 - The Business of Being a Performing Artist****3.0 Credit(s)****Lecture 3****Lab 0**

The Business of Being a Performing Artist focuses on presenting students with the practical, day-to-day skills and information needed to be successful in performance careers.

**Prerequisite(s):** Obtain instructor permission.

**DRA 225 - Musical Theater Performance I****3.0 Credit(s)****Lecture 1****Lab 2**

Musical Theater Performance I guides students through the synthesis of skills taught throughout the first semester of the Musical Theater program of study. Students research and prepare for solo and ensemble performances. Musical theater styles such as Gilbert and Sullivan, operettas, vaudevilles are explored. (1/2-3)

**Prerequisite(s):** Must be a musical theater major or have permission from instructor to enroll in this course.

**DRA 226 - Musical Theater Performance II****3.0 Credit(s)****Lecture 1****Lab 2**

Musical Theater Performance II builds upon concepts introduced and skills practiced in Musical Theater Performance I. Students perform scenes in which the book of a musical is integrated with its score. Students practice scenes in duets, trios, and small groups. Students continue development of solo and ensemble performances. The coursework culminates in a final project that integrates the following musical theater performance skills-choral singing, harmony, sight-singing, staging, choreography, and character study. Musical theater history and styles from the roaring twenties, the jazzy thirties, and the golden age of integrated book musicals are explored. (1/2-3)

**Prerequisite(s):** Must be a musical theater major or obtain instructor permission.

**DRA 227 - Musical Theater Performance III****3.0 Credit(s)****Lecture 0****Lab 2**

Musical Theater Performance III is designed as a culmination of students' musical theater performance training in preparation for entry into the professional community. Special emphasis is placed on recognizing character types, interacting with partners' song presentations, and the selection and rehearsal of audition materials. Students perform monologues, partnered scenes, and songs in a program showcase.

**Prerequisite(s):** Must be a musical theater major or obtain instructor permission to enroll in this course.

**DRA 280 - Theatre Lab III****1.0 Credit(s)****Lecture 0****Lab 3**

Theatre Lab III builds on the skills acquired in Theatre Lab I and II, and provides students with supervised experiences in creating, mounting, and running a theatrical production. This class emphasizes the importance of teamwork, and expands on practical skills involved with creating a production, including planning and preparation, the rehearsal process, the technical rehearsal process, realizing a fully staged production, and striking stage equipment and materials post-production. Each student's particular assignment is negotiated between the faculty and the student, and is based on the student's experience, abilities, and interests.

**Prerequisite(s):** DRA 181 - Theatre Lab II.

**DRA 281 - Theatre Lab IV****1.0 Credit(s)****Lecture 0****Lab 3**

Theatre Lab IV builds on the skills acquired in Theatre Lab I, II, and III, and provides students with supervised experiences in creating, mounting, and running a theatrical production. This class emphasizes the importance of teamwork, and expands on practical skills involved with creating a production, including planning and preparation, the rehearsal process, the technical rehearsal process, realizing a fully staged production, and striking stage equipment and materials post-production. Each student's particular assignment is negotiated between the faculty and the student, and is based on the student's experience, abilities, and interests.

**Prerequisite(s):** DRA 280 - Theatre Lab III.

**DRA 305 - Introduction to Audio****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Audio introduces students to basic audio theory as well as how to assemble and operate a live sound reinforcement system. Instruction will cover the basic audio theories behind and standard operation of audio cables, microphones, mixing consoles, power amplifiers, loudspeakers, and signal processing.

**Note(s):** Co-numbered with MUS 305

**Early Childhood Education****ECE 103 - Introduction to Early Childhood Education****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Early Childhood Education gives students a historical and philosophical foundation of the field of early childhood education. The course includes an overview of assessment and evidence-based practices and addresses the influences of family centered practice, inclusion, culture and language. Students will explore early childhood careers.

**ECE 120 - Communication with Families****2.0 Credit(s)****Lecture 2****Lab 0**

Communication with Families includes the interrelationship of the early childhood professional and families. Various types of family constellations are identified and explored. Current trends in the field and rights and responsibilities of professionals and families are highlighted.

**ECE 133 - Child Health, Safety, and Nutrition****3.0 Credit(s)****Lecture 3****Lab 0**

Child Health, Safety, and Nutrition focuses on evidence-based concepts in relationship to the growth and development of the young child ages birth to eight. The course blends current theory with problem-solving, practical applications and assessments. Students will explore collaboration with families and assess the role of culture, language and ability on health, safety, and nutrition decisions in early childhood settings.

**ECE 153 - Early Childhood Curriculum I with Lab****4.0 Credit(s)****Lecture 3****Lab 3**

Early Childhood Curriculum I with Lab focuses on the development, implementation and assessment of appropriate environments and curricula for young children. Students prepare to utilize evidence-based, developmentally appropriate practices in a context of family and culturally sensitive care. Emphasis is on understanding children's developmental stages and developing appropriate learning opportunities, interactions and environments in the following areas: dramatic play, art, music, fine and gross motor play.

**Note(s):** Criminal background check is required.

**ECE 156 - Early Childhood Curriculum II with Lab****4.0 Credit(s)****Lecture 2****Lab 6**

Early Childhood Curriculum II with Lab focuses on the development, implementation and assessment of appropriate environments and curricula for young children ages three through eight. Students prepare to utilize developmentally appropriate evidence-based practices in a context of children's culture, language and abilities. Emphasis is on understanding children's developmental stages and developing appropriate learning opportunities, interactions and environments in the following areas: emergent literacy, math, science, technology and social studies.

**Prerequisite(s):** ECE 153 - Early Childhood Curriculum I with Lab.

**Note(s):** Criminal background check is required.

**ECE 170 - Child Growth and Development****3.0 Credit(s)****Lecture 3****Lab 0**

Child Growth and Development examines typical and atypical development of children from conception to adolescence in all developmental domains. The course examines interactions between child, family and society within a variety of community and cultural contexts. Students examine theories and evidence-based practices associated with understanding and supporting young children.

**ECE 221 - Infant/Toddler Care and Education****3.0 Credit(s)****Lecture 3****Lab 0**

Infant/Toddler Care and Education focuses on care, education and assessment of children from birth to 36 months. This course prepares students to utilize developmentally appropriate evidence-based practices, including responsive care giving, routines as curriculum, collaborative relationships with culturally, linguistically, and ability diverse children and families, and a focus on the whole child in inclusive settings.

**Prerequisite(s):** ECE 170 - Child Growth and Development.

**ECE 244 - Early Childhood Guidance with Lab****4.0 Credit(s)****Lecture 3****Lab 3**

Early Childhood Guidance with Lab focuses on effective approaches and positive guidance strategies for supporting the development of all children. This course emphasizes supportive interactions and developmentally appropriate environments. Students use assessment to analyze and guide behaviors and study the impact of family, each child's culture, language and ability on child guidance. Students observe and implement guidance strategies in the on-campus lab school. Includes 45 hour lab experience.

**Note(s):** Criminal background check is required.

**ECE 258 - Early Childhood Field Practicum****6.0 Credit(s)****Lecture 1****Lab 20**

Early Childhood Field Practicum is a culminating experience in the early childhood studies program with direct work-related experience in various early childhood settings. Application of skills acquired in the program to everyday responsibilities by early childhood professionals is included as well as demonstration of leadership abilities through facilitating quality early childhood programming.

**Prerequisite(s):** A grade of "C" or higher in ECE 268 - Early Childhood Field Experience and permission from the instructor.

**ECE 268 - Early Childhood Field Experience****4.0 Credit(s)****Lecture 1****Lab 12**

Early Childhood Field Experience is the application and integration of theory and developmentally appropriate evidence-based practices in an early childhood setting. Students are placed in selected programs serving children birth through age five to work with culturally, linguistically and ability diverse young children and families. This experience emphasizes professional relationships and behavior, appropriate adult/child interactions, curriculum planning and program routines.

**Prerequisite(s):** ECE 133 - Child Health, Safety, and Nutrition; ECE 170 - Child Growth and Development; ECE 153 - Early Childhood Curriculum I with Lab; ECE 156 - Early Childhood Curriculum II with Lab; ECE 103 - Introduction to Early Childhood Education; ECE 244 - Early Childhood Guidance with Lab; and ECE 120 - Communication with Families.

**Note(s):** Criminal background check is required.

**ECE 287 - Exceptional Learner****3.0 Credit(s)****Lecture 3****Lab 0**

Exceptional Learner is an overview of individuals with physical, cognitive, and emotional needs, as well as those who are gifted. Educational strategies for meeting those needs are explored. Federal laws for IEPs and IFSPs are discussed.

**Note(s):** Co-numbered with EDU 245.**ECE 290 - Early Childhood Program Administration****3.0 Credit(s)****Lecture 3****Lab 0**

Early Childhood Program Administration is an introduction to methods of administering a quality early childhood program. Emphasis is on enrollment, budgeting, staffing, and equipping a program. Management styles are explored as students learn methods for working with staff, families, community, and related professionals.

**Economics****ECN 110 - Introduction to Economics****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Economics covers international issues, basic economic issues, and applications. The course includes such topics as supply, demand, pricing and production, national income and output determination, and unemployment and inflation. Students learn about Classical and Keynesian theories, money and banking, and fiscal and monetary policies.

**ECN 120 - Principles of Macroeconomics****3.0 Credit(s)****Lecture 3****Lab 0**

Principles of Macroeconomics introduces the fundamentals of macroeconomic analysis, emphasizing the underlying principles and concepts of the American economic system. Topics include national income accounting, fiscal policy, Keynesian economics, monetary policy and the Federal Reserve System, supply-side economics, and macroeconomic policy issues, such as inflation, unemployment, and economic growth.

**ECN 130 - Principles of Microeconomics****3.0 Credit(s)****Lecture 3****Lab 0**

Principles of Microeconomics introduces the fundamentals of microeconomic analysis. The underlying concepts of scarcity and choice form the foundation for examining individual decision-making in the economy and the interaction among consumers, firms, unions, and government. Topics include elasticity, utility, product, and factor markets, business organization, antitrust legislation, labor laws, international trade and finance, and microeconomic policy issues.

**Education****EDU 210 - Foundations of Education****3.0 Credit(s)****Lecture 3****Lab 0**

Foundations of Education brings students into contact with the numerous facets and issues involved in American elementary and secondary education. Students learn about teaching as a profession, the philosophy of education, education in the historical context, curriculum development, and contemporary issues facing the public and educators.

**EDU 219 - Field Experience and Seminar****1.0 Credit(s)****Lecture 1****Lab 0**

Field Experience and Seminar provides purposeful classroom experience for pre-service teachers. Students reflect on the ways schools' function, identify the roles and responsibilities of teachers, and observe student behavior.

**Prerequisite(s):** A grade of "C" or higher in EDU 210 - Foundations of Education, EDU 245 - Exceptional Learners, and ECE 170 - Child Growth and Development.

**EDU 235 - Children's Literature****3.0 Credit(s)****Lecture 3****Lab 0**

Children's Literature surveys and evaluates numerous types of literature for children. The course introduces the student to a comprehensive selection of authors and illustrators of children's literature. Students read poetry, learn the technique of storytelling, and develop important skills related to literature selection for children. Presentation skills with children are also explored.

**EDU 240 - Educational Psychology****3.0 Credit(s)****Lecture 3****Lab 0**

Educational Psychology applies the principles of psychology to classroom contexts. Topics include child/adolescent development, learning, motivation, instructional techniques, and assessment/evaluation.

**Prerequisite(s):** ECE 170 - Child Growth and Development or PSY 121 - Developmental Psychology.

**Note(s):** Co-numbered with PSY 281**EDU 245 - Exceptional Learner****3.0 Credit(s)****Lecture 3****Lab 0**

Exceptional Learner is an overview of individuals with physical, cognitive, and emotional needs, as well as those who are gifted. Educational strategies for meeting those needs are explored. Federal laws for IEPs and IFSPs are discussed.

**Note(s):** Co-numbered with ECE 287.

**EDU 255 - Technology in the Classroom****3.0 Credit(s)****Lecture 3****Lab 0**

Technology in the Classroom prepares students to facilitate learning in technology rich environments. The course address the impact of media on learning practices and the use of media to enhance learning in educational settings. Students explore contemporary topics related to educational media and technology trends in education.

**Prerequisite(s):** EDU 210, EDU 245**Electrical Technology****ELE 155 - National Electrical Code I****2.0 Credit(s)****Lecture 2****Lab 0**

National Electrical Code I provides students with a review of the National Electrical Code (NEC). The students learn the layout of the NEC and learn to navigate through it efficiently.

**ELE 156 - National Electrical Code II****2.0 Credit(s)****Lecture 2****Lab 0**

National Electrical Code II provides students guidance on how to size and select circuit breakers and fuses for various applications. The course covers short-circuit calculations and troubleshooting. The course examines the National Electrical Code requirements for equipment installed in various hazardous locations.

**Prerequisite(s):** ELE 155 - National Electrical Code I.**ELE 179 - Advanced Wiring Systems****5.0 Credit(s)****Lecture 2****Lab 6**

Advanced Wiring Systems provides knowledge of conduit bending using electric and hydraulic benders and the types of bends. The course teaches students the usage of junction boxes, cable pulling, cable tray assembly, circuit breakers and the preparation of cable ends for terminations.

**Prerequisite(s):** ELE 326 - Basics of Wiring.**ELE 180 - Electrical Lighting Systems****2.0 Credit(s)****Lecture 1****Lab 2**

Electrical Lighting Systems provides students the knowledge of the various types of lamps and the advantages of each type (incandescent, halogen, fluorescent, and high intensity discharge). The course discusses selecting and installing lighting fixtures including recessed, surface-mounted, suspended and track-mounted. Students learn the relationship between current, voltage, resistance, and power in a direct current electric circuit.

**ELE 207 - Residential Electrical Services****3.0 Credit(s)****Lecture 2****Lab 2**

Residential Electrical Services teaches students the grounding requirements of a residential electrical service, including how to calculate and select service entrance equipment, and how to select the proper wiring methods for various types of residences. The course teaches the types and purposes of equipment grounding conductors and the purpose of ground fault circuit interrupters. The course will examine the regulations for electrical systems around swimming pools, spas, and hot tubs as well as rules for installing electric space heating and HVAC equipment. The operation of testing equipment will be covered: voltmeter, ohmmeter, clamp-on ammeter, multimeter, megohmmeter, motor and phase rotation testers.

**ELE 227 - Electrical Blueprint Reading****2.0 Credit(s)****Lecture 2****Lab 0**

Electrical Blueprint Reading teaches students the basic principles of commercial/industrial blueprint reading with a strong emphasis on electrical construction. This course develops an understanding of various rules and guidelines for the makeup of electrical blueprints. Students will refer to, interpret, and put the prints into real world applications.

**ELE 231 - Basic Electrical Principles****5.0 Credit(s)****Lecture 4****Lab 2**

Basic Electrical Principles examines the variety of tasks typically performed by electricians and introduces the principles of electric circuits, using AC and DC voltage. Students examine the different types of nonmetallic and metallic device boxes available and the appropriate method for mounting device boxes. Students identify and select various types and sizes of raceways and fittings and discuss the different methods of installing raceways. The course examines the allowable ampacity of a conductor for a given application.

**ELE 326 - Basics of Wiring****2.0 Credit(s)****Lecture 0****Lab 4**

Basics of Wiring provides students the knowledge of electrical theories, components, and how electrical systems work. Students learn to install effective wiring systems and how to interpret circuit schematics and electrical drawings.

**Electronics****ELT 196 - Circuit Analysis I****5.0 Credit(s)****Lecture 4****Lab 2**

Circuit Analysis I introduces the principles of electric circuits. It includes the study of voltage, current, resistance, power, energy, magnetism, electromagnetism, capacitors, inductors, and transformers. Students analyze these devices in series, parallel, series-parallel circuits as well as motor and generators, using AC and DC voltage.

**ELT 201 - Circuit Analysis II****5.0 Credit(s)****Lecture 3****Lab 4**

Circuit Analysis II is an introduction to solid state electronic devices and digital circuits. Topics include the study of basic semiconductor theory, the PN junction, special-purpose diodes, optical devices, bipolar junction transistors, power amplifiers, field effect transistors, thyristors, numbering circuits, combinational logic, counters, and registers. Students develop skills in the analysis and troubleshooting of semiconductor and digital circuits.

**ELT 215 - Motors and Controls****2.0 Credit(s)****Lecture 1****Lab 2**

Motors and Controls covers motor control systems, devices, circuit design and construction, and troubleshooting techniques. Specific topics include electrical safety, lockout/tagout procedures, relays, timers, pilot devices, and solid state control technologies. Extensive laboratory exercises using industrial grade components enhances classroom studies.

**ELT 250 - Programmable Logic Controllers****3.0 Credit(s)****Lecture 3****Lab 0**

Programmable Logic Controllers introduces students to PLC tasks such as installation, wiring, programming, troubleshooting, communications, and advanced programming. Students learn industrial relevant skills on how to operate, interface, program, and troubleshoot PLC systems. Students learn how to set up software drivers, log onto networks, upload and download projects, and search for documentation.

**Prerequisite(s):** ELT 215 - Motors and Controls.**Corequisite(s):** ELT 251 - Programmable Logic Controllers Lab.**ELT 251 - Programmable Logic Controllers Lab****2.0 Credit(s)****Lecture 0****Lab 4**

Programmable Logic Controllers Lab gives students hands-on experience installing, wiring, programming, and troubleshooting PLC systems and related equipment.

**Prerequisite(s):** ELT 215 - Motors and Controls.**Corequisite(s):** ELT 250 - Programmable Logic Controllers.**ELT 252 - Advanced Programmable Logic Controllers****3.0 Credit(s)****Lecture 3****Lab 0**

Advanced Programmable Logic Controllers builds upon the ladder logic programming in Programmable Logic Controllers, adding advanced topics such as: Human Machine Interface (HMI), networking and distributed I/O, Safety PLC's, machine interfacing, and motion control. Students learn industrial relevant skills on how to operate, interface, program, and troubleshoot advanced PLC systems.

**Prerequisite(s):** ELT 251 - Programmable Logic Controllers Lab and ELT 250 - Programmable Logic Controllers.**Corequisite(s):** ELT 253 - Advanced Programmable Logic Controllers Lab.**ELT 253 - Advanced Programmable Logic Controllers Lab****2.0 Credit(s)****Lecture 0****Lab 4**

Advanced Programmable Logic Controllers Lab gives students hands-on experience installing, writing, programming, networking, and troubleshooting Allen Bradley PLC, Safety PLC, and Human Machine Interface (HMI) systems. Students also interface PLC's with other machinery, such as industrial robots.

**Prerequisite(s):** ELT 250 - Programmable Logic Controllers and ELT 251 - Programmable Logic Controllers Lab.**Corequisite(s):** ELT 252 - Advanced Programmable Logic Controllers.**ELT 313 - Digital Circuits I****4.0 Credit(s)****Lecture 3****Lab 2**

Digital Circuits I provides in-depth coverage of the analysis of logic circuitry. Students explore gating circuits, combinational logic, counters, and registers.

**Prerequisite(s):** ELT 201 Circuit Analysis II.**ELT 432 - Telecommunications****4.0 Credit(s)****Lecture 4****Lab 0**

Telecommunications provides an introduction to general telecommunication concepts. Students will explore communication methods and mediums while developing an understanding of signal flow and the basic subsystems that make up all communications systems. Knowledge of signal flow and subsystems operation will be used to build troubleshooting skills.

**Corequisite(s):** ELT 433 - Telecommunications Lab.**ELT 433 - Telecommunications Lab****1.0 Credit(s)****Lecture 0****Lab 2**

Telecommunications Lab is an opportunity for students to apply communication principles studied in the co-requisite. Students will use test equipment to assemble, analyze, and troubleshoot a variety of common telecommunication circuits.

**Corequisite(s):** ELT 432 - Telecommunications.**ELT 445 - Industrial Networking I****4.0 Credit(s)****Lecture 4****Lab 0**

Industrial Networking I is the study of industrial data communications fundamentals, the transmission of data, protocols in industrial data communications, networking of industrial devices, and the management of industrial networks. Students concentrate on the network hardware while developing programming skills required to employ industrial networks.

**Prerequisite(s):** ELT 158 Industrial Electronics I.

**ELT 446 - Industrial Networking I Lab****1.0 Credit(s)****Lecture 0****Lab 2**

Industrial Networking I Lab provides hands-on experience in wiring industrial hardware, managing industrial network files, and operation of industrial electronic devices connected to the network. Ladder logic programs will be written to control network devices and manage the industrial network.

**Corequisite(s):** ELT 445 - Industrial Networking I.

**ELT 523 - Electronic Devices****4.0 Credit(s)****Lecture 3****Lab 2**

Electronic Devices provides in-depth coverage of basic semiconductor theory, the PN junction, decoder applications, special-purpose diodes, optical devices, bipolar junction transistors, power amplifiers, field effect transistors, thyristors, and operational amplifiers. Students develop skills in the analysis and troubleshooting of semiconductor circuits.

**Prerequisite(s):** ELT 201 Circuit Analysis II.

**ELT 850 - Design Projects Lab****1.0 Credit(s)****Lecture 0****Lab 2**

Design Projects Lab involves solving problems by working as a team on projects that require students to draw on knowledge and resources gained in electronics coursework. Students manage a project from conception to completion.

**Prerequisite(s):** ELT 523 - Electronic Devices.

**Engineering****EGR 100 - Engineering Orientation****1.0 Credit(s)****Lecture 1****Lab 0**

Engineering Orientation explores engineering career options and provides direction for choosing a field in engineering. Students learn problem-solving skills and develop an educational plan of study.

**Prerequisite(s):** Math placement, or a grade of "C" or higher in MAT 102 - Intermediate Algebra.

**EGR 160 - Engineering I****3.0 Credit(s)****Lecture 2****Lab 2**

Engineering I integrates skills in engineering graphing, computer modeling and engineering design. Students will develop techniques for visualizing, analyzing, and communicating 3-D geometries and will use applications of the design process to create written and oral reports.

**Prerequisite(s):** Math placement; or a grade of "C" or higher in MAT 121 - College Algebra and MAT 130 - Trigonometry; or a grade of "C" or higher in MAT 129 - Precalculus.

**EGR 165 - Engineering II****3.0 Credit(s)****Lecture 2****Lab 2**

Engineering II allows students to develop skills in solving engineering problems with spreadsheet programs and computer languages. Programming and numerical techniques are directly applied to the engineering discipline.

**Prerequisite(s):** Math placement; or a grade of "C" or higher in MAT 121 - College Algebra and MAT 130 - Trigonometry; or a grade of "C" or higher in MAT 129 - Precalculus.

**Engineering Technology****EGT 113 - Introduction to PLM****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to PLM will provide an overview of the current thinking on the principles, strategies, practices, and applications of Product Lifecycle Management followed by an in-depth look at specific areas of PLM that are the focus of today's innovative organizations. This course will present both the conceptual underpinnings of PLM, along with the newest industry views on PLM applications. There will be a particular emphasis on initiating PLM projects at the beginning of the lifecycle in engineering and manufacturing and its impact on the rest of the organization. The course will also present frameworks to provide economic justifications for PLM projects and explain the pitfalls of a piecemeal approach to PLM.

**EGT 153 - Design Statics****3.0 Credit(s)****Lecture 3****Lab 0**

Design Statics presents an elementary, analytical and practical approach to the principles and physical concepts of the study of forces and effects on machines. The course uses problem solving related to fundamental industrial technology systems. Students will learn basic laws of energy, force, and mass applied to technology systems including: mechanical power transmission; equipment calibration; heating, ventilation and air conditioning.

**Prerequisite(s):** MAT 750 - Technical Mathematics II.

**EGT 155 - Engineering Drawing Practices****3.0 Credit(s)****Lecture 3****Lab 0**

Engineering Drawing Practices is the development of the technical knowledge and skills required for application and interpretation of technical drawings from various industries. The course will provide students with the fundamentals of drafting and technical documentation generation according to the ASTM 14.1 (Engineering Drawing Practice) standards. Students will have exposure to architectural, mechanical, and electrical drawings.

**EGT 167 - Geometric Dimensioning and Tolerancing****3.0 Credit(s)****Lecture 3.0****Lab 0.0**

Geometric Dimensioning and Tolerancing provides fundamentals of geometric dimensioning and tolerancing (GD&T) per the ASME Y14.5-2009 standard. The development of the technical knowledge of GD&T is the focus of the course. Design requirements for functional gages and other methods used to verify GD&T specifications are also presented.

**EGT 171 - Manufacturing Processes****3.0 Credit(s)****Lecture 1****Lab 4**

Manufacturing Processes is a study of selected materials and related processes used in manufacturing, with emphasis on material and process selection for optimum design based on quality, strength, and economic evaluations. Laboratory experiments, demonstrations, and field trips are used.

**EGT 176 - Electric Power and Electronics****4.0 Credit(s)****Lecture 3****Lab 2**

Electric Power and Electronics provides students with basic electrical fundamentals including; electrical safety, wiring, 3-phase service, controls, and motors for industrial applications. Planning building electrical systems will also be introduced including electronics to sense, monitor, and control mechanical processes. Students will learn fundamentals of semiconductors, digital logic circuits, and reading of electrical diagrams.

**Prerequisite(s):** MAT 750 - Technical Mathematics II.

**EGT 184 - Strength of Materials****3.0 Credit(s)****Lecture 2****Lab 2**

Strength of Materials introduces the analysis and design of basic structural members (bar, beams, shafts, connectors, and columns) under various loads to determine stress, strain, load limits, required size, and deflection. The course covers selection of appropriate materials for a particular design. Students use standard analytic and computer-based techniques of solving problems related to force and moments.

**Prerequisite(s):** EGT 153 - Design Statics.

**English Composition****ENG 065 - Composition I Success****1.0 Credit(s)****Lecture 0****Lab 2**

Composition I Success provides enhanced support for the Composition I curriculum. Coursework offers additional practice with skills necessary for the successful completion of Composition I. Students also receive focused guidance on assignments in Composition I course.

**Corequisite(s):** ENG 105 - Composition I

**Note(s):** College preparatory courses cannot be used to fulfill degree requirements.

**ENG 105 - Composition I****3.0 Credit(s)****Lecture 3****Lab 0**

Composition I focuses on complex essays composed in various rhetorical modes of expository writing. Students develop experience using the writing process when composing fully developed, organized essays. The emphasis in this course is on the formal or academic style of writing that has a clear and analytical focus. Documentation formatting is introduced with the culmination of a thesis-driven, researched argumentative essay. Extended readings and discussions in class enhance more mature critical thinking abilities required of any college reader and writer.

**Prerequisite(s):** ENG 065 Composition I Success or English placement

**Corequisite(s):** ENG 065 Composition I Success or English placement

**Prerequisite(s)/Corequisite(s):** ENG 065 Composition I Success or English placement

**ENG 106 - Composition II****3.0 Credit(s)****Lecture 3****Lab 0**

Composition II builds upon basic writing skills with advanced readings and practice in academic discourse. Students learn to construct rhetorically sound arguments. The course emphasizes academic research and responsible use of sources.

**Prerequisite(s):** A grade of "C" or higher in ENG 105 - Composition I.

**ENG 110 - Writing For The Workplace****3.0 Credit(s)****Lecture 3****Lab 0**

Writing for the Workplace prepares students for the various types of written communication required by professional employers. Students learn how to write informal and formal documents and reports in the design and style of career-related communication. This course includes a review of grammar and usage skills and emphasizes effective language use in real-world applications.

**English as a Second Language****ESL 054 - English as a Second Language I****3.0 Credit(s)****Lecture 3****Lab 0**

English as a Second Language I is a beginning-level ESL course that introduces student to basic English vocabulary and grammar. Students practice listening comprehension, critical thinking, speaking, and writing of academic English. Students begin the writing process with writing simple sentences and short paragraphs.

**Prerequisite(s):** English placement.

**Note(s):** College Preparatory courses cannot be used to fulfill degree requirements.

**ESL 061 - English as a Second Language II****3.0 Credit(s)****Lecture 3****Lab 0**

English as a Second Language II is an intermediate-level ESL course that builds on prior English knowledge and provides instruction and practice in the listening comprehension, speaking, and writing of academic English. Students build upon vocabulary and grammar from English as a Second Language I. Students develop topic sentences, supporting sentences, and concluding sentences, writing various types of paragraphs and following the steps in the writing process.

**Prerequisite(s):** ESL 054 - English as a Second Language I, or English placement.

**Note(s):** College preparatory courses cannot be used to fulfill degree requirements.

**Environmental Science****ENV 102 - Introduction to Sustainability****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Sustainability will provide students a working knowledge of sustainable systems and interactions in the environment, energy, society, culture, economics and public policy. Students will study the primary principle of sustainability: to meet the needs of the present without compromising the future.

**ENV 111 - Environmental Science****4.0 Credit(s)****Lecture 3****Lab 2**

Environmental Science is designed for students interested in ecology. Students apply ecological principles as they learn the importance of population dynamics, resources, and biodiversity in ecosystems. Topics include water, air, soil, food waste, and the impact on sustaining biodiversity of species and ecosystems. Laboratory work complements each topic of study.

**Note(s):** Students must provide own transportation for off-campus field trips.

**Finance****FIN 121 - Personal Finance****3.0 Credit(s)****Lecture 3****Lab 0**

Personal Finance provides individuals with the necessary knowledge and ability to comprehend role as a consumer in the economy. Students learn types of consumer credit, home finance, budgeting, basic financial planning, and principles of insurance and retirement.

**FIN 142 - Corporate Finance****3.0 Credit(s)****Lecture 3****Lab 0**

Corporate Finance serves as an introduction to the major areas of finance.

**Fire Science****FIR 101 - Introduction to Fire Protection Technology****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Fire Protection Technology covers the fundamentals of fire protection with emphasis on terminology, fire apparatus, fire laws and regulations, and the basic procedures used in the extinguishing of fires.

**FIR 131 - Codes and Inspection****3.0 Credit(s)****Lecture 3****Lab 0**

Codes and Inspection encompasses fire protection requirements, including zoning laws and primary access routes for flammable and explosive materials. Students focus on the formulation of zoning and building codes and become familiar with local, state and national codes.

**FIR 145 - Strategy and Tactics****3.0 Credit(s)****Lecture 3****Lab 0**

Strategy and Tactics demonstrates the effects of fire on structural components and analyzes the strategic areas of concentration in a fire situation.

**FIR 148 - Hydraulics and Pumping Applications****3.0 Credit(s)****Lecture 3****Lab 0**

Hydraulics and Pumping Applications studies the characteristics of water and the fluid systems which move and utilize water in the science of fire engineering. Topics include water distribution systems, fire service pumps, friction loss calculations, engine and nozzle pressures, standpipe systems, automatic sprinkler systems, and foam systems.

**FIR 152 - Fire Protection Systems****3.0 Credit(s)****Lecture 3****Lab 0**

Fire Protection Systems presents a study of structural protection systems, personnel protection, and detection systems. It includes commercial and private fire alarm systems: direct, local, and auxiliary.

**FIR 157 - Fire Protection Equipment****3.0 Credit(s)****Lecture 3****Lab 0**

Fire Protection Equipment examines procedures necessary to evaluate the needs and requirements of various types of fire protection equipment. Students study the writing of specifications used in setting up the criteria for specific equipment.

**FIR 235 - Fire Investigation I****3.0 Credit(s)****Lecture 3****Lab 0**

Fire Investigation I focuses on procedures of arson investigations, legal documentation, submittal of evidence, and photographic requirements. Students examine the use of the polygraph as an investigative aid.

**FIR 270 - Survey of Construction****3.0 Credit(s)****Lecture 3****Lab 0**

Survey of Construction presents an overview of the construction industry and construction methods. This course provides an introduction to terminology, methods, and construction materials. Students learn to evaluate architectural drawings, building codes, building sites, etc. Special emphasis is placed on subject matter as it relates to Fire Science.

**FIR 320 - Essentials of Firefighter I****4.0 Credit(s)****Lecture 4****Lab 0**

Essentials of Firefighter I is structured for competency based training of the Firefighter I information presented in the IFSTA (International Fire Service Training Association). The Firefighter I will receive knowledge and skills to function as an integral member of a fire fighting team under direct supervision in hazardous conditions.

**FIR 321 - Essentials of Firefighter II****2.0 Credit(s)****Lecture 2****Lab 0**

Essentials of Firefighter II is structured for competency based training of the Firefighter II information presented in the IFSTA (International Fire Service Training Association). The Firefighter II will receive knowledge and skills to function under general supervision in hazardous conditions.

**Prerequisite(s):** FIR 320 - Essentials of Firefighter I.

**Foreign Language - Spanish****FLS 141 - Elementary Spanish I****4.0 Credit(s)****Lecture 4****Lab 0**

Elementary Spanish I provides the fundamentals of the Spanish language placing emphasis on elements of Spanish grammar and the four basic language skills: listening, speaking, reading, and writing. This course addresses the needs of students who have not previously taken Spanish.

**Note(s):** Meets diversity requirement for graduation.

**FLS 142 - Elementary Spanish II****4.0 Credit(s)****Lecture 4****Lab 0**

Elementary Spanish II continues the study of Spanish grammar including present and past verb tenses with continued emphasis on four communication skills: listening, speaking, reading, and writing.

**Prerequisite(s):** FLS 141 - Elementary Spanish I or demonstrated proficiency.

**Note(s):** Meets diversity requirement for graduation.

**Geography****GEO 121 - World Regional Geography****3.0 Credit(s)****Lecture 3****Lab 0**

World Regional Geography surveys nations and continents, emphasizing important physical characteristics of the major regions of the world. Attention centers on economic, political, and cultural development as well as consequent contemporary relationships with each other.

**Note(s):** Meets diversity requirement for graduation.

**Graphic Communications****GRA 104 - Introduction to Graphic Communications****3.0 Credit(s)****Lecture 2****Lab 2**

Introduction to Graphic Communications instructs students in the fundamentals of design for print and web media. Students survey the history of graphic design, while being introduced to the basics of visual communication, typography, layout, and use of color.

**GRA 173 - Typography****3.0 Credit(s)****Lecture 2****Lab 2**

Typography provides instruction in choosing appropriate typefaces, sizes, and styles. Emphasis centers on learning rules for good typography and using type to convey a message.

**Health Science****HSC 113 - Medical Terminology****2.0 Credit(s)****Lecture 2****Lab 0**

Medical Terminology studies terms used in medicine. This course gives students a working knowledge of the roots, prefixes and suffixes of commonly used medical terms. Emphasis centers on the correct spelling and pronunciation of the vocabulary.

**HSC 128 - Anatomy and Physiology for Allied Health Programs****3.0 Credit(s)****Lecture 3****Lab 0**

Anatomy and Physiology for Allied Health Programs provides a base knowledge of the organization, structure, terminology and pathology of the human body. Body systems and functions are covered in detail, allowing the student to understand how the human body works as a whole.

**HSC 164 - Sterile Processing Techniques****5.0 Credit(s)****Lecture 4****Lab 3**

Sterile Processing Techniques introduces the multiple processes used in sterilization. Topics include aseptic technique, decontamination, sterilization and wrapping of instruments. Biological and chemical parameters of sterilization are introduced, including the unique quality controls of each process. Upon completion of this course, students are eligible to take the Sterile Processing Technician Certification exam offered by The Certification Board for Sterile Processing and Distribution.

**HSC 167 - Sterile Processing Instrumentation****5.0 Credit(s)****Lecture 4****Lab 3**

Sterile Processing Instrumentation introduces instruments used in various surgeries and the unique cleaning steps for each. Students will prepare, clean and process instruments using approved protocols for types of instruments. Students will identify select surgical instruments including name and primary function in surgeries. Upon completion of this course, students are eligible to take the Surgical Instrument Specialist Certification Exam (CSIS) offered by the Certification Board for Sterile Processing and Distribution.

**HSC 172 - Nurse Aide****3.0 Credit(s)****Lecture 2****Lab 1****Internship 2**

Nurse Aide is the 75-hour certified nurse aide (CNA) course. It allows students to meet the training requirements of the Omnibus Budget Reconciliation Act of 1987 (OBRA) for nurse aides working in nursing facilities and skilled nursing facilities. Emphasis in the course is on achieving a basic level of knowledge and demonstrating skills to provide safe and effective resident care.

**HSC 203 - Sterile Processing Fundamentals****5.0 Credit(s)****Lecture 3****Lab 6**

Sterile Processing Fundamentals introduces the multiple processes used in sterilization and instruments used in various surgeries. Students will prepare, clean and process instruments using approved protocols for types of instruments. Students will identify select surgical instruments including name and primary function in surgeries. Topics include: aseptic technique, decontamination, sterilization and wrapping of instruments. Biological and chemical parameters of sterilization are introduced and the unique quality controls of each process. Upon completion of this course, students are eligible to take the Sterile Processing Technician Certification exam offered by The Certification Board for Sterile Processing and Distribution.

**Prerequisite(s):** BIO 168 - Human Anatomy and Physiology I, HSC 113 - Medical Terminology, MAT 743 - Technical Math, ENG 105 - Composition I, SPC 122 - Interpersonal Communication.

**HSC 272 - Certified Personal Trainer****3.0 Credit(s)****Lecture 3****Lab 0**

Certified Personal Trainer provides students with the knowledge needed to work as a Certified Personal Trainer. Students will be eligible to sit for the optional National Personal Training Certification exam upon successful completion of the course.

**History****HIS 110 - Western Civilization: Ancient to Early Modern****3.0 Credit(s)****Lecture 3****Lab 0**

Western Civilization: Ancient to Early Modern encompasses the history of the western world from its earliest beginnings through the mid-17th century. Topics include the Tigris-Euphrates River Valley, the Egyptian Civilization, the rise of Hellenism, the story of Rome, the rise of Christianity as well as the Byzantine Empire, the Medieval world, the Renaissance, the New World, and the Age of Reason.

**HIS 111 - Western Civilization: Early Modern to Present****3.0 Credit(s)****Lecture 3****Lab 0**

Western Civilization: Early Modern to Present studies the history of the western world from the early modern era to the present time. Topics include the Age of Absolutism, the Industrial Revolution and capitalism, the French Revolution and the Napoleonic Era, the rise of Nationalism and the German state, European expansion overseas, World War I, the post war period, Adolph Hitler and fascism, World War II, the Iron Curtain, third world development, and the contemporary period.

**HIS 151 - U.S. History to 1877****3.0 Credit(s)****Lecture 3****Lab 0**

U.S. History to 1877 covers the historical development of America. Topics include the Native American background, the Age of Discovery and Exploration, the Colonial Era, the Revolutionary Period, the Federal Era, the Age of Jackson, Manifest Destiny, and the Civil War and Reconstruction.

**HIS 152 - U.S. History Since 1877****3.0 Credit(s)****Lecture 3****Lab 0**

U.S. History Since 1877 deals with the historical development of America from the end of Reconstruction to the contemporary period. Topics include the industrialization of America in the late 19th century, the end of the frontier, the Gilded Age, the Progressive Era, World War I, the Roaring Twenties, the Great Depression, World War II, the Cold War era, and recent historic events.

**HIS 251 - U.S. History 1945 to Present****3.0 Credit(s)****Lecture 3****Lab 0**

U.S. History 1945 to Present examines major trends and events in American history since the end of World War II. Primary topics include the onset of the Cold War and the Korean War, the baby boom of the 1950s, the JFK presidency and assassination, the Civil Rights movement, the Vietnam War and counterculture, Watergate, the Reagan Revolution, and the United States' growing involvement in the Middle East from the Iranian Hostage Crisis to the War in Iraq to 9/11, and recent events in U.S. history.

**HIS 253 - American Indian History and Culture****3.0 Credit(s)****Lecture 3****Lab 0**

American Indian History and Culture focuses on aboriginal cultures of North America from origins to present. Extensive usage of anthropological, archaeological and historical sources will be used. These will be expanded by usage of Native American sources. Special attention will be placed on the interaction of Native American cultures and Colonial and post-Colonial American governmental policies. The cultural exchange between Indian and non-Indian groups as a vital element of the American culture will be highlighted.

**Note(s):** Meets diversity requirement for graduation.

**HIS 257 - African American History****3.0 Credit(s)****Lecture 3****Lab 0**

African American History deals with the experience of blacks in the history of the United States. Topics include African heritage, the slave trade, slavery in the Antebellum South, the Civil War and emancipation, the Jim Crow era, the Harlem Renaissance, the civil rights struggle, and modern black America.

**Note(s):** Meets diversity requirement for graduation.

**HIS 281 - Local History****3.0 Credit(s)****Lecture 3****Lab 0**

Local History offers the opportunity to examine and learn more about the history of the Southwest Iowa/Council Bluffs area. Field trips to area sites to study artifacts and meet with local experts and historians are featured. The course follows a chronological development and includes such topics as the area before white settlers, Lewis and Clark, the Mormons, Union Pacific, Victorian era architecture, minority contributions, and others. An additional component of the course is original research using primary sources.

**Hospitality, Culinary Arts & Management****HCM 100 - Sanitation and Safety****2.0 Credit(s)****Lecture 2****Lab 0**

Sanitation and Safety presents basic food safety and sanitation requirements as well as employee safety in a food service facility. Emphasis focuses on inherent problems in maintaining a safe food supply and strategies to provide a wholesome product. The course outlines National Institute for the Food Industry (NIFI) standards and state food sanitation regulations. Topics include food spoilage and microbiology; government regulations regarding purchasing, storage, preparation and service of wholesome food; requirements for equipment and physical plant sanitation; and guidelines for employee safety.

**HCM 111 - Principles of Baking I****2.0 Credit(s)****Lecture 2****Lab 0**

Principles of Baking I introduces the fundamental principles involved in the baking process. Emphasis centers on ingredients used, conversion of standard recipes, and understanding methods for preparing quick breads, yeast breads, donuts, sweet rolls, roll-in dough, pie dough, pie fillings, cookies, and confectionary items.

**HCM 112 - Principles of Baking II****2.0 Credit(s)****Lecture 2****Lab 0**

Principles of Baking II presents instruction in the production of puff paste doughs, Danish rolls, croissants, choux-paste desserts, cheesecake, cooked puddings, cooked desserts, sugar art work with an emphasis in cake assembly and decoration.

**Prerequisite(s):** HCM 111 - Principles of Baking I and HCM 100 - Sanitation and Safety.

**HCM 113 - Culinary Baking****1.0 Credit(s)****Lecture 0****Lab 3**

Culinary Baking provides practical application of topics presented in the theory class. Emphasis centers on the use of scaling and baking equipment. Baking projects involve techniques in quick breads, yeast breads, cake donuts, yeast rolls, sweet rolls, coffee cakes, confectionery products, and cookies.

**HCM 121 - Culinary Baking II****1.0 Credit(s)****Lecture 0****Lab 3**

Culinary Baking II provides practical application of topics presented in the theory class. Emphasis centers on making up puff-paste desserts, choux-paste desserts, cake baking, Danish rolls, cheese cake, cooked puddings, and croissants.

**Prerequisite(s):** HCM 113 - Culinary Baking, HCM 111 - Principles of Baking I, and HCM 100 - Sanitation and Safety.

**HCM 172 - International Cuisine Lab****3.0 Credit(s)****Lecture 0****Lab 6**

International Cuisine Lab provides students with the experience of cooking through quantity preparation of multiple course international dinners. Students prepare and serve gourmet meals.

**Prerequisite(s):** HCM 186 - Culinary Foundation I, HCM 187 - Culinary Foundations II, HCM 191 - Quantity Food Production I Lab, HCM 192 - Quantity Food Production II Lab

**Corequisite(s):** HCM 173 - International Cuisine

**HCM 173 - International Cuisine****2.0 Credit(s)****Lecture 2****Lab 0**

International Cuisine provides students the opportunity to research and plan international dinners. Emphasis is on menu and production planning. The course focuses on the pronunciation and definition of culinary terms.

**Prerequisite(s):** HCM 186 - Culinary Foundation I, HCM 187 - Culinary Foundations II, HCM 191 - Quantity Food Production I Lab, HCM 192 - Quantity Food Production II Lab

**Corequisite(s):** HCM 172 - International Cuisine Lab

**HCM 176 - World Cuisine****2.0 Credit(s)****Lecture 2****Lab 0**

World Cuisine studies various ethnic cuisines of the world, cultures, and histories. Emphasis is on current trends and applications as students gain hands on experience.

**HCM 186 - Culinary Foundations I****3.0 Credit(s)****Lecture 3****Lab 0**

Culinary Foundations I introduces students to basic cooking principles. Topics include an overview of kitchen equipment, safety, sanitation, and basic preparation methods that includes soups, salads, sandwiches, breakfast items, vegetables and starches.

**HCM 187 - Culinary Foundations II****3.0 Credit(s)****Lecture 3****Lab 0**

Culinary Foundations II emphasizes techniques in stock and sauce preparation, meats, seafood and poultry. Students also identify various foods in international cuisine and the importance of attractive food presentation.

**Prerequisite(s):** HCM 186 - Culinary Foundations I and HCM 100 - Sanitation and Safety.

**HCM 191 - Quantity Food Production I Lab****4.0 Credit(s)****Lecture 0****Lab 12**

Quantity Food Production I Lab introduces students to basic skills and techniques of cooking. Students prepare food items in the various stations of the professional kitchen, rotating through the kitchen to practice proper use of equipment, safety and sanitation, and to produce basic quality menu items. Students prepare to serve the customer by practice in catering and dining room service.

**HCM 192 - Quantity Food Production II Lab****4.0 Credit(s)****Lecture 0****Lab 12**

Quantity Food Production II Lab continues experiences in the preparation of stocks, sauces, meat, poultry, and seafood items. Students rotate through the stations of a professional kitchen. As students progress, they prepare more advanced menu items and quantity cooking projects.

**Prerequisite(s):** HCM 191 - Quantity Food Production I Lab and HCM 100 - Sanitation and Safety.

**HCM 197 - Regional Wine History****2.0 Credit(s)****Lecture 2****Lab 0**

Regional Wine History gives students a strong, solid foundation for understanding wine, as well as wine and food pairing, and comprehending specific food types with respective food strategies. Students gain knowledge in fundamental wine opening and serving techniques, learn to classify wines according to type, and recognize distinguishing styles and classification methods. Students also discover the wine philosophies and major wine producing areas around the world, leading to the comprehension of different variables needed to arrange and compile an effective wine menu.

**HCM 200 - Dining Service****2.0 Credit(s)****Lecture 1****Lab 3**

Dining Service provides an avenue for personal and professional growth. The areas surveyed include grooming, appearance, attitude, and behavior. Related topics include setting up for service, serving the customer, taking orders, and cashiering that occur in catering functions and gourmet dinners. Students assess how national organizations and global concerns affect careers in the hospitality industry.

**HCM 214 - Culinary Media/Networking****3.0 Credit(s)****Lecture 3****Lab 0**

Culinary Media/Networking explores how the media affects the culinary world through trends, advertising, and business opportunities. It also examines the evolution of the media's development as a tool to reach millions regarding food, food safety, and cooking styles. Students produce a food-related video or audio clip.

**HCM 216 - Pastries****1.0 Credit(s)****Lecture 0****Lab 3**

Pastries provides students an in-depth study of baking emphasizing American and European pastries. Topics include application of different ingredients for fancy cookies, petit fours, puff pastries, pate a choux, meringues, assorted pastes and tarts, icing, fillings, and glazes.

**HCM 217 - Artisan Breads****1.0 Credit(s)****Lecture 0****Lab 3**

Artisan Breads provides students the information, tools, and instruction to gain proficiency in preparation of a variety of artisan breads. Emphasis is placed on learning to mix, ferment, shape, bake, and store hand-crafted breads. Students focus on traditional fermentation, as well as the science of the ingredients. Students learn assembly and speed necessary to increase proficiency in meeting production deadlines with quality products.

**HCM 218 - Cakes****1.0 Credit(s)****Lecture 0****Lab 3**

Cakes builds upon previously learned baking competencies and students apply those skills with new products to create more elaborate tortes and cakes using complex finishing methods. Glaze application, use of decorative sponges, and building multi-component cakes are emphasized. Topics include comparison of classical and modern preparations; classical cakes; glazed, iced, molded, and cream-filled cakes and bombes.

**HCM 219 - International Breads****1.0 Credit(s)****Lecture 0****Lab 3**

International Breads examines the evaluation of bread and yeast products with adaptability in world cuisine. Students prepare an assortment of bread products from around the world, including flatbreads, classic French baguettes, and European rye.

**HCM 220 - Chocolate and Sugar****1.0 Credit(s)****Lecture 0****Lab 3**

Chocolate and Sugar focuses on chocolate and confectionery technology, ingredient function, and the production of chocolates and confections in an artisan setting. Vital concepts in both theory and practice include controlling crystallization of fats and sugars, manipulating water and free water in centers, and understanding the mechanics of emulsions. Ingredient function focuses on fats, nutritive sweeteners, dairy products, binding agents, and chocolate.

**HCM 221 - Cake Decorating****1.0 Credit(s)****Lecture 0****Lab 3**

Cake Decorating introduces students to advanced decorating techniques. Students refine skills with a variety of icings including butter cream, royal icing, and fondant.

**HCM 222 - Convenience Foods****1.0 Credit(s)****Lecture 0****Lab 3**

Convenience Foods studies a variety of convenience items on the market today and teaches students methods for altering these products to improve quality and flavor. This course examines methods of incorporating these items in menus for time saving and consistency. Students evaluate cost and quality compared to scratch baking.

**HCM 223 - Laminated Doughs****1.0 Credit(s)****Lecture 0****Lab 3**

Laminated Doughs provides experience in preparing croissants and Danish. Students learn the techniques for proper handling of laminated dough and learn to recognize quality products.

**HCM 230 - Nutrition and Wellness****3.0 Credit(s)****Lecture 3****Lab 0**

Nutrition and Wellness introduces the science of nutrition and the nutrient value of foods with emphasis on the role of nutrition in maintaining one's well-being. Topics include computer analysis of meals, diet and recipes, as well as the study of the role of fats, carbohydrates, proteins, water, minerals, and vitamins in the diet and recipes. Emphasis centers on the development of healthy foods.

**HCM 240 - Menu Planning and Design****2.0 Credit(s)****Lecture 2****Lab 0**

Menu Planning and Design introduces the concepts of planning menus for institutional and restaurant food service operations with emphasis on customer expectations and how the menu planner identifies those in establishing a workable menu format. Topics include an overview of menu planning considerations, menu marketing and design, and specific criteria for selected restaurants and institutional menus.

**HCM 243 - Soups and Sauces****1.0 Credit(s)****Lecture 1****Lab 0**

Soups and Sauces introduce students to scratch cookery methods through areas of study which include stocks, thickeners, and roux-based sauces. Topics include the five mother sauces, hot and cold butter sauces, emulsion sauces, salsas, sambas, vinaigrettes, and reductions. Cream, clear, and potage soups are also discussed.

**HCM 244 - Soups and Sauces Lab****2.0 Credit(s)****Lecture 0****Lab 6**

Soups and Sauces Lab provides students hands-on cooking experiences in scratch cookery through small batch assignments. Areas of study include stocks, thickeners, and roux-based sauces to include the five mother sauces. Topics include hot and cold butter sauces, emulsion sauces, salsas, sambas, vinaigrettes, and reductions. Cream, clear, and potage soups are prepared.

**HCM 245 - Design and Layout of Food Service Facilities****3.0 Credit(s)****Lecture 3****Lab 0**

Design and Layout of Food Service Facilities investigates the purchase, installation, operation, and routine maintenance of food service equipment. Related topics of design, atmosphere, space allocation and wise energy management will be addressed. The purpose of this class is to discuss the myriad of decisions a new restaurateur or food service manager will be faced with as they enter the industry.

**HCM 246 - Garde Manger/Charcuterie****1.0 Credit(s)****Lecture 1****Lab 0**

Garde Manger/Charcuterie introduces students to traditional upscale pantry preparation. Students learn techniques for artistic displays of hors d'oeuvres, canapés, pâtés, terrines, and charcuterie.

**HCM 247 - Garde Manger/Charcuterie Lab****2.0 Credit(s)****Lecture 0****Lab 6**

Garde Manger/Charcuterie Lab applies techniques in artistic displays of hors d'oeuvres, canapés, pâtés, terrines, and charcuterie. Students gain practical experience preparing and serving theme buffets for guests.

**HCM 248 - A la Carte Cooking****2.0 Credit(s)****Lecture 2****Lab 0**

A la Carte Cooking identifies a la carte cooking methods and fine dining principles. Students gain an appreciation for the role of the menu as a tool in this process. Projects include research of dishes and plate presentations.

**HCM 249 - A la Carte Cooking Lab****4.0 Credit(s)****Lecture 0****Lab 12**

A la Carte Cooking Lab introduces students to line cooking skills for fine dining as well as time budgeting and management. Students work in stations which include salads, broiler, sauté, expeditor, and preparation. Students plan and prepare upscale theme menus.

**HCM 255 - Purchasing****3.0 Credit(s)****Lecture 3****Lab 0**

Purchasing is intended to promote an understanding of the managerial aspects of the hospitality purchasing activity. Emphasis is placed on strategic selection and procurement considerations based on item need, value, and supplier information. The purchasing targets are food, beverage, supplies, equipment, services and furnishings. Particular attention will also be given to product identification and to the receiving, storing, and issuing sequence, as well as to the technological applications and concepts in purchasing.

**HCM 257 - Advanced Baking I****3.0 Credit(s)****Lecture 3****Lab 0**

Advanced Baking I examines baking methods and principles from a nutritional and chemical/physical point of view. Students conduct experiments (using controlled formulas) on various baking ingredients and products in order to develop a better understanding of baking principles.

**Prerequisite(s):** HCM 111 - Principles of Baking I and HCM 112 - Principles of Baking II.

**HCM 258 - Advanced Baking II****3.0 Credit(s)****Lecture 3****Lab 0**

Advanced Baking II is a continuation of Advanced Baking I. Emphasis is on preparation of common products with a variety of ingredients; diets such as vegan, diabetic, and gluten-free; nutritional labels; and preparation of desserts, breads, and cakes for persons with special dietary needs.

**Prerequisite(s):** HCM 257 - Advanced Baking I.

**HCM 267 - Baking Science****2.0 Credit(s)****Lecture 2****Lab 0**

Baking Science takes an in-depth look at how baking works. Students examine ingredients and the role that they play in the overall bake shop product. Students also study chemical reactions and the science behind leaveners and other ingredients.

**Prerequisite(s):** HCM 111 - Principles of Baking I.

**HCM 273 - Baking Seminar****1.0 Credit(s)****Lecture 1****Lab 0**

Baking Seminar gives students a first-hand look at the industry. Industry speakers give presentations and students tour industry facilities. Students discuss current event topics as a primary focus to enhance critical thinking ability as it pertains to the hospitality industry.

**HCM 278 - Cost Control****2.0 Credit(s)****Lecture 1****Lab 2**

Cost Control examines the control process applicable to a food service operation. Emphasis is on the principles of controlling food, beverage, and labor costs. Topics include cost and sales controls that can be established for food and beverage operations. Students analyze labor costs and methods to control them.

**HCM 310 - Hospitality Law****3.0 Credit(s)****Lecture 3****Lab 0**

Hospitality Law introduces the legal considerations of hospitality property management. The course stresses how to keep legal pitfalls from becoming problems.

**HCM 322 - Breads and Pastries****3.0 Credit(s)****Lecture 0****Lab 6**

Breads and Pastries provides students an in-depth study of baking by emphasizing American and European dishes. Students learn to recognize quality products and the techniques for proper handling of breads, pastries, and doughs.

**HCM 323 - Cakes and Chocolates****3.0 Credit(s)****Lecture 0****Lab 6**

Cakes and Chocolates introduces students to advanced baking techniques. Students learn baking competencies and apply those skills to create elaborate baking dishes using complex finishing methods.

**HCM 330 - Hospitality Personnel Management****3.0 Credit(s)****Lecture 3****Lab 0**

Hospitality Personnel Management introduces concepts relevant to managing and communicating in the hospitality organization by presenting a perusal of the managerial process. Topics include personnel planning, organizing, staffing, directing, motivating, and problem-solving skills necessary for effective management. Additional topics cover the development of management as a discipline, theories and styles of management as well as contemporary functions of the managerial role.

**HCM 343 - Recipe Costing and Menu Pricing****2.0 Credit(s)****Lecture 1****Lab 2**

Recipe Costing and Menu Pricing emphasizes that need to develop standardized recipes for costing and menu pricing purposes. Students calculate the cost of recipes and food products and determine portion costs and meal costs. Students evaluate and apply various theories of menu planning.

**HCM 512 - Culinary Internship****2.0 Credit(s)****Lecture 0****Lab 0****Internship 8**

Culinary Internship provides students with work experience related to area of career interest within the hospitality industry. Work experience may be in baking, culinary arts, supervision, or related areas. Hours are arranged.

**Prerequisite(s):** Permission from the instructor.

**HCM 517 - Baking Internship****2.0 Credit(s)****Lecture 0****Lab 0****Internship 8**

Baking Internship provides students with supervised work experience in the area of baking and pastry art. Students select and secure a position in the industry where they are able to apply knowledge and techniques in the baking field. Hours are arranged.

**Prerequisite(s):** Permission from the instructor.

**HCM 525 - Baking Capstone****1.0 Credit(s)****Lecture 0****Lab 3**

Baking Capstone gives students the opportunity to produce a hot dessert, a cold dessert, a product using choux paste, and a yeast bread item. This class must be taken in the student's final semester.

**Prerequisite(s):** Permission from the instructor.

**HCM 532 - Culinary Capstone****2.0 Credit(s)****Lecture 0****Lab 6**

Culinary Capstone gives students an opportunity to plan, arrange, direct and coordinate a menu. The student must also perform a mystery basket skills test during finals week. This class must be taken in the student's final semester.

**Prerequisite(s):** Permission from the instructor.

**HCM 598 - Hotel Front Office Management****3.0 Credit(s)****Lecture 3****Lab 0**

Hotel Front Office Management presents how to perform and manage front office functions and shows how these functions affect the overall operation of a hotel. Emphasis stresses how guest concerns shape management strategies and front office procedures. The course incorporates current technology and discusses the effects of today's multicultural work force, the labor shortage, and the Americans with Disabilities Act.

**HVAC/R Technology****HCR 103 - Introduction to HVAC/R and Safety****3.0 Credit(s)****Lecture 2****Lab 2**

Introduction to HVAC/R and Safety introduces students to OSHA safety standards and the various components, tools, characteristics, and installation techniques of HVAC/R systems. Environmental controls, in regards to temperature, moisture, and air quality, are examined.

**HCR 121 - Forced Air Heating Systems****2.0 Credit(s)****Lecture 1****Lab 2**

Forced Air Heating Systems covers the application of energy sources and equipment as they apply to heating, ventilation, air humidification, and filtration systems.

**HCR 188 - Electricity for HVAC/R****4.0 Credit(s)****Lecture 3****Lab 2**

Electricity for HVAC/R teaches students basic electrical safety, electrical theory, circuit schematics, and circuit characteristics and symbols as it applies to DC and AC circuits in the HVAC/R industry. Electric motor theories, as well as specific information on HVAC/R electrical component devices are covered.

**HCR 201 - Applied Practices I: Repair and Service****4.0 Credit(s)****Lecture 2****Lab 4**

Applied Practices I: Repair and Service provides hands-on practice in servicing and repair of heating and cooling equipment. Students develop a basic understanding of servicing and repair practices as seen in the industry.

**HCR 205 - Air Conditioning Principles****3.0 Credit(s)****Lecture 2****Lab 2**

Air Conditioning Principles provides the fundamentals of residential air conditioning systems to students. It emphasizes system components, types of refrigerants, principles of heat transfer, and diagnosis and repair of various systems used in the air conditioning industry. This course studies relationship to temperature and pressure variance including psychometric comparison as applied to commercial, industrial and residential air conditioning.

**HCR 208 - Boilers and Hydronic Systems****4.0 Credit(s)****Lecture 2****Lab 4**

Boilers and Hydronic Systems identifies concepts, terms, and the major components of steam systems. Basic steam heating cycle and proper safety procedures are reviewed and students learn how to install and maintain specific steam straps and recognize the common piping configurations.

**HCR 250 - Electronic Controls****3.0 Credit(s)****Lecture 2****Lab 2**

Electronic Controls presents and advanced study of electrical controls and applications in HVAC/R systems. Students become knowledgeable in control application.

### **HCR 301 - Applied Practices II: Advanced Repair and Service**

**3.0 Credit(s)**

**Lecture 1**

**Lab 4**

Applied Practices II: Advanced Repair and Service provides hands on experiences in servicing and repairing heating and cooling equipment. Students are presented with difficult service issues on complex equipment.

**Prerequisite(s):** HCR 201 - Applied Practices I: Repair and Service.

### **HCR 348 - Soldering, Piping, and Fitting**

**3.0 Credit(s)**

**Lecture 2**

**Lab 2**

Soldering, Piping, and Fitting teaches the proper way to identify, and size piping and other material that is used in HVAC/R systems.

Students learn cutting, welding, soldering, and brazing of piping.

### **HCR 401 - HVAC/R Capstone**

**4.0 Credit(s)**

**Lecture 2**

**Lab 4**

HVAC/R Capstone examines career path opportunities in the HVAC/R industry in the region and creates real-world experiences to develop decision-making and problem-solving in servicing and maintaining HVAC/R systems.

**Prerequisite(s):** HCR 301 - Applied Practices II: Advanced Repair and Service.

### **HCR 402 - HVAC/R Internship**

**4.0 Credit(s)**

**Lecture 0**

**Lab 0**

**Internship 16**

HVAC/R Internship provides students the opportunity to integrate and apply theory to practice. Students evaluate the job outlook for careers and work in the HVAC/R industry. If a student does not hold a specialty or apprentice license, students can only assist and observe licensed workers during internship.

**Prerequisite(s):** HCR 301 - Applied Practices II: Advanced Repair and Service.

### **HCR 448 - Applied Practices III: Installation**

**3.0 Credit(s)**

**Lecture 1**

**Lab 4**

Applied Practices III: Installation provides a hands-on experience in installing heating and cooling equipment. Students become proficient in the installation of multiple systems.

**Prerequisite(s):** HCR 301 - Applied Practices II: Advanced Repair and Service.

### **HCR 458 - Alternative Energy Sources**

**2.0 Credit(s)**

**Lecture 2**

**Lab 1**

Alternative Energy Sources presents alternative energy sources and equipment as they apply to heating, ventilation, air-cooling and refrigeration systems.

## **Human Services**

### **HSV 109 - Introduction to Human Services**

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Introduction to Human Services examines the nature and types of social welfare in the United States, including the history of the institution of social welfare stemming from its origins in England and continuing into the contemporary period. It also considers an analysis of the philosophy of public welfare, minorities and welfare, politics and welfare, and the future of social welfare in an industrialized society.

### **HSV 115 - Agency and Community Resources**

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Agency and Community Resources explores and analyzes the federal, state, and local programs available for individuals in need of special services. It reviews the history and the emerging controversies in regard to the nature of assistance for youth, the chemically dependent person, the disabled, and the aged. Students review the human services literature to dispel myths and to help understand contemporary issues related to those in need of agency and community assistance. The course focuses on field visits to local agencies and the development of case management skills.

### **HSV 132 - Fundamentals of Case Management**

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Fundamentals of Case Management focuses on collecting data from initial intake through discharge planning regarding a client's individual needs and environment. Using various screening/assessment tools, students learn how to administer, score, and interpret for substance use disorders. Students compile relevant information on clients and how to formulate this information into treatment plans, level of care, and services plans; especially activities that bring together service providers and resources to achieve a treatment and/or service plan. Students formulate and apply related case management documentation such as record keeping, progress notes, treatment planning, level of treatment, and discharge plans. Students learn the importance of ethics and confidentiality as well as how to effectively communicate with clients and service providers.

**Prerequisite(s):** ENG 105 - Composition I.

### **HSV 140 - Social Work and Social Welfare**

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Social Work and Social Welfare serves as an introductory course for the student considering a career in social work. It builds and expands on the Introduction to Human Services course by taking a more in-depth look at historical and current issues in social welfare and the importance of the social work profession in facilitating social change. Students focus on values, beliefs, and goals of social services and the basic functions of social work. The course defines social work as a profession that helps people solve personal, family, and community problems through social work practice.

**HSV 180 - Ethics for Human Service Professionals****1.0 Credit(s)****Lecture 1****Lab 0**

Ethics for Human Service Professionals provides a comprehensive view of behavioral expectations for counselors and human services professionals. The course focuses on the Federal and State laws regarding ethical standards such as non-discrimination, competence, moral and ethical standards, client welfare, dual relationships, confidentiality, informed consent, financial arrangements, and advertising in the additive and human services field. Students study the Iowa Board of Certification (IBC) and the American Counseling Association's (ACA) Code of Ethics. Students learn how to apply a code of ethics to numerous case studies and understand the counselor's ethical and legal obligations to the client and society.

**HSV 190 - Youth Care Issues****3.0 Credit(s)****Lecture 3****Lab 0**

Youth Care Issues is the study of the relationship between youth care and issues facing today's youth. Students explore the impact social services agencies have on the social and psychological development of youth. Topics include child abuse, adolescence and the family, adoption, foster care, residential treatment, emergency shelters, and homeless youth. Students are involved in community based service-learning projects and visit different youth care agencies.

**HSV 225 - Counseling Techniques****3.0 Credit(s)****Lecture 3****Lab 0**

Counseling Techniques is an introductory counseling course. This course examines the theoretical foundations of Psychoanalysis, Existentialism, Client-Centered, Cognitive-Behavioral, Rational-Emotive, Gestalt, and Family systems. Students study and practice various counseling techniques and skills such as establishing rapport, developing empathy, active and reflective listening, how to appropriately use open and close questions, clarification, summarizing, and understanding discrepancies. Students have the opportunity to study different counseling situations, effective communication, and participate in experiential activities that can be directly applied to varied client populations.

**HSV 226 - Fundamentals of Family Counseling****3.0 Credit(s)****Lecture 3****Lab 0**

Fundamentals of Family Counseling introduces the basic principles and processes of family counseling from the initial interview through termination. Students engage in discussion of different theoretical models such as Virginia Satir's Communications Model, Salvador Minuchin's Structural Model, and Murry Bowen's System Model. Students trace own families of origin through genograms and other experiential exercises. The course concludes with each student conducting a live family interview.

**HSV 228 - Group Counseling Techniques****3.0 Credit(s)****Lecture 3****Lab 0**

Group Counseling Techniques introduces group counseling theory and techniques. This course shows how to apply client-centered, Gestalt, cognitive-behavioral, and existential theory while applying the interactive approach to group counseling. Students learn to identify various group dynamics and therapeutic forces that influence counseling group. Group counseling skills such as linking, rounds, process perspective, facilitating interaction, summarizing, clarification, open and closed questions, how to opening and closing a group session are studied. Students have numerous opportunities to practice group counseling skills.

**Prerequisite(s):** HSV 225 - Counseling Techniques.

**HSV 259 - Introduction to Chemical Dependency****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Chemical Dependency covers the history of drug and alcohol use in the context of physiological, psychological, and sociological theories of use, abuse and dependency. Students study the various drug classifications and the related pharmacology of use including signs of use, behavioral characteristics and withdrawal systems. Students also learn the stages of addiction, the dynamics of recovery, and the relapse process.

**HSV 275 - Human Services Capstone****1.0 Credit(s)****Lecture 1****Lab 0**

Human Services Capstone is a class where students will demonstrate understanding of being a human services worker. Students will focus on motives for being a human services worker and evaluate readiness to either enter the job market and/or transfer to a four-year institution.

**Prerequisite(s):** Permission from the instructor.

**Corequisite(s):** HSV 802 - Internship.

**HSV 802 - Internship****2.0 - 6.0 Credit(s)****Lecture 0****Lab 0****Internship 8-24**

Internship provides direct field experience in a human services agency under the direct supervision of agency personnel and with on-site visitation, observation, and assessment by a faculty member.

**Prerequisite(s):** Must have 12 credit hours of Human Services courses and permission from the instructor.

## Humanities

### HUM 122 - American Film

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

American Film is an introductory film course designed to demonstrate the full impact of Hollywood filmmaking as an art form, an economic form, and a cultural indicator. The course looks at the message of genre, the social and psychological effects of the Hollywood film style, and the mutual influence of society and popular culture. Included are discussions of the Hollywood style, the star, the system, the western, the romantic comedy, the combat film, the film noir, and the film school generation.

### HUM 287 - Leadership Development Studies

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Leadership Development Studies provides a basic understanding of the concept of leadership theory while developing a personal philosophy of leadership, an awareness of the moral and ethical responsibilities of leadership, and an awareness of one's own ability and style of leadership. The course provides the opportunity to develop essential skills through study, observation, and application.

## Industrial Technology

### IND 109 - Equipment Safety and Operation

**3.0 Credit(s)**

**Lecture 2**

**Lab 2**

Equipment Safety and Operation provides an overview of commonly used safety precautions and operation of tools and equipment. This course introduces PPE (Personal Protective Equipment), CPR (Cardio Pulmonary Resuscitation), First Aid, OSHA (Occupation Safety and Health Administration), and safety practices and procedures.

### IND 113 - Utility Industry Orientation

**1.0 Credit(s)**

**Lecture 0**

**Lab 2**

Utility Industry Orientation gives a general overview of the utility industry with a focus on natural gas. Course includes safety concerns, tool recognition, high level utility structure and some equipment operation of the utility industry.

### IND 125 - Introduction to Process Controls

**3.0 Credit(s)**

**Lecture 2**

**Lab 2**

Introduction to Process Controls provides students the terminology and the function of basic devices for measuring and controlling different kinds of variables in process control. It introduces control systems, controller circuit design, controller operation, maintenance, alignment, calibration, and tuning closed-loop control.

### IND 131 - Interpret UT Maps and Drawings

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Interpret UT Maps and Drawings will instruct the student on how to interpret maps and applying the knowledge in new construction, switching, repairing, and maintaining utility systems.

### IND 133 - Occupational Safety

**1.0 Credit(s)**

**Lecture 0**

**Lab 2**

Occupational Safety provides an overview on work site safety. Emphasis is on obtaining locates, proper personal protective equipment, and OSHA work place regulations.

### IND 187 - Predictive Maintenance

**2.0 Credit(s)**

**Lecture 1**

**Lab 2**

Predictive Maintenance covers all facets of predictive maintenance, including thermal imaging vibration analysis, trend analysis, and tool and equipment operation. This course reinforces concepts and theory covered in lecture and online material with hands-on labs.

### IND 191 - Preventative Maintenance

**2.0 Credit(s)**

**Lecture 1**

**Lab 2**

Preventative Maintenance covers all facets of preventative maintenance, including scheduling, data collection, administration and actual performance of PM's. This course reinforces concepts and theory covered in lecture with hands-on labs. Students will review production components of material storage, inventory, and standard operating procedures.

### IND 197 - Industrial Engineering Technology Orientation

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Industrial Engineering Technology Orientation explores career options in automation, robotics, electronics, sustainable energy, and industrial careers. Students are provided direction for choosing a field within these disciplines. Students learn problem-solving skills, and develop an educational plan of study.

### IND 930 - Industrial Internship

**4.0 Credit(s)**

**Lecture 0**

**Lab 0**

**Internship 16**

Industrial Internship provides work experience related the student's career interests. This course allows students to integrate and apply theory to practice. These skills will benefit the employer, and enhance the employability of the student with increased technical skills.

## Journalism

### JOU 110 - Introduction to Mass Media

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Introduction to Mass Media examines the roles, organization, structure, and characteristics of the mass media. The types of mass media and issues include: newspapers, magazines, advertising, cable, public relations, broadcasting, mass media law, and cinema. Students also assess the effects of the mass media on society.

### JOU 211 - Ethics in the Media

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Ethics in the Media introduces the judicial, legislative, and administrative policies pertinent to the ethical and legal operation of newspapers and other print media. Emphasis is placed upon First Amendment protection, libel, privacy, free press, fair trial, judicial controls, government regulations, copyright, and ethical standards and practices. Upon completion, students will have an understanding and appreciation of these issues and the ability to analyze the important legal and ethical issues involved.

**Note(s):** Co-numbered with PHI 211

## Laser Electro-Optics Tech

### LEO 230 - Fundamentals of Light and Lasers

**5.0 Credit(s)**

**Lecture 3**

**Lab 4**

Fundamentals of Light and Lasers provides students a comprehensive study of photonics. This course provides the foundation required to prepare technicians in the areas of optics, electro-optics, lasers, and photonics.

### LEO 340 - Laser Systems and Applications I

**5.0 Credit(s)**

**Lecture 3**

**Lab 4**

Laser Systems and Applications I presents more advanced concepts in photonics and the operating principles, output characteristics, diagnostics, and applications for the most widely used laser types. The course describes and classifies the lasers according to active medium, output wavelength, and applications.

**Prerequisite(s):** LEO 230 - Fundamentals of Light and Lasers.

### LEO 360 - Lasers in Manufacturing

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Lasers in Manufacturing provides a broad examination of various laser applications used in modern manufacturing processes. The course is divided into four modules: Laser Material Removal: Drilling, Cutting, and Marking; Laser Welding and Surface Treatment; Alignment, Profiling, and Position Sensing; and Interferometric and Nondestructive Testing.

### LEO 450 - Laser Systems and Applications II

**5.0 Credit(s)**

**Lecture 3**

**Lab 4**

Laser Systems and Applications II covers more advanced concepts in photonics and the operating principles, output characteristics, diagnostics, and applications for the most widely used laser types. The course describes and classifies lasers according to active medium, output wavelength, and applications.

**Prerequisite(s):** LEO 340 - Laser Systems and Applications I.

## Literature

### LIT 101 - Introduction to Literature

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Introduction to Literature is an introduction to the fiction, poetry, and drama genres. Emphasis is placed on readings of classical and contemporary literature that enable the understand of literary elements as well as the works' historical, cultural, and/or critical significance.

### LIT 134 - Multicultural Literature

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Multicultural Literature explores through a variety of literary types the cultural and ethnic voices that are an undeniable part of modern American life. Students read, discuss, and critique materials by authors representing a wide range of ethnic, racial, and other culturally diverse groups. Emphasis centers on the assessment and appreciation of the strengths and values that cultural diversity brings to contemporary American society.

**Note(s):** Meets diversity requirement for graduation.

### LIT 140 - British Literature I

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

British Literature I surveys the literature of Britain from the Old English Period to the eighteenth century with emphasis on the major authors of each century. Students apply several methods of literary analysis to interpret the literature of this time period.

### LIT 141 - British Literature II

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

British Literature II surveys the literature of Britain from the Romantic Era to the present with emphasis on the major authors of the past two centuries. Students apply several methods of literary analysis to interpret the literature of this time period.

### LIT 160 - Short Story/Novel

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Short Story/Novel offers an introduction to the novels and short stories of the world with emphasis upon distinguished works by representative authors. Students apply several methods of literary analysis to interpret the works.

## Medical Assistant

### MAP 123 - Administrative Medical Office Procedures

**3.0 Credit(s)**

**Lecture 2**

**Lab 2**

Administrative Medical Office Procedures introduces students to the administrative aspects of the medical office. This course includes content in written communication, medical records management, scheduling, and telephone techniques. Medical law and ethics are introduced. Basic knowledge of medical transcription is included.

### MAP 131 - Advanced Medical Office Procedures

**4.0 Credit(s)**

**Lecture 3**

**Lab 2**

Advanced Medical Office Procedures is the continuation of Administrative Medical Office Procedures. This course includes content in basic bookkeeping, medical insurance and billing, electronic health records, and basic procedural and diagnostic coding.

### MAP 215 - Medical Laboratory Techniques

**4.0 Credit(s)**

**Lecture 3**

**Lab 2**

Medical Laboratory Techniques involves preparation of specimens for laboratory analysis. Techniques include urinalysis, blood counts, simple chemistries, and other routine tests performed in the physician's office as well as a study of normal and diagnostic values of laboratory tests. Techniques of quality control are emphasized.

**Prerequisite(s):** HSC 128 - Anatomy and Physiology for Allied Health Programs and MAP 353 - Clinical Procedures I.

### MAP 353 - Clinical Procedures I

**4.0 Credit(s)**

**Lecture 2**

**Lab 4**

Clinical Procedures I introduces the student to the clinical aspects of the medical office. Emphasis is placed on the fundamental skills necessary to assist the provider in a medical practice. Therapeutic communication skills are introduced. First Aid, CPR, and safety are included.

### MAP 363 - Clinical Procedures II

**5.0 Credit(s)**

**Lecture 3**

**Lab 4**

Clinical Procedures II is a continuation of Clinical Procedures I. This course introduces the student to techniques used in assisting in medical specialties including Pediatrics, Gerontology, Obstetrics and Gynecology, Cardiology, Ear Nose and Throat, Orthopedics, Radiology, and Minor Surgery. Basic nutrition is introduced.

**Prerequisite(s):** MAP 353 - Clinical Procedures I.

### MAP 514 - Basics of Pharmacology

**3.0 Credit(s)**

**Lecture 2**

**Lab 2**

Basics of Pharmacology introduces the student to the basics of drug therapies as they relate to illness. The course includes dosage calculations and administration.

### MAP 533 - Diseases and Disorders

**2.0 Credit(s)**

**Lecture 2**

**Lab 0**

Diseases and Disorders introduces the student to diseases and disorders frequently encountered in the medical office setting. Focus is placed on causes, signs and symptoms, diagnostic procedures, usual treatment modalities, prognosis, and prevention.

### MAP 601 - Medical Assistant Seminar

**1.0 Credit(s)**

**Lecture 1**

**Lab 0**

Medical Assistant Seminar emphasizes group discussion and individual conferences on clinical experiences. The course includes preparation for the certification exam through the use of practice tests.

**Corequisite(s):** MAP 612 - Medical Assistant Externship.

### MAP 612 - Medical Assistant Externship

**3.0 Credit(s)**

**Lecture 0**

**Lab 0**

**Internship 12**

Medical Assistant Externship gives experience in a selected physician's office under the supervision of the office staff. This experience provides students with practical application of theory previously learned in the Medical Assistant program.

## Management

### MGT 101 - Principles of Management

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Principles of Management provides a general introductory study of the role of management in today's business and industry environment. Historical as well as contemporary theories and influences are presented. The functional responsibilities of a manager are discussed, along with evolving issues related to e-business.

### MGT 130 - Principles of Supervision

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Principles of Supervision presents an overview of the responsibilities of a first-line supervisor. It covers fundamental supervisory skills. Topics include the role of a supervisor in communications, motivation, job coaching, group dynamics, human relations, performance appraisal, and other relevant issues.

### MGT 138 - Employee Evaluation and Training Techniques

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Employee Evaluation and Training Techniques is an introduction to the planning and development of training programs within an organization. The course covers topics such as training, employee development, evaluation of employee job performance, performance appraisals, discipline, and reward systems.

**MGT 165 - Principles of Quality****3.0 Credit(s)****Lecture 3****Lab 0**

Principles of Quality provides a survey of the concept of quality and its role in business and industry. Students examine theories related to process and product improvement and techniques for determining and controlling quality.

**MGT 170 - Human Resource Management****3.0 Credit(s)****Lecture 3****Lab 0**

Human Resource Management details how to create a positive working environment through proper recruitment, selection, training, development, and evaluation.

**MGT 175 - Introduction to Law for Managers and Supervisors****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Law for Managers and Supervisors surveys the role of the legal system as a control agency for business practices and techniques in both a traditional and electronic commerce environment. It overviews the court system, administrative agencies related to business operations and employee relations, and other common legal issues.

**MGT 180 - Management and Labor Relations****3.0 Credit(s)****Lecture 3****Lab 0**

Management and Labor Relations is the study of the labor union movement and its present role in the work environment. Topics include applicable laws and regulations, the collective bargaining process, mediation, arbitration, and the grievance process. Current employer/employee issues are discussed.

**MGT 190 - Employee Compensation and Benefits Management****3.0 Credit(s)****Lecture 3****Lab 0**

Employee Compensation and Benefits Management presents a study of employee compensation and benefits systems. Topics include salary survey and planning strategies as well as job analysis and organizational policies. Employee benefit plans including health delivery systems, retirement, investment, and worker's compensation are discussed.

**MGT 195 - Workplace Empowerment****3.0 Credit(s)****Lecture 3****Lab 0**

Workplace Empowerment presents a variety of effective methods to find, secure, and retain quality jobs and careers in a global, multicultural environment, and focuses on 21st Century employability skills. It provides fundamental understanding of economics, diversity, globalization, entrepreneurship, and related topics, and develops skills and knowledge in negotiation, time management, workplace law, business customs and other areas relevant to workplace success. Interview skills are also a prime focus, as is the development of a high quality portfolio in both traditional and electronic formats.

**Note(s):** Meets diversity requirement for graduation.

**MGT 932 - Internship****1.0 - 8.0 Credit(s)****Lecture 0****Lab 0****Internship 4-32**

Internship provides work experience related to the students' career interests. The course allows students to integrate and apply theory to practice. Work experience hours are arranged.

**Prerequisite(s):** Permission from the instructor.

**Manufacturing****MFG 121 - Machine Trade Printreading I****2.0 Credit(s)****Lecture 2****Lab 0**

Machine Trade Printreading I provides students with terminology, abbreviations, and the alphabet of lines. Interpretation of drawings progresses from single-view drawings to multi-view projections. Orthographic projection and pictorial interpretation is facilitated through visualization exercises in the course. The course teaches surface texture symbols, casting drawings, sectional views, steel specifications, thread specifications, drawing revisions, metric drawings, and computer-aided drawings.

**MFG 145 - Light Machining for Maintenance Trades****4.0 Credit(s)****Lecture 2****Lab 4**

Light Machining for Maintenance Trades covers machine and shop safety, machine theory, blueprint reading, tolerances, tooling selection, machine feed and speed, and proper usage of manual knee mills and manual lathes. Emphasis is on print reading, mill and lathe usage, and machine maintenance in a hands-on lab setting.

**MFG 156 - Introduction to CNC Machining****3.0 Credit(s)****Lecture 2****Lab 2**

Introduction to CNC Machining introduces basic operations of CNC machines. The course covers basic and advanced tooling, programming, and CAM software. Students work as a team, use critical thinking skills and problem solve through hands-on experience and practical applications.

**MFG 211 - Basic Machine Theory****2.0 Credit(s)****Lecture 2****Lab 0**

Basic Machine Theory presents basic machining processes and concepts necessary to set up and operate machine shop equipment.

**MFG 222 - Machine Operations I****4.0 Credit(s)****Lecture 2****Lab 4**

Machine Operations I teaches students the basic operations on lathes, horizontal and vertical milling machines, drilling machines, saws, various types of grinders, and precision measuring equipment.

**MFG 228 - Machine Operations II****4.0 Credit(s)****Lecture 2****Lab 4**

Machine Operations II teaches students advanced operations on lathes, horizontal and vertical milling machines, drilling machines, saws, various types of grinders, and precision measuring equipment.

**Prerequisite(s):** MFG 222 - Machine Operations I.

**MFG 291 - CNC Mill Operator (NIMS)****2.0 Credit(s)****Lecture 1****Lab 2**

CNC Mill Operator (NIMS) introduces basic milling operations. Students learn manual and CNC milling practices, tooling, machining practices, and applied mathematics. This course emphasizes teamwork, critical thinking, and problem-solving through hands-on experience and practical applications.

**MFG 334 - CNC Lathe Program and Setup****2.0 Credit(s)****Lecture 1****Lab 2**

CNC Lathe Program and Setup introduces basic CNC operations. Students learn setup and operation practices pertaining to CNC programming language using G&M codes. This course emphasizes teamwork, critical thinking, and problem-solving through hands-on experience and practical applications.

**MFG 359 - CNC Programming and Operations****4.0 Credit(s)****Lecture 2****Lab 4**

CNC Programming and Operations prepares students to program and operate CNC equipment with G&M codes. Students create basic tool paths on the CNC equipment from a given print. This course gives students hands-on experience in the basic setup and operation of production-type equipment.

**Prerequisite(s):** MFG 156 - Introduction to CNC Machining.

**MFG 420 - Jig and Fixture Design****2.0 Credit(s)****Lecture 1****Lab 2**

Jig and Fixture Design prepares students for the theory of design and machining practices as they relate to jigs and fixtures used in manufacturing facilities. This course introduces students to the importance of jig and fixture classification and to uses in modern machine tools.

**Marketing****MKT 110 - Principles of Marketing****3.0 Credit(s)****Lecture 3****Lab 0**

Principles of Marketing concerns the role of marketing in society, consumer behavior, product management, distribution, pricing concepts, strategic planning, and promotional activity within a business environment.

**MKT 140 - Principles of Selling****3.0 Credit(s)****Lecture 3****Lab 0**

Principles of Selling introduces the fundamental principles of selling, including the basic steps of the selling process. Emphasis centers on communication with the customer and a problem-solving approach to sales.

**MKT 150 - Principles of Advertising****3.0 Credit(s)****Lecture 3****Lab 0**

Principles of Advertising explores the communication element of the marketing mix. It covers topics of advertising, personal selling, publicity/public relations, and direct marketing.

**MKT 154 - Visual Merchandising****3.0 Credit(s)****Lecture 3****Lab 0**

Visual Merchandising introduces the specifics of window, interior, point-of-purchase, and exhibition displays. Students make on-site visits to business displays as well as plan and prepare displays.

**MKT 163 - Merchandising****3.0 Credit(s)****Lecture 3****Lab 0**

Merchandising examines the world of retail marketing, the environments of retailing, the retailer's resources, and the evaluation of retail markets. Emphasis centers on decision-making through the use of case problems.

**MKT 165 - Retail Management****3.0 Credit(s)****Lecture 3****Lab 0**

Retail Management covers retail site location, designing, staffing, and organizing the retail store. It encompasses developing the retail offering and getting the merchandise into the store, developing and controlling the merchandise plan, and setting and adjusting retail prices. Emphasis centers on decision-making through the use of case problems.

**MKT 184 - Customer Service****3.0 Credit(s)****Lecture 3****Lab 0**

Customer Service develops the necessary skills required to be successful as a frontline service provider.

**MKT 185 - Marketing Internship I****2.0 Credit(s)****Lecture 0****Lab 0****Internship 8**

Marketing Internship I allows each student to spend 8 hours per week in a retail business to allow him/her to apply classroom skills learned in a practical situation. The training plan is supervised by a teacher-program chair.

**MKT 189 - Marketing Internship II****2.0 Credit(s)****Lecture 0****Lab 0****Internship 8**

Marketing Internship II allows each student to spend 8 hours per week in a retail business to allow him/her to apply classroom skills learned in a practical situation. The training plan is supervised by a teacher-program chair.

**MKT 190 - International Marketing****3.0 Credit(s)****Lecture 3****Lab 0**

International Marketing introduces terms used in international marketing and sources of information on international markets. Development of sensitivity toward foreign business environment and familiarity with operations of multinational corporations are covered. The course is designed to provide experiences in culture, social, economic, and political environment of marketing in a foreign country.

**Note(s):** Meets diversity requirement for graduation.

**MKT 191 - Seminar I: Career Options****1.0 Credit(s)****Lecture 1****Lab 0**

Seminar I: Career Options discusses students work experience and provides an opportunity to explore career area options through guest speakers representing various careers.

**MKT 193 - Seminar II: Applications in Management****1.0 Credit(s)****Lecture 1****Lab 0**

Seminar II: Applications in Management focuses on realistic situations in five basic retailing components: merchandising, sales promotion, personnel, finance, and control and operations.

**MKT 198 - Sports Marketing****3.0 Credit(s)****Lecture 3****Lab 0**

Sports Marketing surveys the basic marketing concepts and theories as they apply to sports and sporting events. Students explore the dynamic environment of the sporting industry and apply the elements of the marketing mix to this ever-changing environment. Using a contingency framework to guide the strategic sports marketing process, the course takes a strategic business perspective and a look behind-the-scenes of research, consumer behavior, sponsorship, licensing, event marketing, and implementation of sports marketing plans.

**Prerequisite(s):** MKT 110 - Principles of Marketing.

**MKT 300 - Sports Marketing Internship****1.0 - 8.0 Credit(s)****Lecture 0****Lab 0****Internship 4-32**

Sports Marketing Internship provides students the opportunity to integrate and apply theory to practice. Students evaluate the job outlook for careers in sports and event marketing and establish networks in the field. This course may be repeated for a maximum of 8 credit hours.

**Prerequisite(s):** Permission from the instructor.

**Mass Media Studies****MMS 105 - Audio Production****3.0 Credit(s)****Lecture 1****Lab 4**

Audio Production introduces students to state of the art audio equipment and software usage. Students learn basic skills in recording and editing of commercials and announcements, including use of the mixing console, microphones, editing software and recording skills. Students will learn proper voice techniques and other production skills.

**MMS 107 - Sports Field Production****3.0 Credit(s)****Lecture 1****Lab 4**

Sports Field Production is designed to allow students hands-on practical experience in field productions. Students apply skills learned in previous courses to produce sports productions ready for visual broadcast purposes.

**Prerequisite(s):** MMS 113 - Introduction to Media Production.

**MMS 113 - Introduction to Media Production****3.0 Credit(s)****Lecture 1****Lab 4**

Introduction to Media Production will introduce students to television studio production. Approximately 75 percent of the course will be devoted to hands-on application producing programs and completing exercises in lab. The remainder of the course will focus on material covered in lecture and reading assignments. Students will be producing programs and segments to air on Iowa Western Media and to upload to the Web.

**MMS 114 - Media Production II****3.0 Credit(s)****Lecture 1****Lab 4**

Media Production II is designed to enhance a student's production skills by emphasizing strong storytelling techniques through the application of digital editing. Participants will learn to develop story ideas, write scripts, edit segments and packages to meet deadlines and work individually and in teams to supply Iowa Western Media and web site content as assigned. Approximately 75 percent of the course will be devoted to hands-on application of material covered in lecture. Students will produce a variety of both short and long form programs.

**MMS 123 - Electronic Media Performance****3.0 Credit(s)****Lecture 2****Lab 2**

Electronic Media Performance covers both the theoretical and practical applications of announcing. Students learn the organizational aspects of show preparation, use of the voice in delivery of various material, microphone and camera presence, and interviewing styles and techniques. Students have direct experience in the production of various projects.

**MMS 134 - Media Writing****3.0 Credit(s)****Lecture 3****Lab 0**

Media Writing is designed to introduce the student to writing for the media in all forms: radio, television, social media and organizational. These relationships will emphasize storytelling concepts and treatments with considerable emphasis on the content creation. Students learn to write for medial organizations using professional techniques and strategies. They also learn the proper writing techniques of AP style and utilize it to create effective media content.

**Prerequisite(s):** A grade of "C" or higher in ENG 105 - Composition I.

**MMS 152 - Spring Sports Announcing****3.0 Credit(s)****Lecture 3****Lab 0**

Spring Sports Announcing is a course designed to allow students opportunities to learn organizational and performance skills, including play-by-play reporting and research for various athletic events featured during the spring semester, including basketball, hockey, baseball, and softball.

**Prerequisite(s):** MMS 123 - Electronic Media Performance.

**MMS 186 - Digital Media Analytics****3.0 Credit(s)****Lecture 3****Lab 0**

Digital Media Analytics provides students with the tools necessary to navigate and utilize an ever-changing digital landscape. Students learn how to locate audiences and provide timely, targeted content based on social media analytics and theoretical insights. Students explore how various channels of digital media can be used to communicate to a growing and unique demographic.

**MMS 190 - Broadcast Promotions****3.0 Credit(s)****Lecture 1****Lab 4**

Broadcast Promotions is designed to teach the integral aspects of promotions for various electronic media. Students learn how to calculate promotional value, find non-traditional revenue sources, and create engaging contests and events. This course allows students to plan and implement creative promotional activities for use on KIWR, Iowa Western Media and the Reiver Sports Network.

**MMS 202 - Social Media Marketing****3.0 Credit(s)****Lecture 3****Lab 0**

Social Media Marketing introduces students to content creation, analytics and ethics that relate to social media and the current trends inside the industry. Students learn how to engage customers on various social media platforms and develop integrated social media marketing strategies. This course also covers legal and ethical issues in social media marketing.

**MMS 204 - New Media Production****3.0 Credit(s)****Lecture 2****Lab 2**

New Media Production introduces students to the new media techniques and software, applications, and websites associated with new media. Students will work with video clips, photos, music, text and special effects to create features for outputting to the web and traditional media sources.

**MMS 205 - Advanced Audio Production****3.0 Credit(s)****Lecture 1****Lab 4**

Advanced Audio Production is designed to facilitate individual growth within the audio production for radio. Students learn advanced skills in audio production including, but not limited to, refined use of the voice, digital editing, use of sound effects, complex music editing, interviewing techniques, development of short form production including liners, sweepers, and legal ID's.

**Prerequisite(s):** MMS 105 - Audio Production.

**MMS 216 - Social Media Capstone****4.0 Credit(s)****Lecture 2****Lab 4**

Social Media Capstone requires students to produce and maintain a rich social media campaign using social media marketing strategies and social media production techniques.

**MMS 231 - Advanced Video Production I****3.0 Credit(s)****Lecture 1****Lab 4**

Advanced Video Production I is designed to increase expertise within the video production field, including use of graphics, advanced editing techniques, lighting, sound, and camera work. Although individual students learn advanced production techniques and skills, all students work in teams to learn various job responsibilities within a commercial station/cable system.

**Prerequisite(s):** MMS 113 - Introduction to Media Production.

**MMS 296 - Video Practicum I****1.0 Credit(s)****Lecture 0****Lab 4**

Video Practicum I is designed to allow students hands-on practical experience in applying skills learned in video production. Students will be able to use writing and production skills to assist in producing media programs that will be aired on Iowa Western Media or made available to individual programs within the college.

**MMS 297 - Video Practicum II****1.0 Credit(s)****Lecture 0****Lab 4**

Video Practicum II allows advanced students to work with station personnel and faculty to research, plan and execute programs to be aired on Iowa Western Media and to the web. This class is intended to teach students to assemble story ideas and develop sources for stories. This course will expose students to real world production decisions with class members serving as producers for on-going productions. Students will be able to use writing and production skills to direct media programs.

**Prerequisite(s):** A grade of "C" or higher in MMS 296 - Video Practicum I.

**MMS 301 - Video Practicum III****2.0 Credit(s)****Lecture 0****Lab 4**

Video Practicum III allows students practical hands-on experience in producing media content that will be aired on Iowa Western Media or uploaded to the Web. Students will be responsible for meeting daily and/or weekly deadlines in the completion of this content. Students will assume supervisory roles in getting stories produced in a timely manner.

**Prerequisite(s):** MMS 297 - Video Practicum II.

**MMS 306 - Sports Media Practicum I****1.0 Credit(s)****Lecture 0****Lab 4**

Sports Media Practicum I gives students an introduction to sports radio broadcasting, video production and print media. Students will learn to operate video and audio equipment, gather information used in writing and reporting, and learn basic editing skills.

**MMS 307 - Sports Media Practicum II****1.0 Credit(s)****Lecture 0****Lab 4**

Sports Media Practicum II focuses on skill development in sports radio broadcasting, video production, and print media. Students will develop on-air performance, use basic editing techniques, use information and statistics for broadcasts and publications, and write for various types of media.

**Prerequisite(s):** A grade of "C" or higher in MMS 306 - Sports Media Practicum I.

**MMS 308 - Sports Media Practicum III****1.0 Credit(s)****Lecture 0****Lab 4**

Sports Media Practicum III focuses on skill development in sports radio broadcasting, video production, and print media. Students will develop on-air performance based on the needs of the target audience, use advanced editing techniques, gather information and statistics for broadcasts and publications, and write for various types of media.

**Prerequisite(s):** A grade of "C" or higher in MMS 307 - Sports Media Practicum II.

**MMS 309 - Sports Media Practicum IV****1.0 Credit(s)****Lecture 0****Lab 4**

Sports Media Practicum IV synthesizes student learning from previous Sports Media Practicum courses. Students will create short and long form audio and video projects. Students will use advanced performance and editing techniques to plan, create, and air visual and audio pieces. This course exposes students to leadership roles, deadlines and real world media situations.

**Prerequisite(s):** A grade of "C" or higher in MMS 308 - Sports Media Practicum III.

**MMS 311 - Podcasting****3.0 Credit(s)****Lecture 3****Lab 0**

Podcasting facilitates individual growth as an audio performer. Students learn advanced skills including vocal performance, show preparation, show design, interviewing, remote performance, character development, and marketing. Students create a show and grow it throughout the semester, including a heavy focus on marketing and social media.

**Prerequisite(s):** N/A

**Corequisite(s):** N/A

**MMS 312 - Photojournalism****3.0 Credit(s)****Lecture 3****Lab 0**

Photojournalism teaches students to create non-fiction visual images that tell the stories of people, social issues, and events for diverse and modern media outlets, including digital and print media. Students learn to create and publish still photographic images that document cultural diversity. Students learn photojournalism fundamentals including picture gathering, editing, and publishing.

**Prerequisite(s):** None

**Corequisite(s):** None

**MMS 313 - Digital Communication Arts Practicum I****1.0 Credit(s)****Lecture 1****Lab 0**

Digital Communication Arts Practicum I allows students to apply skills learned in coursework to produce multimedia journalism packages such as video, audio, and social media. Practicum I will focus on audio. Students produce audio projects for IWCC media, and outside media entities.

**Prerequisite(s):** None

**Corequisite(s):** None

**MMS 314 - Digital Communication Arts Practicum II****1.0 Credit(s)****Lecture 1****Lab 0**

Digital Communication Arts Practicum II allows students to apply skills learned in coursework to create multimedia journalism packages such as video, audio, and social media. Practicum II focuses on audio. Students produce video projects for IWCC media and outside media entities.

**Prerequisite(s):** Digital Communication Arts Practicum I

**MMS 315 - Digital Communication Arts Practicum III****1.0 Credit(s)****Lecture 1****Lab 0**

Digital Communication Arts Practicum III allows students to apply skills learned in coursework to create multimedia journalism packages that include video, audio, and social media. Practicum III focuses on social media and digital. Students create branded content for IWCC media and outside media entities.

**Prerequisite(s):** Digital Communication Arts Practicum II**Corequisite(s):** None**MMS 316 - Broadcasting and Streaming Online****3.0 Credit(s)****Lecture 3****Lab 0**

Broadcasting and Streaming Online provides students the tools and skills needed to create advanced video content for streaming devices. Students learn camera positioning, use of graphics, and how to add sound effects and music effectively. Students learn how to market video content and grow a channel from inception. Students utilize analytical data to determine audience targets and posting times.

**Prerequisite(s):** N/A**Corequisite(s):** N/A**MMS 317 - Digital Content Creation****3.0 Credit(s)****Lecture 3****Lab 0**

Digital Content Creation provides students with the tools and skills needed to design specific content for brands and organizations. Students use design techniques to create specific content for projects including, but not limited to, social media posts, audio hits, video clips and traditional print material.

**MMS 338 - Radio Practicum I****1.0 Credit(s)****Lecture 0****Lab 4**

Radio Practicum I is the first practicum students take to learn various aspects of working on-air. Students will learn how to operate production and control room equipment, as well as how to organize and actualize a standard transition. Students are required to attend various station activities and meet station expectations as an on-air staff member.

**MMS 341 - Radio Practicum II****1.0 Credit(s)****Lecture 0****Lab 4**

Radio Practicum II is designed for those students who wish to continue learning on-air techniques and other station procedures. Students will be critiqued weekly on organizational and performance abilities. Students are required to attend various station activities and meet station expectations as an on-air staff member.

**Prerequisite(s):** A grade of "C" or higher in MMS 338 - Radio Practicum I.**MMS 342 - Radio Practicum III****1.0 Credit(s)****Lecture 0****Lab 2**

Radio Practicum III is designed for those students who wish to continue learning on-air techniques and various radio station procedures. Students are expected to develop an effective on-air personality through the understanding of a target audience. Students will be critiqued weekly on organizational and performance abilities. Students are required to attend various station activities and meet station expectations as an on-air staff member.

**Prerequisite(s):** A grade of "C" or higher in MMS 341 - Radio Practicum II.**MMS 350 - Media Sales Practicum****1.0 Credit(s)****Lecture 0****Lab 4**

Media Sales Practicum gives students practical experience in media sales. The course emphasizes relationship building and the creation of a usable client list. Students synthesize learning from previous sales course to sell and to build own sales portfolio. Students sell for IWCC media.

**MMS 933 - Media Studies Internship****2.0 Credit(s)****Lecture 0****Lab 0****Internship 8**

Media Studies Internship provides media students with industry experience in a variety of media professions. Students will seek and secure employment or internships with industry partners and apply learned skills to benefit the work site. Students work under the direct supervision of instructor and the supervisors and staff at the work site.

**Prerequisite(s):** Only media studies majors have permission to enroll in this course.**Mathematics****MAT 057 - Statistics Success****2.0 Credit(s)****Lecture 2****Lab 0**

Statistics Success will concentrate on the development of study skills, math skills, and statistical concepts. Designed to support students for success in Statistics.

**Corequisite(s):** MAT 157 - Statistics.**Note(s):** College preparatory courses cannot be used to fulfill degree requirements.**MAT 102 - Intermediate Algebra****4.0 Credit(s)****Lecture 4****Lab 0**

Intermediate Algebra will prepare the student for College Algebra and Trigonometry or other equivalent coursework. Topics include properties of real numbers, linear and quadratic equations, graphs of polynomial functions, systems of equations, polynomial and rational expressions, inequalities, integral and rational exponents, radicals and logarithms.

**Prerequisite(s):** Math placement

**MAT 114 - Elementary Educators Math I****3.0 Credit(s)****Lecture 3****Lab 0**

Elementary Educators Math I covers topics from both a practical and theoretical standpoint, with an emphasis on practical understanding using concrete examples. Course content includes problem solving, systems of whole numbers, numeration, algorithms for computation, topics from number theory, and topics from geometry including measurement, polygons, polyhedra, congruence and transformations. This course is for students in education fields and is not appropriate for students majoring in other areas. This is not a methods course.

**MAT 121 - College Algebra****4.0 Credit(s)****Lecture 4****Lab 0**

College Algebra provides an intensified study of the topics in algebra and prepares students for higher levels of mathematics. Topics include functions, exponents, logarithms, systems of equations, matrices, polynomials, and conic sections.

**Prerequisite(s):** Math placement; or a grade of "C" or higher in MAT 102 - Intermediate Algebra.

**Note(s):** Students cannot receive credit for MAT 129 - Precalculus as well as MAT 121 College Algebra and/or MAT 130 - Trigonometry.

**MAT 129 - Precalculus****5.0 Credit(s)****Lecture 5****Lab 0**

Precalculus is an intensive review of College Algebra and Trigonometry and prepares students for Calculus. Topics include functions, logarithms, systems of equations, matrices, polynomials, conic sections, trigonometric functions, graphs, identities, equations, complex numbers, and polar coordinates.

**Prerequisite(s):** Math placement; or a grade of "B" or higher in MAT 102 - Intermediate Algebra.

**Note(s):** Students cannot receive credit for MAT 129 Precalculus as well as MAT 121 - College Algebra and/or MAT 130 - Trigonometry.

**MAT 130 - Trigonometry****3.0 Credit(s)****Lecture 3****Lab 0**

Trigonometry includes trigonometric functions, graphs, identities, solving triangles, vectors, trigonometric equations, complex numbers, and polar coordinates.

**Prerequisite(s):** Math placement; or grade of "C" or higher in MAT 102 - Intermediate Algebra.

**Note(s):** Students cannot receive credit for MAT 129 - Precalculus as well as MAT 121 - College Algebra and/or MAT 130 Trigonometry.

**MAT 157 - Statistics****4.0 Credit(s)****Lecture 4****Lab 0**

Statistics introduces descriptive and inferential statistics. Topics include the binomial, normal, student-t and chi-square distributions, descriptive measures, probability, hypothesis testing, estimation and linear regression.

**Prerequisite(s)/Corequisite(s):** MAT 057 - Statistics Success or Math placement.

**MAT 211 - Calculus I****5.0 Credit(s)****Lecture 5****Lab 0**

Calculus I is the first of a three-semester sequence in calculus and analytic geometry. Topics include limits, derivatives, extrema, concavity, curve sketching, and anti-differentiation. Application includes related rates, maxima, and minima.

**Prerequisite(s):** Math placement; or a grade of "C" or higher in MAT 121 - College Algebra and MAT 130 - Trigonometry; or a grade of "C" or higher in MAT 129 - Precalculus.

**MAT 217 - Calculus II****5.0 Credit(s)****Lecture 5****Lab 0**

Calculus II continues Calculus I and concentrates on integration. Topics include logarithmic and trigonometric functions, techniques of integration, polar coordinates, conic sections, and sequences. Applications include volume, arc length, surface area, centroids, and work.

**Prerequisite(s):** A grade of "C" or higher in MAT 211 - Calculus I.

**MAT 220 - Calculus III****5.0 Credit(s)****Lecture 5****Lab 0**

Calculus III completes the calculus sequence, emphasizing multi variable calculus and includes coverage of vector functions, partial derivatives, multiple integrals, and differential equations.

**Prerequisite(s):** A grade of "C" or higher in MAT 217 - Calculus II.

**MAT 225 - Differential Equations****3.0 Credit(s)****Lecture 3****Lab 0**

Differential Equations studies elementary theory and application of ordinary differential equations, matrices and solutions of linear equations and Eigenvalue methods for systems of linear differential equations.

**Prerequisite(s):** A grade of "C" or higher in MAT 217 - Calculus II.

**MAT 227 - Elementary Differential Equations with Laplace****4.0 Credit(s)****Lecture 4****Lab 0**

Elementary Differential Equations with Laplace covers elementary theory and application of ordinary differential equations, matrices and solutions of linear equations, Eigenvalue methods for systems of linear differential equations, Laplace transforms, and series solutions.

**Prerequisite(s):** A grade of "C" or higher in MAT 217 - Calculus II.

**MAT 711 - Business and Financial Mathematics****3.0 Credit(s)****Lecture 3****Lab 0**

Business and Financial Mathematics deal with basic mathematical skills used in business operations. Topics include cash and trade discounts, markups, overhead applications, commissions, simple interest, compound interest, annuities, business and consumer loans, depreciation, inventory, payroll, and financial statements.

**Note(s):** This course does not count toward the A.A. and A.S. science and mathematics requirement.

**MAT 743 - Technical Math****3.0 Credit(s)****Lecture 3****Lab 0**

Technical Math includes operations with real numbers, use of fractions, ratios, measurement conversion, algebraic equations, functions, geometry, and right angle trigonometry. Applications are designed to the program specific needs that students encounter in industrial settings.

**MAT 750 - Technical Mathematics II****5.0 Credit(s)****Lecture 5****Lab 0**

Technical Mathematics II encompasses a review of arithmetic, geometry, measurement, and algebra and covers equation solving, polynomials, and factoring along with basic right triangle trigonometry. Emphasis centers on applications pertinent to a particular technology.

**Prerequisite(s):** MAT 743 - Technical Math**MAT 766 - Technical Math for Aviation****3.0 Credit(s)****Lecture 3****Lab 0**

Technical Math for Aviation covers the math skills such as operations with real numbers, use of fractions, ratios, measurement conversion, algebraic equations, functions, geometry, and right angle trigonometry. The course includes math skillsets such as figuring tolerances in turbine engines, being able to calculate ratios for glide, compression and several other aviation related calculations and are essential for success in the Aviation Maintenance Technology program.

**MAT 908 - Cooperative Education****1.0 - 6.0 Credit(s)****Lecture 0****Lab 0****Co-Op 4-24**

Cooperative Education provides cooperative work experience related to mathematics. Work experience hours are arranged.

**Prerequisite(s):** Permission from the instructor.**Military and ROTC****MIL 106 - U.S. Air Force Heritage and Values I****1.0 Credit(s)****Lecture 1****Lab 0**

Air Force Heritage and Values I is a survey course designed to introduce students to the United States Air and Space Forces. It provides an overview of the basic characteristics, missions, and organization of the Air and Space Forces. As a foundational course, the topics covered in MIL 100 will include Air Force Core Values, Formation of the Air Force, Customs and Courtesies, Writing and Verbal Communications, Benefits of Services as well as Introduction to Leadership to name a few. For students who continue in the Air Force ROTC (AFROTC) program, this course will be the foundation for becoming an Air or Space professional by outlining our heritage and values. Leadership Laboratory (MIL 107) is mandatory for AFROTC cadets and complements this course by providing advanced leadership experiences in a hands-on, supervised environment.

**Corequisite(s):** MIL 107 - Leadership Laboratory.**Note(s):** This course is offered in partnership with the University of Nebraska at Omaha.**MIL 107 - Leadership Laboratory****0.0 Credit(s)****Lecture 0****Lab 2**

Leadership Laboratory (LLAB) augments the Air Force ROTC academic curriculum by providing prospective Air Force officers opportunities and feedback needed to develop leadership, managerial, and supervisory skills. Applications include a study of Air Force customs and courtesies, drill and ceremonies, problem solving, communication, and learning about career opportunities available to commissioned officers. During the junior and senior year, LLABs consist of activities classified as leadership and management experiences. Instruction is conducted within the framework of an organized cadet corps with a progression of experiences designed to develop leadership potential.

**Corequisite(s):** One of the following classes: MIL 106, MIL 113, MIL 203, MIL 206**Note(s):** This course is offered in partnership with the University of Nebraska at Omaha.**MIL 113 - U.S. Air Force Heritage and Values II****1.0 Credit(s)****Lecture 1****Lab 0**

Air Force Heritage and Values II is a survey course designed to introduce students to the United States Air and Space Forces. It provides an overview of the basic characteristics, missions, and organization of the Air and Space Forces. As a foundational course, the topics covered in MIL 101 will include What is War, Evolution of the Air Force, Principles of War and Tenets of Airpower, Ethical Decision-Making as well as Air Force Major Commands to name a few. For students who continue in the Air Force ROTC (AFROTC) program, this course will be the foundation for becoming an Air or Space professional by outlining our heritage and values. Leadership Laboratory (MIL 107) is mandatory for AFROTC cadets and complements this course by providing advanced leadership experiences in a hands-on, supervised environment.

**Corequisite(s):** MIL 107 - Leadership Laboratory.**Note(s):** This course is offered in partnership with the University of Nebraska at Omaha.**MIL 119 - Introduction to Critical Thinking and the Army I****2.0 Credit(s)****Lecture 2****Lab 0**

Introduction to Critical Thinking and the Army I is designed to develop critical thinking skills of students while ensuring they grasp information on being a professional in the United States Army. The overall focus is the development of basic knowledge and comprehension of Army leadership while gaining an elementary understanding of the Reserve Officers' Training Corps (ROTC) program, its purpose in the Army, and its advantages for students.

**Corequisite(s):** MIL 107 - Leadership Laboratory.**Note(s):** This course is offered in partnership with Creighton University.

**MIL 120 - Introduction to Critical Thinking and the Army II****2.0 Credit(s)****Lecture 2****Lab 0**

Introduction to Critical Thinking and the Army II is designed to increase critical thinking skills of students while ensuring they grasp additional information on being a professional in the United States Army. The overall focus in the continued development of basic knowledge and comprehension of Army leadership while gaining an advanced understanding of the Reserve Officers' Training Corps (ROTC) program, its purpose in the Army, and its advantages for students.

**Prerequisite(s):** MIL 119 - Introduction to Critical Thinking and the Army I.

**Note(s):** This course is offered in partnership with Creighton University.

**MIL 124 - Leadership Laboratory****0.0 Credit(s)****Lecture 0****Lab 2**

Leadership Laboratory provides initial and advanced military leadership instruction in military courtesy, first aid and practical field training exercises. Functions and responsibilities of leadership positions are developed through cadet command and staff positions.

**Corequisite(s):** MIL 119 - Introduction to Critical Thinking and the Army I or MIL 120 - Introduction to Critical Thinking and the Army II.

**Note(s):** This course is offered in partnership with Creighton University.

**MIL 203 - Team and Leadership Fundamentals I****1.0 Credit(s)****Lecture 1****Lab 0**

Team and Leadership Fundamentals I is designed to provide students the foundation for both leadership and team building. The topics covered will include Listening, Followership, Problem Solving, Motivation as well as Standards and Accountability to name a few. All these concepts will be applied during activities and class discussions. Students will also practice and apply verbal and written communication skills throughout the course. The lessons and course flow are designed to prepare students for field training and leadership positions in the detachment. Leadership Laboratory (MIL 107) is mandatory for AFROTC cadets and complements this course by providing advanced leadership experiences in a hands-on, supervised environment.

**Prerequisite(s):** MIL 106 - U.S. Air Force Heritage and Values I and MIL 113 - U.S. Air Force Heritage and Values II, or permission from the instructor.

**Corequisite(s):** MIL 107 - Leadership Laboratory.

**Note(s):** This course is offered in partnership with the University of Nebraska at Omaha.

**MIL 206 - Team and Leadership Fundamentals II****1.0 Credit(s)****Lecture 1****Lab 0**

Team and Leadership Fundamentals II is designed to provide students the foundation for both leadership and team building. The topics covered will include Team Building, Human Relations, Conflict Management, Stress Management and Resiliency as well as Ethical Decision Making to name a few. All these concepts will be applied during activities and class discussions. Students will also practice and apply verbal and written communication skills throughout the course. The lessons and course flow are designed to prepare students for field training and leadership positions in the detachment. Leadership Laboratory (MIL 107) is mandatory for Air Force ROTC cadets and complements this course by providing advanced leadership experiences in a hands-on, supervised environment.

**Prerequisite(s):** MIL 106 - U.S. Air Force Heritage and Values I, MIL 113 - U.S. Air Force Heritage and Values II, and MIL 203 - Team and Leadership Fundamentals I; or permission from the instructor.

**Corequisite(s):** MIL 107 - Leadership Laboratory.

**Note(s):** This course is offered in partnership with the University of Nebraska at Omaha.

**MIL 216 - Leadership Laboratory II****0.0 Credit(s)****Lecture 0****Lab 2**

Leadership Laboratory II parallels Foundations of Leadership and Foundations of Tactical Leadership classroom instruction, reinforcing concepts learned in class with practical hands-on training exercises and activities. Training is focused on more advanced individual and collective small unit skills such as small unit leadership and tactics doctrine, land navigation, basic rifle marksmanship, and drill and ceremonies.

**Note(s):** This course is offered in partnership with Creighton University.

**MIL 221 - Basic Individual Leadership Techniques****2.0 Credit(s)****Lecture 2****Lab 0**

Basic Individual Leadership Techniques is designed to develop student leadership and critical individual skills. Training is basic in nature and includes leadership techniques, written and oral communication, rifle marksmanship, fundamentals of land navigation, and physical fitness.

**Note(s):** This course is offered in partnership with Creighton University.

**MIL 222 - Advanced Individual Leadership Techniques****2.0 Credit(s)****Lecture 2****Lab 0**

Advanced Individual Leadership Techniques continues the development of cadet leadership and critical individual military skills. Training focuses on advanced military skills and includes orienteering, field survival skills, operations, and training.

**Prerequisite(s):** MIL 221 - Basic Individual Leadership Techniques.

**Note(s):** This course is offered in partnership with Creighton University.

## Music - Applied

### MUA 133 - Applied Music Composition

**2.0 Credit(s)**

**Lecture 1**

**Lab 2**

Applied Music Composition meets the individual needs based upon the student's background and training. This course requires a weekly 60 minute private lesson, additional student practice, and supervised recitals.

**Prerequisite(s):** Permission of Instructor.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music may be counted toward a degree.

### MUA 153 - Applied Woodwinds

**2.0 Credit(s)**

**Lecture 1.5**

**Lab 1**

Applied Woodwinds meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music may be counted toward a degree.

### MUA 185 - Applied Music Technology

**2.0 Credit(s)**

**Lecture 0.5**

**Lab 1.5**

Applied Music Technology meets individual needs based upon the student's background, training, and interests. This course includes a weekly 30-minute private lesson and student lab work. Course content involves projects chosen and completed by the student as well as discussion of techniques and trade practices in the area of the student's interest.

**Prerequisite(s):** Permission from the instructor.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Applied Music may be counted toward a degree.

### MUA 400 - Applied Voice I

**2.0 Credit(s)**

**Lecture 1.5**

**Lab 1**

Applied Voice I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

### MUA 401 - Applied Voice II

**2.0 Credit(s)**

**Lecture 1.5**

**Lab 1**

Applied Voice II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 400 - Applied Voice I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

### MUA 402 - Applied Voice III

**2.0 Credit(s)**

**Lecture 1.5**

**Lab 1**

Applied Voice III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 401 - Applied Voice II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

### MUA 403 - Applied Voice IV

**2.0 Credit(s)**

**Lecture 1.5**

**Lab 1**

Applied Voice IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 402 - Applied Voice III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

### MUA 410 - Applied Piano I

**2.0 Credit(s)**

**Lecture 1.5**

**Lab 1**

Applied Piano I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute applied lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted towards a degree.

### MUA 411 - Applied Piano II

**2.0 Credit(s)**

**Lecture 1.5**

**Lab 1**

Applied Piano II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute applied lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 410 - Applied Piano I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted towards a degree.

**MUA 412 - Applied Piano III****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Piano III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute applied lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 411 - Applied Piano II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted towards a degree.

**MUA 413 - Applied Piano IV****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Piano IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute applied lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 412 - Applied Piano III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted towards a degree.

**MUA 415 - Applied Bassoon I****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Bassoon I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 416 - Applied Bassoon II****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Bassoon II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 415 - Applied Bassoon I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 417 - Applied Bassoon III****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Bassoon III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 416 - Applied Bassoon II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 418 - Applied Bassoon IV****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Bassoon IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 417 - Applied Bassoon III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 420 - Applied Guitar I****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Guitar I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 421 - Applied Guitar II****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Guitar II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 420 - Applied Guitar I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 422 - Applied Guitar III****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Guitar III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 421 - Applied Guitar II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 423 - Applied Guitar IV****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Guitar IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 422 - Applied Guitar III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 425 - Applied Euphonium I****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Euphonium I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 426 - Applied Euphonium II****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Euphonium II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 425 - Applied Euphonium I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 427 - Applied Euphonium III****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Euphonium III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 426 - Applied Euphonium II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 428 - Applied Euphonium IV****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Euphonium IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 427 - Applied Euphonium III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 430 - Applied String Bass I****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied String Bass I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 431 - Applied String Bass II****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied String Bass II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 430 - Applied String Bass I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 432 - Applied String Bass III****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied String Bass III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 431 - Applied String Bass II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 433 - Applied String Bass IV****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied String Bass IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 432 - Applied String Bass III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 435 - Applied French Horn I****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied French Horn I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 436 - Applied French Horn II****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied French Horn II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 435 - Applied French Horn I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 437 - Applied French Horn III****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied French Horn III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 436 - Applied French Horn II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 438 - Applied French Horn IV****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied French Horn IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 437 - Applied French Horn III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 440 - Applied Clarinet I****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Clarinet I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 441 - Applied Clarinet II****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Clarinet II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 440 - Applied Clarinet I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 442 - Applied Clarinet III****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Clarinet III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 441 - Applied Clarinet II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 443 - Applied Clarinet IV****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Clarinet IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 442 - Applied Clarinet III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music may be counted toward a degree.

**MUA 445 - Applied Oboe I****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Oboe I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 446 - Applied Oboe II****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Oboe II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 445 - Applied Oboe I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 447 - Applied Oboe III****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Oboe III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 446 - Applied Oboe II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 448 - Applied Oboe IV****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Oboe IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 447 - Applied Oboe III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 450 - Applied Flute I****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Flute I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 451 - Applied Flute II****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Flute II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 450 - Applied Flute I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 452 - Applied Flute III****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Flute III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 451 - Applied Flute II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 453 - Applied Flute IV****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Flute IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 452 - Applied Flute III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music may be counted toward a degree.

**MUA 455 - Applied Tuba I****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Tuba I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 456 - Applied Tuba II****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Tuba II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 455 - Applied Tuba I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 457 - Applied Tuba III****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Tuba III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 456 - Applied Tuba II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 458 - Applied Tuba IV****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Tuba IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 457 - Applied Tuba III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 460 - Applied Saxophone I****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Saxophone I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 461 - Applied Saxophone II****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Saxophone II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 460 - Applied Saxophone I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 462 - Applied Saxophone III****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Saxophone III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 461 - Applied Saxophone II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 463 - Applied Saxophone IV****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Saxophone IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 462 - Applied Saxophone III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 470 - Applied Trombone I****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Trombone I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 471 - Applied Trombone II****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Trombone II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 470 - Applied Trombone I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 472 - Applied Trombone III****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Trombone III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 471 - Applied Trombone II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 473 - Applied Trombone IV****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Trombone IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 472 - Applied Trombone III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 480 - Applied Trumpet I****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Trumpet I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 481 - Applied Trumpet II****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Trumpet II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 480 - Applied Trumpet I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 482 - Applied Trumpet III****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Trumpet III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 481 - Applied Trumpet II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 483 - Applied Trumpet IV****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Trumpet IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 482 - Applied Trumpet III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 490 - Applied Percussion I****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Percussion I meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 491 - Applied Percussion II****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Percussion II meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 490 - Applied Percussion I.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 492 - Applied Percussion III****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Percussion III meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 491 - Applied Percussion II.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**MUA 493 - Applied Percussion IV****2.0 Credit(s)****Lecture 1.5****Lab 1**

Applied Percussion IV meets individual needs based upon the student's background and training. This course requires a weekly 60-minute private lesson, additional student practice, a weekly recital hour, and a monthly master class.

**Prerequisite(s):** A grade of "C" or higher in MUA 492 - Applied Percussion III.

**Note(s):** Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

**Music - General****MUS 100 - Music Appreciation****3.0 Credit(s)****Lecture 3****Lab 0**

Music Appreciation provides the tools for creative listening. This course includes the history and literature of classical music from the Renaissance period to the twentieth century.

**MUS 102 - Music Fundamentals****3.0 Credit(s)****Lecture 3****Lab 0**

Music Fundamentals serves the non-musician who wishes to learn the basic music fundamentals including signs, symbols, key signatures, and note reading in bass and treble clef. It is recommended for elementary education majors and other students who want a working knowledge of music fundamentals.

**MUS 109 - Jazz Combo I****1.0 Credit(s)****Lecture 0****Lab 3**

Jazz Combo I will introduce the students to jazz improvisation and give them an opportunity for performances. Course content includes learning the standard jazz small group literature and improvisation.

**Prerequisite(s):** Must audition.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 114 - Jazz Combo II****1.0 Credit(s)****Lecture 0****Lab 3**

Jazz Combo II will introduce the students to jazz improvisation and give them an opportunity for performances. Course content includes learning the standard jazz small group literature and improvisation.

**Prerequisite(s):** A grade of "C" or higher in MUS 109 - Jazz Combo I.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 124 - Instrumental Jazz Ensemble I****1.0 Credit(s)****Lecture 0****Lab 3**

Instrumental Jazz Ensemble I, through rehearsal and performance, provides a large instrumental ensemble experience in jazz styles and improvisation. This course requires various performances outside of class.

**Prerequisite(s):** Must audition.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 134 - Concert Choir I****1.0 Credit(s)****Lecture 0****Lab 2**

Concert Choir I uses rehearsal and performance to provide a large vocal ensemble experience. This course requires various performances outside of class.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 137 - Concert Band I****1.0 Credit(s)****Lecture 0****Lab 3**

Concert Band I, through rehearsal and performance, provides a large instrumental ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** Must audition.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 141 - Concert Choir II****1.0 Credit(s)****Lecture 0****Lab 3**

Concert Choir II, through rehearsal and performance, provides a large vocal ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 134 - Concert Choir I.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 142 - Concert Choir III****1.0 Credit(s)****Lecture 0****Lab 3**

Concert Choir III, through rehearsal and performance, provides a large vocal ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 141 - Concert Choir II.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 182 - Instrumental Jazz Ensemble II****1.0 Credit(s)****Lecture 0****Lab 3**

Instrumental Jazz Ensemble II, through rehearsal and performance, provides a large instrumental ensemble experience in jazz styles and improvisation. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 124 - Instrumental Jazz Ensemble I.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 183 - Instrumental Jazz Ensemble III****1.0 Credit(s)****Lecture 0****Lab 3**

Instrumental Jazz Ensemble III, through rehearsal and performance, provides a large instrumental ensemble experience in jazz styles and improvisation. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 182 - Instrumental Jazz Ensemble II.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 184 - Instrumental Jazz Ensemble IV****1.0 Credit(s)****Lecture 0****Lab 3**

Instrumental Jazz Ensemble IV, through rehearsal and performance, provides a large instrumental ensemble experience in jazz styles and performance. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 183 - Instrumental Jazz Ensemble III.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 185 - Class Piano I****1.0 Credit(s)****Lecture 1****Lab 0**

Class Piano I introduces the student to fundamental aspects of playing the piano, including music reading, appropriate performance technique, and keyboard understanding as it relates to basic melodic and harmonic structures.

**MUS 186 - Class Piano II****1.0 Credit(s)****Lecture 1****Lab 0**

Class Piano II expands the application of abilities acquired in Class Piano I. Students are introduced to four-part music reading, transposition, chord/scale relationship, basic cadences, and creating simple harmonic progression for diatonic melody in major keys.

**Prerequisite(s):** MUS 185 - Class Piano I.

**MUS 187 - Class Piano III****1.0 Credit(s)****Lecture 1****Lab 0**

Class Piano III expands on the application of abilities acquired in Class Piano II. Students will be introduced to simple free textured music reading, transposition to distant keys, forms of minor scales, additional common cadences, and creating free textured harmonic progressions for diatonic melody in major keys.

**Prerequisite(s):** MUS 186 - Class Piano II.

**MUS 188 - Class Piano IV****1.0 Credit(s)****Lecture 1****Lab 0**

Class Piano IV expands on the application of abilities acquired in Class Piano III. Students will be introduced to chord/scale relationships in minor scale forms, transposition of minor keys, specialized scale forms, realization of lead sheet notation, and creating free textured harmonic progressions for melody, including minor keys.

**Prerequisite(s):** MUS 187 - Class Piano III.

**MUS 204 - History of Rock and Roll****3.0 Credit(s)****Lecture 3****Lab 0**

History of Rock and Roll is a study of rock and roll music and culture from the mid-1950's to the present. The course is designed to create critical listeners of popular music through analysis of song forms, rock band instrumentation, and the political, cultural, and social significance of song lyrics. The course examines issues ranging from music business and technology to the socio-economic, gender, and racial influences that formed rock and roll music and continue to shape it to this day.

**Note(s):** Meets diversity requirement for graduation.

**MUS 213 - Men's Ensemble I****1.0 Credit(s)****Lecture 0****Lab 2**

Men's Ensemble I, through rehearsal and performance, provides a small vocal ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** Must audition.

**Corequisite(s):** Concert Choir or Chamber Choir.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music may be counted toward a degree.

**MUS 224 - Men's Ensemble II****1.0 Credit(s)****Lecture 0****Lab 2**

Men's Ensemble II, through rehearsal and performance, provides a small vocal ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 213 - Men's Ensemble I.

**Corequisite(s):** Concert Choir or Chamber Choir.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 232 - Jazz Combo III****1.0 Credit(s)****Lecture 0****Lab 3**

Jazz Combo III will introduce the students to jazz improvisation and give them an opportunity for performances. Course content includes learning the standard jazz small group literature and improvisation.

**Prerequisite(s):** A grade of "C" or higher in MUS 114 - Jazz Combo II.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 234 - Jazz Combo IV****1.0 Credit(s)****Lecture 0****Lab 3**

Jazz Combo IV will introduce the students to jazz improvisation and give them an opportunity for performances. Course content includes learning the standard jazz small group literature and improvisation.

**Prerequisite(s):** A grade of "C" or higher in MUS 232 - Jazz Combo III.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 238 - Men's Ensemble III****1.0 Credit(s)****Lecture 0****Lab 2**

Men's Ensemble III, through rehearsal and performance, provides a small vocal ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 224 - Men's Ensemble II.

**Corequisite(s):** Concert Choir or Chamber Choir.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 240 - Concert Choir IV****1.0 Credit(s)****Lecture 0****Lab 3**

Concert Choir IV, through rehearsal and performance, provides a large vocal ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 142 - Concert Choir III.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 245 - Concert Band II****1.0 Credit(s)****Lecture 0****Lab 3**

Concert Band II, through rehearsal and performance, provides a large instrumental ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 137 - Concert Band I.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 248 - Men's Ensemble IV****1.0 Credit(s)****Lecture 0****Lab 2**

Men's Ensemble IV will consist of four-part men's a cappella literature and give students an opportunity for performances. Course content includes reading four-part literature, learning barbershop concepts and harmonies at an advanced level.

**Prerequisite(s):** A grade of "C" or higher in MUS 238 - Men's Ensemble III.

**Corequisite(s):** Must be enrolled in another Ensemble Music course.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music may be counted toward a degree.

**MUS 305 - Introduction to Audio****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Audio introduces students to basic audio theory as well as how to assemble and operate a live analog sound reinforcement system. Instruction covers the basic audio theories behind and standard operation of audio cables, microphones, mixing consoles, power amplifiers, loudspeakers, and signal processing.

**Note(s):** Co-numbered with DRA 305 - Introduction to Audio.

**MUS 306 - Digital Audio Production I****3.0 Credit(s)****Lecture 3****Lab 0**

Digital Audio Production I introduces students to basic theories and techniques of digital audio recording, editing, and mixing. Instruction utilizes current industry software digital audio workstation and cover the fundamentals of the operation of the software, as well as audio and MIDI recording and editing. This course provides students with real-world examples and frequent hands-on assignments that will provide a solid foundation in all aspects of audio production.

**MUS 307 - Digital Audio Production II****3.0 Credit(s)****Lecture 3****Lab 0**

Digital Audio Production II builds upon student skills navigating and using industry softwares digital audio workstation. Instruction covers working with expanded hardware and software configurations, developing versatile tools for manipulating and editing both audio and MIDI data, and implementing a range of techniques that encompass larger, more sophisticated production scenarios. This course provides real-world examples and frequent hands-on assignments designed to enhance abilities in all aspects of audio production.

**Prerequisite(s):** A grade of "C" or higher in MUS 306 - Digital Audio Production I.

**MUS 310 - Recording Project I****1.0 Credit(s)****Lecture 0****Lab 2**

Recording Project I provides students with the opportunity to be involved, at the introductory level, in the complete cycle of an audio recording project. In Recording Project I, students perform as a singer/songwriter/ musician and perform additional tasks according to current skill level. Students assist in producing a two to four track album.

**Prerequisite(s):** A grade of "C" or higher in MUS 306 - Digital Audio Production I.

**MUS 311 - Recording Project II****1.0 Credit(s)****Lecture 0****Lab 2**

Recording Project II provides students with the opportunity to be involved in the complete cycle of an audio recording project. Students in Recording Project II are in charge of all equipment used in the recording project and assume the role of studio musician and perform additional tasks according to current skill level. Students assist in producing a two to four track album.

**Prerequisite(s):** A grade of "C" or higher in MUS 310 - Recording Project I.

**MUS 312 - Recording Project III****1.0 Credit(s)****Lecture 0****Lab 2**

Recording Project III provides students with the opportunity to be involved in the complete cycle of an audio recording project. Students in Recording Project III apply basic recording techniques in tracking a session for a recording project and assume the role of studio musician and perform additional tasks according to current skill level. Students assist in producing a two to four track album.

**Prerequisite(s):** A grade of "C" or higher in MUS 311 - Recording Project II.

**MUS 320 - Technical Music Practicum I****1.0 Credit(s)****Lecture 0****Lab 2**

Technical Music Practicum I is designed for Technical Music majors to learn basic aspects of working as audio technician support and apply concepts learned from other courses at various campus activities and events that may require audio reinforcement. Students learn how to properly setup and operate equipment in a variety of settings. Students are required to attend various campus-wide activities that require audio reinforcement and meet staff expectations as an audio technician assistant.

**Corequisite(s):** MUS 305 - Introduction to Audio.

**MUS 321 - Technical Music Practicum II****1.0 Credit(s)****Lecture 0****Lab 2**

Technical Music Practicum II students work as mobile recording engineers, providing recording and audio archival services for various campus activities and events that require audio recording services. Students apply knowledge learned in other Technical Music courses to properly set up and operate the necessary equipment in a variety of settings. Students are required to attend various campus-wide activities that require audio reinforcement and meet staff expectations as a mobile recording engineer.

**Prerequisite(s):** A grade of "C" or higher in MUS 320 - Technical Music Practicum I.

**MUS 322 - Technical Music Practicum III****1.0 Credit(s)****Lecture 0****Lab 2**

Technical Music Practicum III students act as music technology lab assistants. Students will be required to use skills learned in other Technical Music courses to assist faculty and students in the use and maintenance of the laboratory equipment during classes held in the laboratory. Students also begin to create a resume and professional portfolio of past work to use during the job application process.

**Prerequisite(s):** A grade of "C" or higher in MUS 321 - Technical Music Practicum II.

**MUS 323 - Technical Music Practicum IV****1.0 Credit(s)****Lecture 0****Lab 2**

Technical Music Practicum IV students will act as operations engineers in the technical music recording studio. Students use skills learned in other Technical Music courses to assist other students and faculty in the use of the studio including microphone setup, studio signal flow, control surface operation, as well as studio policies and procedures. Students also develop a finalized, professional resume and portfolio of past work to use during the job application process.

**Prerequisite(s):** A grade of "C" or higher in MUS 322 - Technical Music Practicum III.

**MUS 325 - Mix Listening I****3.0 Credit(s)****Lecture 3****Lab 0**

Mix Listening I provides students with an introduction to the mixing process and develops the ability to hear and identify the key features of a well-balanced, professional-sounding mix. Through regular ear-training drills, analysis of recordings, and comparative studies of different styles of mixing. Students learn to identify mix width and depth, frequency range, dynamics and the different approaches used in various musical genres as well as mixing techniques including panning, reverb, delay, compression, chorus, and distortion. The course also explores various types of instruments and arrangements as well as the basic acoustic theory that will help turn a normal listening space into a more critical listening environment.

**Prerequisite(s):** A grade of "C" or higher in MUS 305 - Introduction to Audio and MUS 306 - Digital Audio Production I.

**MUS 326 - Mix Listening II****3.0 Credit(s)****Lecture 3****Lab 0**

Mix Listening II continues to build listening skills and aural awareness while expanding students' palette of production techniques and vocabulary. Students learn how to identify and determine key mix frequencies for instruments across different musical genres and cultures. Students also learn to identify finer parameters of natural and artificial reverb, delay, and compression settings, and effect on mixes and what we hear. Students are provided with in-depth comparisons of microphones, mic pre-amps, and amplifiers, as well as stereo mic configurations. Throughout the course, students analyze professional recordings and strengthen listening skills through ear-training drills.

**Prerequisite(s):** A grade of "C" or higher in MUS 325 - Mix Listening I.

**MUS 328 - Virtual Instrument and Processing Plug-Ins****3.0 Credit(s)****Lecture 2****Lab 2**

Virtual Instrument and Processing Plug-Ins explores how to fully utilize all of the available audio processing plug-ins and virtual instruments that are included with current industry software digital audio workstation. The course covers the properties of each parameter in every instrument and how those parameters work together to create a more interesting sound or cohesive mix. The course also covers how to design sounds based on those parameters, how to be more creative with the effects and instruments, and how to improve the overall sound of musical productions.

**Prerequisite(s):** A grade of "C" or higher in MUS 306 - Digital Audio Production I.

**MUS 330 - Audio Mixing I****3.0 Credit(s)****Lecture 3****Lab 0**

Audio Mixing I expands upon understanding of the production process by introducing new mixing techniques such as parallel compression, providing thorough explorations of reverb and delay parameters and use of those effects in the mixing process. The course introduces the subject of audio mastering and the use of compression at the mastering stage. Students listen to, compare, and discuss mixes as a class.

**Prerequisite(s):** A grade of "C" or higher in MUS 325 - Mix Listening I or MUS 307 - Digital Audio Production II.

**MUS 331 - Audio Mixing II****3.0 Credit(s)****Lecture 3****Lab 0**

Audio Mixing II is an advanced course that provides a deeper understanding of mixing and mastering tools and techniques that can be applied to a wide variety of styles including jazz, pop/rock, and electronica. The course explores the use of several mixing procedures including utilizing advanced techniques with processors such as EQ, compression, reverb, delays, and tempo maps. Each of these concepts is applied to various genres of recorded music. The course also covers the use of EQ, limiting, and multi-band compression in the mastering process.

**Prerequisite(s):** A grade of "C" or higher in MUS 330 - Audio Mixing I.

**MUS 333 - Popular Music Analysis****3.0 Credit(s)****Lecture 3****Lab 0**

Popular Music Analysis provides a step-by-step approach to identifying the essential elements of successful recorded tracks and albums.

Students gain an understanding of the most fundamental part of the songwriting and recording process - the emotional effectiveness of music. Students also learn arrangement and direction techniques designed to assist talent in contributing substantially to a recording instead of simply performing a part. Students learn the differences between producing and engineering in order to transform approach to mixing an album so that it may reach its full artistic potential.

**Prerequisite(s):** A grade of "C" or higher in MUS 325 - Mix Listening I.

**MUS 335 - Audio Mastering****3.0 Credit(s)****Lecture 3****Lab 0**

Audio Mastering focuses on the final part of the music production process. Students are provided with an advanced discussion of acoustics, monitoring, and the digital audio fundamentals unique to the art of mastering audio. Students learn the specific tools used to modify, enhance, and correct the sound of a recording. Course topics include applying signal processing to enhance audio material, noise reduction techniques, advanced editing techniques such as album sequencing and manual gain riding. Students also learn about the importance of quality control, and compare disc and electronic delivery preparation methods.

**Prerequisite(s):** A grade of "C" or higher in MUS 330 - Audio Mixing I.

**MUS 350 - Percussion Ensemble I****1.0 Credit(s)****Lecture 0****Lab 2**

Percussion Ensemble I introduces students to percussion ensemble literature and gives them an opportunity for performance. Course content includes reading percussion music and learning percussion techniques and concepts. Open to all students.

**Prerequisite(s):** Must audition.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music may be counted toward a degree.

**MUS 351 - Percussion Ensemble II****1.0 Credit(s)****Lecture 0****Lab 2**

Percussion Ensemble II advances students' knowledge of percussion ensemble literature and gives them an opportunity for performance. Course content includes reading percussion music and learning percussion techniques and concepts. Open to all students.

**Prerequisite(s):** A grade of "C" or higher in MUS 350 - Percussion Ensemble I.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music may be counted toward a degree.

**MUS 352 - Percussion Ensemble III****1.0 Credit(s)****Lecture 0****Lab 2**

Percussion Ensemble III builds upon skills learned in previous levels. Students learn percussion ensemble literature and have performance opportunities. Course content includes reading percussion music and learning percussion techniques and concepts. Open to all students.

**Prerequisite(s):** A grade of "C" or higher in MUS 351 - Percussion Ensemble II.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music may be counted toward a degree.

**MUS 353 - Percussion Ensemble IV****1.0 Credit(s)****Lecture 0****Lab 2**

Percussion Ensemble IV refines the skills learned in previous levels. Students learn percussion ensemble literature and have performance opportunities. Course content includes reading percussion music and learning percussion techniques and concepts. Open to all students.

**Prerequisite(s):** A grade of "C" or higher in MUS 352 - Percussion Ensemble III.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music may be counted toward a degree.

**MUS 360 - Women's Ensemble I****1.0 Credit(s)****Lecture 0****Lab 2**

Women's Ensemble I, through rehearsal and performance, provides a small vocal ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** Must audition.

**Corequisite(s):** Concert Choir or Chamber Choir.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 361 - Women's Ensemble II****1.0 Credit(s)****Lecture 0****Lab 2**

Women's Ensemble II, through rehearsal and performance, provides a small vocal ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 360 - Women's Ensemble I.

**Corequisite(s):** Concert Choir or Chamber Choir.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 362 - Women's Ensemble III****1.0 Credit(s)****Lecture 0****Lab 2**

Women's Ensemble III, through rehearsal and performance, provides a small vocal ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 361 - Women's Ensemble II.

**Corequisite(s):** Concert Choir or Chamber Choir.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 363 - Women's Ensemble IV****1.0 Credit(s)****Lecture 0****Lab 2**

Women's Ensemble IV, through rehearsal and performance, provides a small vocal ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 362 - Women's Ensemble III.

**Corequisite(s):** Concert Choir or Chamber Choir.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 370 - Marching Band I****1.0 Credit(s)****Lecture 0****Lab 5**

Marching Band I, through rehearsal and performance, provides a large instrumental ensemble experience in marching band music and marching drill. Color Guard is included for students with experience in routine spinning and various guard equipment. This course requires various performances evenings and weekends.

**Prerequisite(s):** Must audition.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 371 - Marching Band II****1.0 Credit(s)****Lecture 0****Lab 5**

Marching Band II, through rehearsal and performance, provides a large instrumental ensemble experience in marching band music and marching drill. Color Guard is included for students with experience in routine spinning of various guard equipment. This course requires various performances evenings and weekends.

**Prerequisite(s):** A grade of "C" or higher in MUS 370 - Marching Band I.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 385 - Winter Guard I****1.0 Credit(s)****Lecture 0****Lab 3**

Winter Guard I introduces students to basic movement and equipment-use of color guard and gives them opportunities to perform at various events. This course emphasizes team-building, physical conditioning, and practicing guard techniques through the use of flags, rifles, sabers, and other props for performances.

**Prerequisite(s):** Must audition.**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music may be counted toward a degree.**MUS 386 - Winter Guard II****1.0 Credit(s)****Lecture 0****Lab 3**

Winter Guard II builds upon the skills learned in the previous level. Students refine movement and equipment-use of winter guard and perform at various events. This course emphasizes team-building, physical conditioning, and practicing guard techniques through the use of flags, rifles, sabers, and other props for performances.

**Prerequisite(s):** A grade of "C" or higher in MUS 385 - Winter Guard I.**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music may be counted toward a degree.**MUS 390 - Show Choir I****1.0 Credit(s)****Lecture 0****Lab 3**

Show Choir I, through rehearsal and performance, provides an opportunity to experience the combination of popular literature and choreography. This course requires various performances outside of class.

**Prerequisite(s):** Must Audition.**Corequisite(s):** MUS 134 - Concert Choir I or MUS 440- Chamber Choir.**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.**MUS 391 - Show Choir II****1.0 Credit(s)****Lecture 0****Lab 3**

Show Choir II, through rehearsal and performance, provides an opportunity to experience the combination of popular literature and choreography. This course requires various performances outside of class. Students must commit to two semesters (one academic year).

**Prerequisite(s):** A grade of "C" or higher in MUS 390 - Show Choir I.**Corequisite(s):** Concert Choir or Chamber Choir.**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.**MUS 392 - Show Choir III****1.0 Credit(s)****Lecture 0****Lab 3**

Show Choir III, through rehearsal and performance, provides an opportunity to experience the combination of popular literature and choreography. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 391 - Show Choir II.**Corequisite(s):** Concert Choir - MUS 440 or Chamber Choir- MUS 134 .**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.**MUS 393 - Show Choir IV****1.0 Credit(s)****Lecture 0****Lab 3**

Show Choir IV, through rehearsal and performance, provides an opportunity to experience the combination of popular literature and choreography. This course requires various performances outside of class. Students must commit to two semesters (one academic year).

**Prerequisite(s):** A grade of "C" or higher in MUS 392 - Show Choir III.**Corequisite(s):** Concert Choir or Chamber Choir.**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.**MUS 400 - Music in Theory and Practice I****Credits(s)****Lecture 3****Lab 0**

Music in Theory and Practice I is grounded in the basic tonal functions of the common practice period. This course covers the basics of rhythm, pitch, and notational practices. Students study rhythmic figures in simple and compound meters, as well as scales, key signatures, and diatonic chords in major and minor keys.

**Prerequisite(s):** Must audition.**Corequisite(s):** MUS 410 - Ear Training and Sight Singing I.**Note(s):** This course is for Music majors only.**MUS 401 - Music in Theory and Practice II****3.0 Credit(s)****Lecture 3****Lab 0**

Music in Theory and Practice II continues the study of tonal functions of the common practice period. Melodic, harmonic, and rhythmic elements of music are combined in the study of chord functions and chord progressions, phrase and cadence structure, and part-writing ranging from two to four voices.

**Prerequisite(s):** A grade of "C" or higher in MUS 400 - Music in Theory and Practice I.**Corequisite(s):** MUS 411 - Ear Training and Sight Singing II.

**MUS 402 - Music in Theory and Practice III****3.0 Credit(s)****Lecture 3****Lab 0**

Music in Theory and Practice III continues the study of tonal functions of the common practice period. Students examine musical form, phrase structure, and motivic structure, focusing on patterns and transformations. Knowledge of harmony is expanded through the treatment secondary chords and key modulations.

**Prerequisite(s):** A grade of "C" or higher in MUS 401 - Music in Theory and Practice II.

**Corequisite(s):** MUS 412 - Ear Training and Sight Singing III.

**MUS 403 - Music in Theory and Practice IV****3.0 Credit(s)****Lecture 3****Lab 0**

Music in Theory and Practice IV continues the study of tonal functions of the common practice period. Students continue the examination of form, focusing on more complex structures. Melodic and harmonic elements incorporate chromatic compositional devices.

**Prerequisite(s):** A grade of "C" or higher in MUS 402 - Music in Theory and Practice III.

**Corequisite(s):** MUS 413 - Ear Training and Sight Singing IV.

**MUS 410 - Ear Training and Sight Singing I****1.0 Credit(s)****Lecture 1****Lab 0**

Ear Training and Sight Singing I covers the basic tools and processes used to sight read rhythms and pitches of written music. Musical examples will be in simple meter and will contain stepwise melodies in some major keys. The course also includes the transcription of melodies through dictation of musical examples.

**Corequisite(s):** MUS 400 - Music in Theory and Practice I.

**MUS 411 - Ear Training and Sight Singing II****1.0 Credit(s)****Lecture 1****Lab 0**

Ear Training and Sight Singing II builds on the skills learned in Ear Training and Sight Singing I by encountering more advanced musical material in performance and transcription. Musical examples will be in both simple and compound meters, and melodies will contain steps, skips, and leaps of tonic triad pitches in all major keys.

**Prerequisite(s):** A grade of "C" or higher in MUS 410 - Ear Training and Sight Singing I.

**Corequisite(s):** MUS 401 - Music in Theory and Practice II.

**MUS 412 - Ear Training and Sight Singing III****1.0 Credit(s)****Lecture 1****Lab 0**

Ear Training and Sight Singing III builds on the skills learned in Ear Training and Sight Singing II by encountering more advanced musical material in performance and transcription. Musical examples will include dotted rhythms and ties in both simple and compound meters, and melodies will contain steps, skips, and leaps of diatonic triad pitches in all major and minor keys.

**Prerequisite(s):** A grade of "C" or higher in MUS 411 - Ear Training and Sight Singing II.

**Corequisite(s):** MUS 402 - Music in Theory and Practice III.

**MUS 413 - Ear Training and Sight Singing IV****1.0 Credit(s)****Lecture 1****Lab 0**

Ear Training and Sight Singing IV builds on the skills learned in Ear Training and Sight Singing III by encountering more advanced musical material in performance and transcription. Musical examples will include smaller beat divisions in both simple and compound meters, and melodies will contain steps, skips, and leaps of seventh chord pitches in all major and minor keys.

**Prerequisite(s):** A grade of "C" or higher in MUS 412 - Ear Training and Sight Singing III.

**Corequisite(s):** MUS 403 - Music in Theory and Practice IV.

**MUS 430 - Woodwind Ensemble I****1.0 Credit(s)****Lecture 0****Lab 2**

Woodwind Ensemble I, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** Must Audition.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 433 - Woodwind Ensemble IV****1.0 Credit(s)****Lecture 0****Lab 2**

Woodwind Ensemble IV, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 452 - Woodwind Ensemble III.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 434 - Brass Ensemble I****1.0 Credit(s)****Lecture 0****Lab 2**

Brass Ensemble I, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** Must Audition.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 435 - Brass Ensemble II****1.0 Credit(s)****Lecture 0****Lab 2**

Brass Ensemble II, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 434 - Brass Ensemble I.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 436 - Brass Ensemble III****1.0 Credit(s)****Lecture 0****Lab 2**

Brass Ensemble III, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 435 - Brass Ensemble II.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 437 - Brass Ensemble IV****1.0 Credit(s)****Lecture 0****Lab 2**

Brass Ensemble IV, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 436 - Brass Ensemble III.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 440 - Chamber Choir I****1.0 Credit(s)****Lecture 0****Lab 3**

Chamber Choir I, through rehearsal and performance, provides a small vocal ensemble experience covering advanced repertoire. This course requires various performances outside of class.

**Prerequisite(s):** Must Audition.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 441 - Chamber Choir II****1.0 Credit(s)****Lecture 0****Lab 3**

Chamber Choir II, through rehearsal and performance, provides a small vocal ensemble experience covering advanced repertoire. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 440 - Chamber Choir I.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 442 - Chamber Choir III****1.0 Credit(s)****Lecture 0****Lab 3**

Chamber Choir III, through rehearsal and performance, provides a small vocal ensemble experience covering advanced repertoire. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 441 - Chamber Choir II.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 443 - Chamber Choir IV****1.0 Credit(s)****Lecture 0****Lab 3**

Chamber Choir IV, through rehearsal and performance, provides a small vocal ensemble experience covering advanced repertoire. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 442 - Chamber Choir III.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 444 - Fall Pep Band I****1.0 Credit(s)****Lecture 0****Lab 2**

Fall Pep Band I provides musical entertainment and athletic support for fall sporting events. Students support sports teams and increase morale via cheering and music. Students are required to perform at evening and weekend events.

**Prerequisite(s):** Must audition.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in ensemble music courses may be counted toward a degree.

**MUS 445 - Fall Pep Band II****1.0 Credit(s)****Lecture 0****Lab 2**

Fall Pep Band II provides musical entertainment and athletic support for all sporting events. Students support sports teams and increase morale via cheering and music. Students are required to perform at evening and weekend events.

**Prerequisite(s):** A grade of "C" or higher in MUS 444 - Fall Pep Band I.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in ensemble music courses may be counted toward a degree.

**MUS 446 - Spring Pep Band I****1.0 Credit(s)****Lecture 0****Lab 2**

Spring Pep Band I provides musical entertainment and athletic support for spring sporting events. Students support sports teams and increase morale via cheering and music. Students are required to perform at evening and weekend events.

**Prerequisite(s):** Must audition.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in ensemble music courses may be counted toward a degree.

**MUS 447 - Spring Pep Band II****1.0 Credit(s)****Lecture 0****Lab 2**

Spring Pep Band II provides musical entertainment and athletic support for spring sporting events. Students support sports teams and increase morale via cheering and music. Students are required to perform at evening and weekend events.

**Prerequisite(s):** A grade of "C" or higher in MUS 446 - Spring Pep Band I.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in ensemble music courses may be counted toward a degree.

**MUS 451 - Woodwind Ensemble II****1.0 Credit(s)****Lecture 0****Lab 2**

Woodwind Ensemble II, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 430 - Woodwind Ensemble I.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 452 - Woodwind Ensemble III****1.0 Credit(s)****Lecture 0****Lab 2**

Woodwind Ensemble III, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class.

**Prerequisite(s):** A grade of "C" or higher in MUS 451 - Woodwind Ensemble II.

**Note(s):** Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.

**MUS 936 - Audio Engineering Internship****2.0 Credit(s)****Lecture 0****Lab 0****Internship 12**

Audio Engineering Internship is designed to allow students to gain hands-on practical experience in a professional audio production emphasis, according to students' needs. Students apply skills learned in previous coursework.

**Prerequisite(s):** Permission from the instructor.

**Nursing - Associate Degree Nursing****ADN 106 - Success in Nursing****1.0 Credit(s)****Lecture 1****Lab 0**

Success in Nursing prepares the nursing student for completion of the Associate Degree Nursing program. The student will explore the history of nursing to gain further insight into the profession. Emphasis is on maintaining a positive attitude, developing efficient study skills, time management, organizational tips, and establishing effective test taking strategies. The student will be introduced to the use of the computer, library services, APA format, and principles of research and information retrieval via the internet.

**ADN 171 - Concepts of Nursing I****5.0 Credit(s)****Lecture 4.75****Lab .75**

Concepts of Nursing I focuses on the care of adult patients with health alterations that require medical and/or surgical intervention. Integrates patient centered care, cultural sensitivity, pharmacology, health promotion and education, safety, evidence based practice, interdisciplinary collaboration and professionalism throughout the course.

**Prerequisite(s):** A grade of "C" or higher in ADN 213 - Pharmacology Applications, ADN 831 - Trends and Issues, and ADN 106 - Success in Nursing.

**ADN 180 - Advanced Concepts of Nursing****4.0 Credit(s)****Lecture 3.75****Lab 0.75**

Advanced Concepts of Nursing introduces nursing students to advanced principles of patient care, building on acquired knowledge and development of critical thinking skills from previous course work. Students focus on patient care associated with acute and chronic multi-system disease dysfunction and the physical and psychosocial adaptation of adult patients. The course presents professional nursing roles in the community, leadership and management, as well as nursing trends and integrates the nursing process and evidence-based practice throughout the course. Emphasis is placed on acquiring knowledge to facilitate clinical decision-making skills needed to provide safe patient care.

**Prerequisite(s):** A grade of "C" or higher in ADN 421 - Maternal Child Nursing II, ADN 171 - Concepts of Nursing I, and ADN 740 - Concepts of Nursing Clinic.

**ADN 213 - Pharmacology Applications****4.0 Credit(s)****Lecture 3.5****Lab 0.5**

Pharmacology Applications is designed to provide the learner knowledge of pharmacodynamics, pharmacokinetics and pharmacotherapeutics as they relate to the client lifespan. Major drug classifications will be discussed in relation to physiologic systems, with emphasis on application of these agents. Medication administration including oral, parenteral, enteral, and intravenous therapy will be discussed and applied.

**ADN 292 - Advanced Mental Health Nursing****2.0 Credit(s)****Lecture 2****Lab 0**

Advanced Mental Health Nursing examines advanced psychiatric mental health nursing concepts. Students gain an understanding of role in creating a therapeutic environment. Emphasis is placed on utilizing the nursing process to provide care for clients with psychiatric disorders.

**Prerequisite(s):** A grade of "C" or higher in ADN 421 - Maternal Child Nursing II, ADN 171 - Concepts of Nursing I, and ADN 740 - Concepts of Nursing Clinic.

**ADN 421 - Maternal Child Nursing II****3.0 Credit(s)****Lecture 2.75****Lab 0.75**

Maternal Child Nursing II provides a comprehensive perspective of family-centered maternal-infant nursing and an in-depth study of children with associated health deviations. The psychological adaptation of the child-bearing family and assisting the sick child and the family to cope with illness and hospitalization is discussed. Health promotion and health teaching are emphasized.

**Prerequisite(s):** A grade of "C" or higher in ADN 213 - Pharmacology Applications, ADN 831 - Trends and Issues, and ADN 106 - Success in Nursing.

**ADN 499 - Passage to Professional Practice****1.0 Credit(s)****Lecture 1****Lab 0**

Passage to Professional Practice will prepare the student to enter professional practice. Personal wellness and preparation for licensure will be covered.

**Prerequisite(s):** A grade of "C" or higher in ADN 421 - Maternal Child Nursing II, ADN 171 - Concepts of Nursing I, and ADN 740 - Concepts of Nursing Clinic.

**ADN 740 - Concepts of Nursing Clinic****3.0 Credit(s)****Lecture 0****Lab 9**

Concepts of Nursing Clinic provides clinical experiences in which students apply theoretical concepts and implement safe patient care to adult patients and families with health alterations that require medical and/or surgical intervention in a variety of settings. Students incorporate application of the nursing process, advanced assessment skills, family-centered care, interdisciplinary collaboration, professionalism, cultural sensitivity, use of informatics and evidence based practice to promote clinical reasoning and safe practice. The student is required to successfully complete this course before progressing to clinical.

**Prerequisite(s):** A grade of "C" or higher in ADN 213 - Pharmacology Applications, ADN 831 - Trends and Issues, and ADN 106 - Success in Nursing.

**ADN 760 - Advanced Concepts of Nursing Clinical****4.0 Credit(s)****Lecture 0****Lab 12**

Advanced Concepts of Nursing Clinical focuses on the advanced nursing care of patient, families and communities with complex multi-system health problems in the acute and community settings. Students apply theoretical concepts and implement safe patient care to adult patients, families and communities with complex health alterations that require medical and/or surgical intervention in a variety of settings. The course emphasizes leadership, time management and organizational skills, while managing the care of multiple patients and collaborating with the interdisciplinary team in the acute and community settings. Focus is given to effective care, assessment and evaluation of patients, families and populations using evidence-based best practices, informatics, safety and clinical reasoning.

**Prerequisite(s):** A grade of "C" or higher in ADN 421 - Maternal Child Nursing II, ADN 171 - Concepts of Nursing I, and ADN 740 - Concepts of Nursing Clinic.

**ADN 831 - Trends and Issues****3.0 Credit(s)****Lecture 3****Lab 0**

Trends and Issues will explore the historical perspective of nursing, current issues in nursing, and the health care delivery system.

Problem-solving related to nursing practice will be discussed and practiced. An understanding of legal aspects and responsibility for continued growth and professionalism will help prepare the student for transition from student to licensed registered nurse.

**Nursing - Practical Nursing****PNN 201 - Introduction to Math and Medications****1.0 Credit(s)****Lecture 1****Lab 0**

Introduction to Math and Medications introduces the concepts of medication administration. It includes legal implications and mathematical computations specific to pharmacology.

**PNN 228 - Foundations of Nursing I****6.0 Credit(s)****Lecture 5.75****Lab .75**

Foundations of Nursing I focuses on the care of older adults with health alterations that require medical interventions. The course emphasizes knowledge, competencies and skills needed to provide safe and evidence-based care for the patient with health alterations. Students apply the nursing process as a decision-making framework to assist in developing effective clinical judgment skills. Pathophysiology, pharmacology and nutrition in the selected disease states are covered. Students integrate evidence-based practice, patient-centered care, safety, cultural sensitivity, interdisciplinary collaboration and professionalism throughout the course. Students apply course concepts, demonstrate skills, and care of older adult patients in supervised laboratory and/or simulation experiences. The course emphasizes patient safety, application of the nursing process, and development of communication skills within the scope of practice of the practical nurse.

**PNN 229 - Foundations of Nursing II****4.0 Credit(s)****Lecture 3.75****Lab 0.75**

Foundations of Nursing II focuses on the care of adult patients with health alterations that require medical and/or surgical intervention. The course provides a decision-making framework, through the nursing process, to assist students in developing effective clinical judgment skills. Students integrate pathophysiology, pharmacology and nutrition in the selected disease states, with concepts of evidenced-based practice, patient-centered care, safety and professionalism.

**Prerequisite(s):** A grade of "C" or higher in PNN 228 - Foundations of Nursing I, PNN 290 - Health Assessment Across the Lifespan, and PNN 721 - Foundations of Nursing Clinical I.

**PNN 282 - Pharmacology II****2.0 Credit(s)****Lecture 2****Lab 0**

Pharmacology II provides second semester nursing students enrolled in the Practical and Associate Degree Nursing programs with additional pharmacological tools. The course builds on pharmacological nursing using the nursing process as the framework introduced in Pharmacology I. Students learn actions, interactions, adverse effects, nursing implications for drugs for multiple body systems and differences across the lifespan. The course progresses with dosage calculation through advanced pharmacological calculations for safe medication administration.

**Prerequisite(s):** A grade of "C" or higher in PNN 228 - Foundations of Nursing I, PNN 290 - Health Assessment Across the Lifespan, and PNN 721 - Foundations of Nursing Clinical I.

**PNN 290 - Health Assessment Across the Lifespan****2.0 Credit(s)****Lecture 1.50****Lab 1**

Health Assessment Across the Lifespan introduces health history taking, physical assessment and documentation required for professional nursing practice. The course integrates focused and comprehensive health assessments, utilizing professional behavior, communication and collaborative teamwork, with collection and analysis of data, which is essential in planning safe and effective care. Students learn critical thinking and clinical reasoning skills, health assessment as a systematic and organized examination that provides accurate data in which to form evidenced-based health promotion, education and priority patient centered nursing plans of care.

**PNN 446 - Nursing Care of the Growing Family****4.0 Credit(s)****Lecture 3.50****Lab 1**

Nursing Care of the Growing Family builds on the concepts of previous nursing courses with an emphasis on nursing care with men's and women's health during the reproductive years, including antepartum, intrapartum, postpartum and newborn periods. The course focuses on health promotion, disease prevention and common alterations in health. Students discuss care of the well and hospitalized child and family. Course experiences include simulation and work in a community based setting.

**Prerequisite(s):** A grade of "C" or higher in PNN 228 - Foundations of Nursing I, PNN 290 - Health Assessment Across the Lifespan, and PNN 721 - Foundations of Nursing Clinical I.

**PNN 721 - Foundations of Nursing Clinical I****2.0 Credit(s)****Lecture 0****Lab 4**

Foundations of Nursing Clinical I introduces the application of nursing care concepts in a clinical setting. The course provides a decision-making framework in developing effective clinical judgment skills. Students apply basic assessment and patient care concepts, including patient centered care, cultural sensitivity, informatics, safe practice and professionalism.

**PNN 723 - Foundations of Nursing Clinical II****2.0 Credit(s)****Lecture 0****Lab 6**

Foundations of Nursing Clinical II provides the opportunity to advance knowledge in the application of the patient care concepts in the clinical setting. Includes integration of pathophysiology, nutrition and pharmacology, as well as the application of the nursing process, refining basic assessment skills, patient-centered care, cultural sensitivity, informatics, safe practice and professionalism.

**Prerequisite(s):** A grade of "C" or higher in PNN 228 - Foundations of Nursing I, PNN 290 - Health Assessment Across the Lifespan, and PNN 721 - Foundations of Nursing Clinical I.

**Philosophy****PHI 101 - Introduction to Philosophy****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Philosophy is an analytical approach to problems such as the nature of man, the existence of a creator, the question of freedom, and the challenge of change. Students deepen understanding of these problems and own responses by studying the thoughts of philosophers such as Socrates, Plato, Aristotle, St. Thomas Aquinas, Descartes, Locke, Hegel, Kant, Kierkegaard, Sartre, Nietzsche, James, Russell, and Kuhn.

**PHI 105 - Introduction to Ethics****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Ethics examines the Kantian, Utilitarian, and Virtue principles of moral decision-making. Those principles are then used to analyze such issues as hunger, poverty, drugs, environmental problems, racism, abortion, euthanasia, and the economic and criminal justice systems.

**PHI 142 - Ethics in Business****3.0 Credit(s)****Lecture 3****Lab 0**

Ethics in Business addresses moral issues that confront the contemporary business community. Traditional ethical systems provide a framework with which to analyze issues in areas of corporate responsibility and the rights and obligations of employers and employees.

**PHI 211 - Ethics in the Media****3.0 Credit(s)****Lecture 3****Lab 0**

Ethics in the Media introduces the judicial, legislative, and administrative policies pertinent to the ethical and legal operation of newspapers and other print media. Emphasis is placed upon First Amendment protection, libel, privacy, free press, fair trial, judicial controls, government regulations, copyright, and ethical standards and practices. Upon completion, students will have an understanding and appreciation of these issues and the ability to analyze the important legal and ethical issues involved.

**Note(s):** Co-numbered with JOU 211**Physical Education - Activities****PEA 162 - Speed and Conditioning I****1.0 Credit(s)****Lecture 0****Lab 2**

Speed and Conditioning I is an activity course that will focus on the coordination of muscular movements for sport-specific performance.

**Prerequisite(s):** Permission from the instructor.**PEA 177 - Speed and Conditioning II****1.0 Credit(s)****Lecture 0****Lab 2**

Speed and Conditioning II is an activity course that will focus on the speed of muscular movements for sport-specific performance.

**Prerequisite(s):** PEA 162 - Speed and Conditioning I.**PEA 187 - Weight Training I****1.0 Credit(s)****Lecture 0****Lab 2**

Weight Training I provides basic fundamental instruction in the performance of weight training exercises focusing on safety.

**PEA 287 - Weight Training II****1.0 Credit(s)****Lecture 0****Lab 2**

Weight Training II provides advanced fundamental instruction in the performance of weight training exercises with emphasis on singular muscle movement.

**Prerequisite(s):** PEA 187 - Weight Training I.**Physical Education - Coaching/Officiating****PEC 101 - Introduction to Coaching****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Coaching consists of a four-part course that includes coaching theory, sports medicine, sports psychology, and sports physiology. It leads to coaching authorization for the State of Iowa as a junior high or senior high school coach.

**PEC 161 - Sports Officiating****3.0 Credit(s)****Lecture 3****Lab 0**

Sports Officiating introduces student to the world of a sports official. This course focuses on principles and standards, rules, mechanics and procedures for officiating competitive sports.

**PEC 230 - Introduction to Sports Medicine****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Sports Medicine provides an overview of current sports medicine topics. It introduces the care and treatment for today's sport and exercise participant. This course is designed for both the sports science and non-sports science emphasis.

**PEC 231 - Theory and Principles of Recreational Sport****3.0 Credit(s)****Lecture 3****Lab 0**

Theory and Principles of Recreational Sport offers a comprehensive picture of recreational sport management for people entering all sectors of recreation and leisure, including public, nonprofit, and commercial. Students will understand how to design, deliver, and manage recreational sport programs.

**Physical Education & Health - General****PEH 102 - Health****3.0 Credit(s)****Lecture 3****Lab 0**

Health provides an overview of selected areas related to promoting one's physical well-being and general health. It surveys the role of healthy life-styles in the physical, emotional, sexual, and spiritual dimensions of humans.

**PEH 130 - CPR and First Aid in the Workplace****1.0 Credit(s)****Lecture 1****Lab 0**

CPR and First Aid in the Workplace prepares the bystander with lifesaving, hands-on instruction in many emergency situations. Emphasis centers on real life responses and what to do in the first five minutes of an emergency.

**PEH 142 - First Aid****3.0 Credit(s)****Lecture 3****Lab 0**

First Aid emphasizes the value and need of training in first aid as a preparation for life. It also stresses safety and accident prevention. Successful completion of the course requirements leads to a Standard First Aid certificate.

**PEH 170 - Principles of Weight Training****3.0 Credit(s)****Lecture 2****Lab 2**

Principles of Weight Training identifies the anatomical and physiological processes of muscle development and the effects of weight training on those processes. It focuses on the basic principles of weight training and the mastering of techniques which apply to personal development and to coaching applications.

**Physical Education - Training****PET 230 - Care and Prevention of Athletic Injuries****3.0 Credit(s)****Lecture 3****Lab 0**

Care and Prevention of Athletic Injuries introduces athletic training procedures as they relate to the athlete, physical education, coach, and trainer. Included is the history of the training profession, ethics, testing, fitness development, and care and prevention of common sports injuries.

**Prerequisite(s):** PEC 230 - Introduction to Sports Medicine.

**PET 240 - Taping and Bracing****2.0 Credit(s)****Lecture 2****Lab 0**

Taping and Bracing will focus on the stabilizing procedures used to assist in the healing process of athletic injuries. A hands-on approach will be used throughout the course.

**Physical Education - Intercollegiate****PEV 105 - Varsity Sports Participation I****1.0 Credit(s)****Lecture 0****Lab 2**

Varsity Sports Participation I gives credit for knowledge and skills gained through varsity sports participation.

**Prerequisite(s):** Permission from the instructor.

**PEV 109 - Varsity Sports Participation II****1.0 Credit(s)****Lecture 0****Lab 2**

Varsity Sports Participation II gives credit for advanced knowledge gained through varsity sports participation.

**Prerequisite(s):** PEV 105 - Varsity Sports Participation I.

**PEV 185 - Progressive Resistance Training I****1.0 Credit(s)****Lecture 0****Lab 2**

Progressive Resistance Training I introduces students with no prior background to sport specific resistance training.

**Prerequisite(s):** Permission from the instructor.

**PEV 187 - Progressive Resistance Training II****1.0 Credit(s)****Lecture 0****Lab 2**

Progressive Resistance Training II continues exposure to students with moderate background in sport specific resistance training.

**Prerequisite(s):** PEV 185 - Progressive Resistance Training I.

**Physical Science****PHS 141 - Dinosaurs****4.0 Credit(s)****Lecture 3****Lab 2**

Dinosaurs focuses on the evolution and understanding of dinosaur fossil records. Students examine the geologic record and the tools used by paleontologists to determine geologic ages, ancient environments, evolutionary history and extinctions, dinosaurian biology and behavior, and survival as birds. Mechanisms of global change ranging from plate tectonics to asteroid impact are discussed. This class will have required, all day field trips.

**PHS 142 - Principles of Astronomy****3.0 Credit(s)****Lecture 3****Lab 0**

Principles of Astronomy is the study of the Universe. Students learn the structure, history, and formation of the solar system. Content includes the history of astronomy from the stone age to modern space exploration. Students learn the lifecycle of stars, galaxies, and the Universe as a whole.

**PHS 143 - Principles of Astronomy Lab****1.0 Credit(s)****Lecture 0****Lab 2**

Principles of Astronomy Lab applies basic phenomena, methods, and data acquisition in astronomy. The use of the scientific method is emphasized in the laboratory exercises. Laboratory experiments will enhance lecture material.

**Prerequisite(s):** PHS 142 - Principles of Astronomy

**Corequisite(s):** PHS 142 - Principles of Astronomy

**PHS 160 - Introduction to Oceanography****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Oceanography provides the student with an overview of the interdisciplinary study of Earth's oceans. This course explores the abiotic and biotic factors that affect the oceanic ecosystem. Topics covered will include the origins and geology of ocean basins, the motion of waves, currents, and tides, beach processes, the nature of marine water, ocean life, and ecosystems. Course discussions include the environmental issues faced by Earth's oceans.

**PHS 165 - Introduction to Meteorology****3.0 Credit(s)****Lecture 3****Lab 0**

Introduction to Meteorology introduces the study of the atmosphere and atmospheric processes. Course content examines atmospheric characteristics that lead to common weather phenomena. Topics include air masses, study of precipitation, fronts, clouds, storms, weather patterns, air pollution, and climate change.

**PHS 172 - Physical Geology****4.0 Credit(s)****Lecture 3****Lab 2**

Physical Geology provides an overall view of the Earth, including studies of the Earth's change, formation of continents, and the general theories of evolution of the Earth. Laboratories cover rock formations, minerals of the Earth, erosional changes, and identification of faults and related crustal changes.

**PHS 187 - Introduction to Earth Science****4.0 Credit(s)****Lecture 3****Lab 2**

Introduction to Earth Science studies the physical elements and processes that make up the Earth and our Solar System. Students learn how the Earth functions as a system with the hydrosphere, lithosphere, and atmosphere interacting to form daily patterns. Various Earth processes are discussed: heating and pressure of air, winds, storms, climates and causes, the role of the oceans, landform processes of plate tectonics, mountain building, volcanism, gradation and fluvial processes, and glaciation. Laboratory exercises include: atmospheric heating, air pressure, winds, storms, working with maps, landform processes of plate tectonics, mountain building, Earth materials, volcanism, gradation and fluvial processes, and glaciation. Lab experiments will enhance lecture material.

**Physics****PHY 156 - General Physics I****4.0 Credit(s)****Lecture 4****Lab 0**

General Physics I is the first part of a two-semester course designed for students with no prior background in physics. Topics covered are mechanics, heat, waves, and sound.

**Prerequisite(s):** Math placement; or a grade of "C" or higher in MAT 102 - Intermediate Algebra.

**PHY 157 - General Physics I Lab****1.0 Credit(s)****Lecture 0****Lab 2**

General Physics I Lab is a one-semester laboratory course for students enrolled in General Physics I. Topics include mechanics, wave motion, and sound.

**Prerequisite(s)/Corequisite(s):** PHY 156 - General Physics I.

**PHY 158 - General Physics II****4.0 Credit(s)****Lecture 4****Lab 0**

General Physics II is the second part of a two-semester continuing course designed for students with no prior background in physics. The course includes thermodynamics, electricity, magnetism, optics, and special relativity.

**Prerequisite(s):** PHY 156 - General Physics I

**PHY 159 - General Physics II Lab****1.0 Credit(s)****Lecture 0****Lab 2**

General Physics II Lab is a one-semester laboratory course for students enrolled in General Physics II. Topics covered: thermodynamics, electricity, magnetism, optics, and special relativity.

**Prerequisite(s):** PHY 158 - General Physics II

**Corequisite(s):** PHY 158 - General Physics II

**PHY 210 - Classical Physics I****4.0 Credit(s)****Lecture 4****Lab 0**

Classical Physics I is the first part of a two-semester continuing course for students majoring in science, mathematics or engineering. Kinematics, dynamics, circular motion, work, energy, linear momentum, rotational dynamics, torque, static equilibrium, fluids, wave motion, and sound are covered.

**Prerequisite(s)/Corequisite(s):** MAT 217 - Calculus II.

**PHY 211 - Classical Physics I Lab****1.0 Credit(s)****Lecture 0****Lab 2**

Classical Physics I Lab is a one-semester laboratory course for students enrolled in Physics I - Calculus Level. The course covers experiments in kinematics, dynamics, circular motion, work, energy, linear momentum, rotational dynamics, torque, static equilibrium, fluids, wave motion, and sound.

**Prerequisite(s)/Corequisite(s):** PHY 210 - Classical Physics I.

**PHY 220 - Classical Physics II****4.0 Credit(s)****Lecture 4****Lab 0**

Classical Physics II is the second part of a two-semester continuing course for students majoring in science, mathematics or engineering. Thermal expansion, wave motion, electricity, magnetism, AC and DC circuits, light, lenses, and special relativity are covered.

**Prerequisite(s):** MAT 217 - Calculus II.

**PHY 221 - Classical Physics II Lab****1.0 Credit(s)****Lecture 0****Lab 2**

Classical Physics II Lab is a one-semester laboratory course for students enrolled in Physics II - Calculus Level. The course covers experiments in thermal expansion, wave motion, electricity, magnetism, AC and DC circuits, light, and lenses.

**Corequisite(s):** PHY 220 - Classical Physics II

**Prerequisite(s)/Corequisite(s):** PHY 220 - Classical Physics II.

**PHY 715 - Technical Physics I****5.0 Credit(s)****Lecture 3****Lab 4**

Technical Physics I stresses the mechanical principles of physics. Subject areas include vectors, equilibrium, laws of motion, work and energy principles, conservation laws, work, energy, motion, and the use of mathematics to solve problems.

## Plumbing

### PLU 101 - Pipefitting for Maintenance Trades

**2.0 Credit(s)**

**Lecture 1**

**Lab 2**

Pipefitting for Maintenance Trades introduces plumbing definitions, plumbing workmanship, valves, and drainage fixture units as it relates to industrial maintenance. Course will teach pipe joining techniques, materials, codes, and assembly methods.

### PLU 108 - Plumbing Code

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Plumbing Code provides information on how to read and understand plumbing codes for residential and commercial dwellings.

### PLU 148 - Plan and Print Reading for Plumbing

**2.0 Credit(s)**

**Lecture 2**

**Lab 0**

Plan and Print reading for Plumbing provides instruction in plan and print reading for plumbing system installations. Combines plan and print reading assignments together with drawing assignments.

### PLU 178 - Residential Plumbing Lab

**6.0 Credit(s)**

**Lecture 3**

**Lab 6**

Residential Plumbing Lab teaches the various types of pipe and fittings used in residential plumbing systems. Students have hands-on experience in the installation of residential plumbing. Students learn how to install fixtures, faucets, and appliances.

### PLU 181 - Commercial Code

**2.0 Credit(s)**

**Lecture 2**

**Lab 0**

Commercial Code provides information on how to read and understand the required codes that govern plumbing procedures in commercial buildings. Students practice using the code books to identify the required procedures.

### PLU 188 - Commercial Plumbing Lab

**6.0 Credit(s)**

**Lecture 3**

**Lab 6**

Commercial Plumbing Lab teaches the various types of pipe and fittings used in commercial plumbing systems. Student have hands-on experience in the installation of commercial plumbing. Students learn how to install fixtures, faucets, and appliances.

### PLU 190 - Plumbing Troubleshooting

**2.0 Credit(s)**

**Lecture 2**

**Lab 0**

Plumbing Troubleshooting introduces the basic troubleshooting skills to repair drains, waste and vent systems, water supplies, and natural gas lines. Scenarios are provided to enable students to diagnose the issue and repair the system. Students are exposed to various methods of troubleshooting on a variety of plumbing systems.

### PLU 198 - Applied Plumbing Practices

**3.0 Credit(s)**

**Lecture 1**

**Lab 4**

Applied Plumbing Practices teaches students troubleshooting skills that will be essential when they work as a plumber. Students repair commercial and residential systems which include drains, waste and vent systems, water supplies, and natural gas lines. Students learn in a hands-on lab and demonstrate customer skills as they troubleshoot the repairs.

**Prerequisite(s):** PLU 178 - Residential Plumbing Lab

## Political Science

### POL 111 - American National Government

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

American National Government examines the fundamentals of democracy and the basic principles of the United States Government including an examination of the United States Constitution, civil liberties and civil rights, intergovernmental relations, the political process of policy-making, and the bureaucratic system. The three branches of national government are emphasized.

### POL 112 - American State and Local Government

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

American State and Local Government covers the fundamental principles and practices of state and local government in the United States, including an examination of the context of state and local government, state constitutions, intergovernmental relations, channels of influence, the political process, city and county government, and the three branches of state government with special attention to the state of Iowa. In addition, contemporary issues are examined.

### POL 121 - International Relations

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

International Relations is the study of international politics and the interaction between state and non-state actors, with emphasis on those elements underlying the international political system. Topics include the international environment, the structure of interstate relations, the formulation and implementation of policy, and the importance of security, welfare, legality, and morality considerations in international relations.

**Note(s):** Meets diversity requirement for graduation.

### POL 201 - The U.S. Constitution

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

The U.S. Constitution focuses on the historical evolution of the United States Constitution with emphasis on its antecedents, interpretation, and change. Topics include a study of the Constitution's historical background and its basic features, a study of the seven articles and twenty-six amendments, and an examination of current topics.

## Psychology

### PSY 111 - Introduction to Psychology

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Introduction to Psychology provides an introduction to the subject matter, terminology, basic research findings, and current topics of interest in scientific psychology. Students explore the biological foundations of human behavior, social-environmental influences, and intra-psychic elements, including perception, consciousness, personality, and motivation. A holistic approach is used to understand abnormal behavior, human growth and development, health, stress, and coping.

### PSY 113 - Personality and Adjustment

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Personality and Adjustment deals with some of the problems many people face, such as family disputes, drugs, deaths, and prejudice. It also covers topics telling how people learn and develop personalities and what motivates them to behaviors. This course allows students an opportunity to become more aware of themselves and own personalities as a normal process of growth.

### PSY 121 - Developmental Psychology

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Developmental Psychology examines the life span of humans from conception through death. It looks at the various traditional stages (prenatal, neonatal, infancy, early childhood, late childhood, adolescence, adulthood, old age) and explores various aspects, viewpoints, and research.

### PSY 210 - Sport and Exercise Psychology

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Sport and Exercise Psychology is the scientific study of people and behavior in a sport and exercise context. Principles and guidelines are identified to help gain benefits from sport and exercise activities.

### PSY 224 - Adolescent Psychology

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Adolescent Psychology explores the rapid physical, social, emotional, and cognitive changes of adolescents. Students distinguish myths about adolescence from research findings and examine the importance of cultural and historical factors in this crucial transition from childhood to adulthood.

**Prerequisite(s):** PSY 111 - Introduction to Psychology or permission from the instructor.

### PSY 241 - Abnormal Psychology

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Abnormal Psychology is the study of the various forms of psychological abnormality and explores methods of prevention, diagnosis and treatment. It explores biological, psychological and sociological contributions to the development of abnormal behavior. Course content includes problems with anxiety, depression and thought disorder.

**Prerequisite(s):** PSY 111 - Introduction to Psychology.

### PSY 251 - Social Psychology

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Social Psychology explores the impact of the social environment on individual functioning. Humans are social animals born into ongoing social worlds which shape thoughts, feelings and personalities. Social Psychology scientifically examines such topics as attitude change, prejudice, conformity, obedience, aggression, and attraction.

**Prerequisite(s):** PSY 111 - Introduction to Psychology or SOC 110 - Introduction to Sociology.

### PSY 261 - Human Sexuality

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Human Sexuality focuses on normal sexual development, human sexual responses, and common sexual problems. It provides factual information on human sexuality and raises practical questions about human sexual behavior. It also helps students examine and evaluate views and values concerning sexual behavior.

**Prerequisite(s):** Students must have taken one of the following three courses: PSY 111 - Introduction to Psychology, SOC 110 - Introduction to Sociology, or SOC 120 - Marriage and Family.

### PSY 281 - Educational Psychology

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Educational Psychology applies the principles of psychology to classroom contexts. Topics include child/adolescent development, learning, motivation, instructional techniques, and assessment/evaluation.

**Prerequisite(s):** ECE 170 - Child Growth and Development or PSY 121 - Developmental Psychology.

**Note(s):** Co-numbered with EDU 240

### PSY 293 - Issues in Psychology

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Issues in Psychology is designed for students interested in becoming psychology or social sciences majors. It expands upon the information presented in Introduction to Psychology and helps to develop critical thinking and reasoning skills. Content includes a more rigorous discussion of potential career options, teaching the skills needed for success in psychology programs, and building familiarity with basic research. Enrollment in this course is strongly encouraged for psychology majors

**Prerequisite(s):** PSY 111 - Introduction to Psychology.

## Religion

### REL 101 - Survey of World Religions

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Survey of World Religions provides insights into the nature of religious belief through the study of primitive religions, Hinduism, Buddhism, Taoism, Confucianism, Islam, Judaism, and Christianity.

**Note(s):** Meets diversity requirement for graduation.

## Speech

### SPC 112 - Public Speaking

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Public Speaking analyzes the fundamentals of oral communication. It covers lectures, readings, and applications of the six principal aspects of public speaking: the speaker, the audience, thought and content, organization, language, and delivery. It also examines the basic principles of small group communication: leadership, the decision-making process, and individual participation in a small group.

### SPC 120 - Intercultural Communications

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Intercultural Communications emphasizes communication theory across cultures. Focus is on identifying the cultural bases of beliefs, attitudes, values and behaviors. Interactive assignments are used for the purpose of recognizing commonalities across cultures, developing a more global multicultural perspective, identifying and appreciating other cultural orientations, and recognizing and assigning cultural explanations of specific behaviors.

**Note(s):** Meets diversity requirement for graduation.

### SPC 122 - Interpersonal Communication

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Interpersonal Communication examines the skills of interpersonal communication in both a dual or group situation. It includes an investigation into the process of communication, language, nonverbal communication, listening, self-concept, emotions, or the nature of relationships and conflict.

### SPC 170 - Professional Communications

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Professional Communications provides an introduction to the principles of professional communication and the communication skills utilized in professional environments. Communication methods will be applied to organizational settings in such forms as interpersonal relationships, interviewing, collaborative group work, methods of conflict resolution, technological communication, and public speaking. The course explores communication theory, organizational culture, perception, leadership, power, diversity, listening, verbal and nonverbal communication.

## Sociology

### SOC 107 - Sports and Society

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Sports and Society explores the relationships between society and sports. Organized sports, as one of America's most influential social institutions, provides a lens with which modern sociologists and other interested academics or casual learner can understand difficult relationships of inequality, race/ethnicity, gender, class, and culture. By looking at the historical context in which many of the organized sports have developed as well as the present political/cultural climate in which they are currently nested, students develop a sociological imagination necessary to process a complex world.

### SOC 110 - Introduction to Sociology

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Introduction to Sociology explores the discipline of sociology. Students become familiar with the sociological perspective of the study of human social behavior. The course stresses the development of sociology, social theory, research methods, social institutions (e.g., the family, religion, education, culture, deviant behavior, and demography).

### SOC 115 - Social Problems

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Social Problems acquaints students with theoretical, methodological, and substantive issues in the sociological study of social problems. It examines a variety of social problems in terms of issues in the definition of social problems, difficulties in the measurement of the extent of social problems, contributions that have been made to explaining various aspects of social problems, and the implications of this knowledge for intervention (alleviation or treatment) or prevention of social problems. The course offers examples of social problems, such as racism, environmental decay, sexism, crime and delinquency, and child abuse.

### SOC 120 - Marriage and Family

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Marriage and Family acquaints students with theoretical, methodological, and substantive issues in the sociological study of marriage and family. The course begins with a basic orientation on the structure of the family in society and in other cultures. Other topics include premarital interaction, mate selection, marital and sexual adjustment, and alternative utopian family experience.

**SOC 198 - The Middle East****3.0 Credit(s)****Lecture 3****Lab 0**

In a world increasingly globalized, borders are no longer barriers. Within the Middle East, there are great political and economic inequalities among various Muslim and non-Muslim, Arab and non-Arab countries. This course is created to help acquire a basic knowledge and understanding of the region from historical, economic, political, cultural, religious, artistic, and geographic perspectives on a per country basis.

**Note(s):** Meets diversity requirement for graduation.**SOC 200 - Minority Group Relations****3.0 Credit(s)****Lecture 3****Lab 0**

Minority Group Relations explores the patterns of emigration and immigration of the major ethnic and racial groups in American society (e.g. African Americans, Asian Americans, Hispanic Americans, Native Americans, and White Ethnic Americans). Special attention covers the culture of each group and experience in American society. Students explore patterns of interaction between majority and minority groups as they relate to the cultural, economic, political, and historical experience of each group.

**Note(s):** Meets diversity requirement for graduation.**SOC 210 - Men, Women and Society****3.0 Credit(s)****Lecture 3****Lab 0**

Men, Women and Society explores the meaning and social aspects of gender. Using sociological concepts, this course analyzes how social institutions shape gender relations and identities. A considerable amount of the course will focus on how social institutions such as family, education, state and economy shape gender realities in society.

**Note(s):** Meets diversity requirement for graduation.**SOC 230 - Juvenile Delinquency****3.0 Credit(s)****Lecture 3****Lab 0**

Juvenile Delinquency studies the theories of delinquency causation and recent research. This course focuses on delinquent behavior and law enforcement as related to the modern social institutions in American culture. Students explore societal reactions to the problem of juvenile crime and analyze the history and the functions of the juvenile court.

**SOC 235 - Gangs****3.0 Credit(s)****Lecture 3****Lab 0**

Gangs provides an in-depth study of the youth gang problem in America. It assesses the causes, consequences, and the social and legal reactions to youth gangs. Gangs also includes the study of youth gang violence, female gangs, race and gangs, classical and contemporary theories of youth gangs, drugs and gangs, youth gangs in historical perspective and youth gangs in other societies, youth gang interventions, and the future of youth gangs.

**Prerequisite(s):** SOC 110 - Introduction to Sociology, CRJ 100 - Introduction to Criminal Justice, SOC 240 - Criminology, or SOC 230 - Juvenile Delinquency.**SOC 240 - Criminology****3.0 Credit(s)****Lecture 3****Lab 0**

Criminology surveys the history, nature, and causes of crime; criminal behavior patterns, investigation, and prosecution; correctional methods; and the structure of the prison system. The criminal behavior patterns include violent crimes, organized crime, white-collar crime, and theft.

**SOC 250 - Sociology of Deviance****3.0 Credit(s)****Lecture 3****Lab 0**

Sociology of Deviance explores the processes of conformity and nonconformity and social control in society. Types of deviance from crime to social forms and social reaction to deviance will be analyzed using sociological concepts.

**SOC 261 - Human Sexuality****3.0 Credit(s)****Lecture 3****Lab 0**

Human Sexuality course in an introduction to the study of the dynamics of human sexuality. Emphasis is given to the physiological, psychological, and social aspects of sexuality.

**SOC 908 - Cooperative Education****1.0 - 6.0 Credit(s)****Lecture 0****Lab 0****Co-Op 4-24**

Cooperative Education provides cooperative work experience related to social science courses. Work experience hours are arranged.

**Prerequisite(s):** Permission from the instructor.**Student Development****SDV 108 - The College Experience****1.0 Credit(s)****Lecture 1****Lab 0**

College Experience equips first-year students with the knowledge and skills needed to successfully transition to college. Students learn information, tips, and strategies that will ultimately make academic careers and extracurricular interests more productive and enjoyable. Topics include campus resources and support services, learning styles, study and test-taking skills, students' rights and responsibilities, personal exploration and development, and financial literacy, as well as academic and career planning. This course should be taken the first semester of a student's enrollment.

**SDV 140 - College Success Skills for English Language Learners****3.0 Credit(s)****Lecture 3****Lab 0**

College Success Skills for English Language Learners equips students with the knowledge and skills needed to successfully transition to college. Strategies beneficial to ESL students will be utilized. Topics include learning about campus resources and support services, learning styles, study and test taking skills, students' rights and responsibilities, personal exploration and development, financial literacy, as well as academic and career planning.

**WBL 100 - Exploring Careers****1.0 Credit(s)****Lecture 1****Lab 0**

Exploring Careers provides students guidance in choosing a career goal and preparing for employment. Emphasis is placed on identifying interests, abilities, and values, and exploring options for careers. Students learn how to access labor market information and follow employment trends. Additionally, students develop the skills and aptitudes necessary to obtain employment, emphasizing the development of characteristics associated with job success.

**WBL 110 - Employability Skills****3.0 Credit(s)****Lecture 3****Lab 0**

Employability Skills assists students in developing the skills necessary to obtain employment, and to learn and practice skills and attitudes required for job success. Students practice resume writing, job application completion, and interviewing techniques. Additionally, students practice workplace problem-solving strategies, and demonstrate skills required to work in a diverse environment.

**Surgical Technology****SUR 134 - Introduction to Surgical Technology and Anesthesia****3.0 Credit(s)****Lecture 2****Lab 2**

Introduction to Surgical Technology and Anesthesia introduces the broad field of surgical technology. This introductory course has six basic sections: (1) General introductory information, (2) Perioperative patient care including anesthesia and medication handling, (3) Communication, teamwork, leadership, and management techniques, (4) The surgical patient and special patient populations, (5) Physical environment and safety standards, (6) Legal concepts, risk management, and ethical issues.

**Prerequisite(s):** HSC 203 - Sterile Processing Fundamentals, BIO 173 - Human Anatomy and Physiology II, PSY 121 - Developmental Psychology, MGT 195 - Workplace Empowerment.

**SUR 141 - Introduction to Basic Surgical Principles****6.0 Credit(s)****Lecture 4****Lab 6**

Introduction to Basic Surgical Principles introduces perioperative routines, basic principles of aseptic technique, patient care and safety. Instrumentation as it applies to surgical procedures, wound healing and surgical case management are also introduced.

**Prerequisite(s):** BIO 168 - Human Anatomy and Physiology I.

**SUR 215 - Basic Surgical Principles****5.0 Credit(s)****Lecture 5****Lab 0**

Basic Surgical Principles builds upon the concepts of introductory surgical technology principles. Emphasis is placed on perioperative events (PACU, discharge planning, emergency situations, organ transplant and procurement). Students learn the basic knowledge of biomedical science, informational technology, interventional radiology, minimally invasive surgery, and explore all-hazards preparation procedures.

**Prerequisite(s):** BIO 186 - Microbiology, SUR 134 - Introduction to Surgical Technology and Anesthesia, and SUR 141 - Introduction to Basic Surgical Principles.

**SUR 221 - Surgical Technology****4.0 Credit(s)****Lecture 4****Lab 0**

Surgical Technology provides related theory for a variety of surgical specialties to build on existing technical skills. The surgical specialties of general, genitourinary, gynecology, ENT, plastic, ophthalmology, maxillofacial, and pediatric modifications thereof are studied. Emphasis is placed on related surgical anatomy, pathology, and procedures, thereby enhancing theoretical knowledge of patient care.

**Prerequisite(s):** BIO 186 - Microbiology, SUR 134 - Introduction to Surgical Technology and Anesthesia, and SUR 141 - Introduction to Basic Surgical Principles.

**SUR 320 - Advanced Surgical Technology****2.0 Credit(s)****Lecture 2****Lab 0**

Advanced Surgical Technology provides related theory in complex surgical specialties. The surgical specialties of orthopedics, neurology, cardiothoracic and Peripheral Vascular are studied. Emphasis is placed on related surgical anatomy, pathology, and procedures, thereby enhancing theoretical knowledge of complex patient care, instrumentation, supplies and equipment. Students will independently complete a research project relating to a surgical procedure.

**Prerequisite(s):** SUR 215 - Basic Surgical Principles, SUR 221 - Surgical Technology, BIO 173 - Human Anatomy and Physiology II.

**SUR 518 - Clinical I****5.0 Credit(s)****Lecture 0****Lab 0****Internship 15**

Clinical I will provide clinical experience for a variety of perioperative assignments. Students focus on maintaining the integrity, safety, and efficiency of the sterile and non-sterile fields throughout various surgical procedures. Emphasis is placed on the skills of preparing, assisting with, and dismantling basic surgical cases in the surgical technologist role.

**Prerequisite(s):** BIO 186 - Microbiology, SUR 134 - Introduction to Surgical Technology and Anesthesia, and SUR 141 - Introduction to Basic Surgical Principles.

**SUR 524 - Clinical II****5.0 Credit(s)****Lecture 0****Lab 0****Internship 15**

Clinical II provides individualized experience in advanced practice. Emphasis is placed on greater technical skills, critical thinking, speed, efficiency, and autonomy in the operative setting.

**Prerequisite(s):** SUR 215 - Basic Surgical Principles, SUR 221 - Surgical Technology, and SUR 518 - Clinical I.

**Veterinary Technology****AGV 100 - Introduction to Veterinary Technology****2.0 Credit(s)****Lecture 2****Lab 0**

Introduction to Veterinary Technology gives veterinary technology students an understanding of veterinary medical ethics, the Veterinary Practice Act, and veterinary technicians and the law. Other topics include regulatory veterinary medicine, public relations in veterinary medicine, and identification of dog and cat breeds. The course is taught in the overall context of the role of the veterinary technician in the profession of veterinary medicine.

**AGV 104 - Veterinary Technology Anatomy and Physiology I****3.0 Credit(s)****Lecture 2****Lab 3**

Veterinary Technology Anatomy and Physiology I provides instruction in anatomy and physiology of domestic animals. Course focus is on skeletal, musculature, renal, ophthalmic, cardiac, and respiratory systems. Lab activities focus on skeletal identification and dissection of related body systems of domestic animals.

**AGV 108 - Veterinary Technology Anatomy and Physiology II****3.0 Credit(s)****Lecture 2****Lab 3**

Veterinary Technology Anatomy and Physiology II provides instruction in anatomy and physiology of domestic animals. This course explores cardiovascular, neurological, integumentary, reproductive, and digestive systems. The lab portion of this course supplements lecture with activities surrounding small animal anatomy.

**AGV 110 - Principles of Veterinary Technology I****3.0 Credit(s)****Lecture 2****Lab 3**

Principles of Veterinary Technology I introduces veterinary technology students to the topics of immunology, small animal diseases, and small animal vaccination protocol. The laboratory portion of the course focuses on dog and cat restraint and nursing skills.

**AGV 115 - Principles of Veterinary Technology II****3.0 Credit(s)****Lecture 2****Lab 3**

Principles of Veterinary Technology II provides veterinary technology students with instruction in veterinary clinical medicine and procedures. Topics include small animal dentistry, ophthalmology, wound healing and bandaging, first aid, toxicology, emergency care, and small animal obstetrics. The laboratory section provides hands-on experience in small venipuncture, dentistry, bandaging, and other small animal nursing skills.

**Prerequisite(s):** A grade of "C" or higher in all first-semester Veterinary Technology courses.

**AGV 120 - Veterinary Medical Terminology****1.0 Credit(s)****Lecture 1****Lab 0**

Veterinary Medical Terminology gives students a working knowledge of roots, prefixes and suffixes of words commonly used in veterinary medicine. Emphasis is placed on correct spelling, pronunciation, and use of words in context. Abbreviations used in veterinary medicine are also covered.

**AGV 122 - Principles of Sanitation****3.0 Credit(s)****Lecture 2****Lab 3**

Principles of Sanitation provides instruction on basic sanitation principles used in veterinary medicine. Topics include cause of disease, spread of infectious disease, autoclaves and other sterilization procedures used in veterinary medicine, use of disinfectants, and environmental factors which influence spread of disease. Parasitology, including parasite life cycles and public health significance, and zoonotic diseases are also covered.

**AGV 135 - Clinical Pathology Lab Techniques I****3.0 Credit(s)****Lecture 2****Lab 3**

Clinical Pathology Lab Techniques I provides lecture and laboratory instruction in skills veterinary technicians utilize in a clinical pathology laboratory setting. Topics include specimen management, performance of analytical tests, and procedures on blood, urine and feces.

**Prerequisite(s):** A grade of "C" or higher in all first-semester Veterinary Technology courses.

**AGV 136 - Clinical Pathology Lab Techniques II****4.0 Credit(s)****Lecture 3****Lab 3**

Clinical Pathology Lab Techniques II provides lecture and laboratory instruction in skills veterinary technicians utilize in a clinical pathology laboratory setting. Topics include blood chemistry analysis, serology, histology, and dermatology.

**Prerequisite(s):** A grade of "C" or higher in all first-year Veterinary Technology courses.

**AGV 140 - Veterinary Pharmacology****3.0 Credit(s)****Lecture 3****Lab 0**

Veterinary Pharmacology provides instruction about drugs and medications used in veterinary medicine. Classification of drugs, writing prescriptions, controlled drugs, and the legal use of drugs in veterinary practices are discussed.

**Prerequisite(s):** A grade of "C" or higher in all first-semester Veterinary Technology courses.

**AGV 142 - Mathematics for Veterinary Technicians****3.0 Credit(s)****Lecture 3****Lab 0**

Mathematics for Veterinary Technicians includes a brief review of fractions, decimals, percents, ratios, and solving of algebraic functions. The purpose of this course is to instruct veterinary technology students in methods of accurate measurement and calculation of drug dosages. Topics include the metric system, Apothecaries' equivalents, conversion of units of measurement, and preparation of solutions and dilutions. While there is no prerequisite, a working knowledge of arithmetic operations using whole numbers, fractions, decimals, and percents is expected.

**Prerequisite(s):** A grade of "C" or higher in all second-semester Veterinary Technology courses.

**AGV 145 - Animal Nutrition****3.0 Credit(s)****Lecture 3****Lab 0**

Animal Nutrition provides instruction regarding essential nutrients and the role of each in an animal's metabolism. Topics include basic clinical and therapeutic nutrition, pet food analysis, nutritional deficiencies, and toxins. Emphasis is on dogs and cats with an introduction to large animal nutrition, feeds and feeding.

**Prerequisite(s):** A grade of "C" or higher in all second-semester Veterinary Technology courses.

**AGV 147 - Large Animal Care****4.0 Credit(s)****Lecture 2****Lab 4**

Large Animal Care provides students with a background in large animal breeds and breed identification, large animal diseases, obstetrics, vaccination protocol, and disease prevention. Laboratory topics include large animal restraint, nursing procedures, anesthesia, and surgical assisting. Experience is provided on live animals in a field setting.

**Prerequisite(s):** A grade of "C" or higher in all first-year Veterinary Technology courses.

**AGV 149 - Avian, Exotic and Lab Animal Care****3.0 Credit(s)****Lecture 2****Lab 2**

Avian, Exotic and Lab Animal Care covers basic avian, exotic and laboratory animal medicine. Lecture topics include breed and sex identification, housing requirements, nutritional requirements, common diseases, and the use of laboratory animals in research. The laboratory provides hands-on training in restraint, nursing procedures, and anesthesia of birds, exotic, and laboratory animals.

**Prerequisite(s):** A grade of "C" or higher in all third-semester Veterinary Technology courses.

**AGV 150 - Office Procedures for Veterinary Technicians****3.0 Credit(s)****Lecture 3****Lab 0**

Office Procedures for Veterinary Technicians includes an overview of veterinary practice management and office procedures. Topics include basic filing, record-keeping, telephone etiquette, cash drawer management, and the economics of veterinary practice. Instruction on the use of veterinary practice management computer software is provided.

**Prerequisite(s):** A grade of "C" or higher in all first-year Veterinary Technology courses.

**AGV 170 - Veterinary Anesthesiology****3.0 Credit(s)****Lecture 2****Lab 3**

Veterinary Anesthesiology provides lecture and laboratory instruction in skills veterinary technicians utilize in a clinical setting. Topics include anesthesia, pain management and fluid therapy.

**Prerequisite(s):** A grade of "C" or higher in all first-year Veterinary Technology courses.

**AGV 182 - Diagnostic Imaging****3.0 Credit(s)****Lecture 2****Lab 3**

Diagnostic Imaging provides lecture and laboratory instruction in skills veterinary technicians utilize in a clinical setting. Topics include radiology with an emphasis on detail, density and contrast, as well as ultrasonography.

**Prerequisite(s):** A grade of "C" or higher in all third-semester Veterinary Technology courses.

**AGV 185 - Veterinary Surgical Assisting****3.0 Credit(s)****Lecture 2****Lab 3**

Veterinary Surgical Assisting provides lecture and laboratory instruction in skills veterinary technicians utilize in a clinical setting. Topics emphasized include surgical nursing, critical care and fluid therapy.

**Prerequisite(s):** A grade of "C" or higher in all third-semester Veterinary Technology courses.

**AGV 205 - Kennel Management and Animal Care I****1.0 Credit(s)****Lecture 0****Lab 4**

Kennel Management and Animal Care I will apply concepts for the necessary care of dogs and cats in a kennel environment. Husbandry techniques, record keeping, and sanitation of the animal facility will be demonstrated. Effective use of teamwork will be emphasized. Basic canine training and behavior modification techniques will be introduced.

**AGV 207 - Kennel Management and Animal Care II****1.0 Credit(s)****Lecture 0****Lab 4**

Kennel Management and Animal Care II is a continuation of the concepts of Kennel Management and Animal Care I. Preventative health care, health problem assessments, and nutritional requirements of dogs and cats will be emphasized. Canine behavior analysis and understanding feline behavior will be introduced.

**Prerequisite(s):** A grade of "C" or higher in all first-semester Veterinary Technology courses.

**AGV 209 - Kennel Management and Animal Care III****1.0 Credit(s)****Lecture 0****Lab 4**

Kennel Management and Animal Care III is a continuation of the concepts of Kennel Management and Animal Care II. Team leadership, communication, and office practices will be emphasized, as well as continuing work with canine behavior modification.

**Prerequisite(s):** A grade of "C" or higher in all first-year Veterinary Technology courses.

**AGV 211 - Kennel Management and Animal Care IV****1.0 Credit(s)****Lecture 0****Lab 4**

Kennel Management and Animal Care IV is a continuation of the concepts of Kennel Management and Animal Care III. This course will apply concepts for the necessary care of rats, rabbits, mice and guinea pigs in a kennel environment. Husbandry techniques, record keeping and sanitation of the animal facility will be demonstrated. Effective use of teamwork will be emphasized.

**Prerequisite(s):** A grade of "C" or higher in all third-semester Veterinary Technology courses.

**AGV 805 - Veterinary Technology Internship I****2.0 Credit(s)****Lecture 0****Lab 0****Internship 8**

Veterinary Technology Internship I is a cooperative education program during the first summer session of the veterinary technology program. Students work in the veterinary medical industry under the supervision of a licensed veterinarian for a minimum of 128 contact hours.

Students receive experience and mentoring in the following areas: scheduling appointments, filing radiographs, reports and client records; maintaining facility records; managing inventory; and handling routine financial transactions. Students also receive experience in a variety of clinical areas to be agreed upon prior to the internship between the student, the veterinarian, and the veterinary technology program chair.

**Prerequisite(s):** A grade of "C" or higher in all second-semester Veterinary Technology courses.

**AGV 806 - Veterinary Technology Internship II****3.0 Credit(s)****Lecture 0****Lab 0****Internship 12**

Veterinary Technology Internship II is a cooperative education program during the final semester of the veterinary technology program.

Students work in the veterinary medical industry under the supervision of a licensed veterinarian for a minimum of 192 contact hours.

Students receive experience and mentoring in the following areas: scheduling appointments, filing radiographs, reports and client records; maintaining facility records; managing inventory; and handling routine financial transactions. Students also receive experience in a variety of clinical areas to be agreed upon prior to the internship between the student, the veterinarian and the veterinary technology program chair.

**Prerequisite(s):** A grade of "C" or higher in all third-semester Veterinary Technology courses.

**Web Development****WDV 121 - Web Interface Design****3.0 Credit(s)****Lecture 3****Lab 0**

Web Interface Design covers the principles and best practices of designing a front-end web interface. Students will learn design skills that will allow for website usability, proper placement of content, navigation and other website controls. Students will review and analyze the latest trends in web layout.

**WDV 132 - Mobile Application Development****3.0 Credit(s)****Lecture 3****Lab 0**

This course will introduce students to the skills required for building native mobile applications (apps). Students will explore when and why an app makes sense over a mobile website and develop a range of small apps that take advantage of native device functionality. The differences between mobile operating systems will be explored along with the various distribution methods and publishing requirements currently available.

**WDV 133 - Mobile Web Apps****3.0 Credit(s)****Lecture 3****Lab 0**

Mobile Web Apps introduces students to the skills needed to build mobile web applications. Students utilize latest web coding technologies to produce browser-based apps that can be used on mobile devices. Students gain an understanding of the different types of mobile apps and what makes web development for handheld devices different from a traditional computer.

**Prerequisite(s):** CIS 213 - Advanced Client Side Scripting  
CIS 134 - Web Design

## Welding

### MFG 190 - Metallurgy

**2.0 Credit(s)**

**Lecture 1**

**Lab 2**

Metallurgy teaches students the basic theory of ferrous and non-ferrous metals. In addition, this course focuses on how metals differ in terms of hardness, brittleness, durability, resistance to corrosion, machinability and weldability. Basic welding practices and results are analyzed.

### WEL 117 - General Welding

**2.0 Credit(s)**

**Lecture 1**

**Lab 2**

General Welding introduces the fundamental skills involved in welding and cutting metals. Students learn to use Plasma cutting and Oxyacetylene cutting methods as well as Shielded Metal Arc Welding, Gas Metal Arc Welding, and Gas Tungsten Arc Welding techniques.

### WEL 149 - Fundamentals of Shielded Metal Arc Welding

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Fundamentals of Shielded Metal Arc Welding covers the fundamentals and technical knowledge of arc welding in the flat position on mild steel with different rods on different thicknesses of metal. Students practice safe welding.

### WEL 192 - Gas Tungsten Arc Welding

**4.0 Credit(s)**

**Lecture 1**

**Lab 6**

Gas Tungsten Arc Welding focuses on gas arc welding (TIG) and other related processes. Topics such as variation, welding in various positions, principle of operation, shielded gases, and filler rods are studied. Safety and practical application of these welding processes is stressed.

### WEL 208 - Introduction to Fabrication

**2.0 Credit(s)**

**Lecture 0**

**Lab 4**

Introduction to Fabrication combines lecture and lab activities to develop individualized skills needed in a manufacturing atmosphere such as tool usage, layout methods and material estimation. Students learn fabrication techniques of multiple metal types and properties.

### WEL 228 - Introduction to Welding, Safety, and Health of Workers

**1.0 Credit(s)**

**Lecture 1**

**Lab 0**

Introduction to Welding, Safety and Health of Workers will provide students with an orientation of the welding profession and will cover the basics of safety and health within the welding profession.

### WEL 233 - Print Reading and Welding Symbol

**Interpretations**

**3.0 Credit(s)**

**Lecture 3**

**Lab 0**

Print Reading and Welding Symbol Interpretations provides instruction in interpreting elements of welding prints (drawings or sketches), focusing on measurement, American Welding Society welding symbols, and fabrication requirements. Students will understand how to prepare, assemble, and tack welding parts according to drawings or sketches, using proper material and tools.

### WEL 240 - Welding Fabrication/ Certification

**3.0 Credit(s)**

**Lecture 1**

**Lab 4**

Welding Fabrication/Certification allows students to incorporate all previous welding skills in an effort to fabricate a group project. The student utilizes this course time to work towards AWS certification.

### WEL 256 - Gas Metal Arc Welding

**4.5 Credit(s)**

**Lecture 1**

**Lab 7**

Gas Metal Arc Welding (GMAW) covers safety and GMAW techniques in flat, horizontal, vertical, overhead positions. This course provides a variety of hands-on projects and experiments in the laboratory settings.

### WEL 259 - Oxy-Acetylene Arc Welding

**1.0 Credit(s)**

**Lecture 0**

**Lab 2**

Oxy-Acetylene Arc Welding provides students with basic fundamentals of oxy-acetylene welding, cutting, and brazing. The course familiarizes students with the safe operation of the cutting torch, use of different sizes of torch tips, and various weld joints and positions.

### WEL 301 - Pipe Welding

**2.0 Credit(s)**

**Lecture 1**

**Lab 2**

Pipe Welding provides students the theory and application of pipe welding. Students weld carbon steel and stainless steel pipe joints using the process of shielded metal arc welding.