

IOWA WESTERN COMMUNITY COLLEGE

General Catalog 2018-2019

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
(712) 542-5117
1-800-521-2073

Cass County Center

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

Shelby County Center

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

Page/Fremont County Center

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



The world is waiting

www.iwcc.edu

DISCLAIMER STATEMENT

The information contained in this catalog is subject to cancellation or change without notice. This catalog cannot be considered as an agreement or contract between individual students and Iowa Western Community College, its faculty, staff, administrators or directors.

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, pregnancy, marital status, veteran status, AIDS/HIV status, citizenship, or medical condition, as those terms are defined under applicable laws, in its educational programs, activities, or employment practices.

Questions or complaints? Contact Title IX and Equal Opportunity Coordinator, Kim Henry, or ADA Coordinator, Keri Zimmer, equity@iwcc.edu, 712-325-3200, or the Director of the Office for Civil Rights, U.S. Department of Education, Citigroup Center, 500 W. Madison, Suite 1475, Chicago, IL 60661, (312)-730-1560, OCR.Chicago@ed.gov. More information at <https://www.iwcc.edu/about/statement.asp>.

Iowa Western Community College is accredited as an Academic Quality Improvement Program (AQIP) institution by the Higher Learning Commission of the North Central Association of Colleges and Universities. Individuals should direct their questions, comments or concerns to the Higher Learning Commission, 30 North LaSalle Street, Suite 2400, Chicago, IL 60602, 800-621-7440 or (312) 263-0456, fax (312) 263-7462.

Iowa Western Community College Employment and Educational Equity Coordinators

Equal Employment Opportunity

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

Title IX and Other Forms of Discrimination

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

Disability Discrimination

Dean of Advising and Academic Success/ADA Coordinator
for Students with Disabilities
2700 College Road
Council Bluffs, IA 51503
(712) 325-6844 / equity@iwcc.edu

Inquiries and complaints may also be directed to:

Director of the Office for Civil Rights
U.S. Department of Education
Citigroup Center
500 W. Madison, Suite 1475
Chicago, IL 60661
phone (312) 730-1560 fax (312) 730-1576

ACADEMIC CALENDAR

The Iowa Western Community College Board of Trustees approves the Academic Calendar, which is available online at www.iwcc.edu and in Reiver Online Campus (ROC), the college's online student portal. Dates on the Academic Calendar are subject to change.

From the President of the College

I am pleased that you have selected Iowa Western, or are considering Iowa Western, as the post-secondary institution to help you achieve your goals. This catalog represents the services and programs that we believe can help you. You will find that all of us here are interested in helping you as you pursue your goals.

The people of Iowa Western Community College can best be described as caring and committed. We take an interest in each student and we are committed to providing learning opportunities that challenge you to your best level of achievement.

Our values and beliefs focus Iowa Western on the goal of being the finest institution of our kind and size in America, an institution whose faculty and staff truly care about students and their dreams, an institution committed enough to act with passion, an institution known for its quality education which challenges students to outstanding accomplishment and which values excellence and excellent accomplishment.

We believe that you will find your learning experience here at Iowa Western to be the best educational experience of your life.



Dr. Dan Kinney
President



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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 an Academic Quality Improvement Program (AQIP) institution by the Higher Learning Commission of the North Central Association of Colleges and Universities. Individuals should direct their questions, comments or concerns to The Higher Learning Commission, 30 North LaSalle Street, Suite 2400, Chicago, IL 60602, (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.

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, pregnancy, marital status, veteran status, AIDS/HIV status, citizenship, or medical condition, as those terms are defined under applicable laws, in its educational programs, activities, or employment practices.

Questions or complaints? Contact Title IX and Equal Opportunity Coordinator, Kim Henry, or ADA Coordinator, Samantha Larson, equity@iwcc.edu, 712-325-3200, or the Director of the Office for Civil Rights, U.S. Department of Education, Citigroup Center, 500 W. Madison, Suite 1475, Chicago, IL 60661, (312)-730-1560, OCR.Chicago@ed.gov. More information at <https://www.iwcc.edu/about/statement.asp>.

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 and Student Success.

Title IX — Sex and Gender Discrimination

Iowa Western Community College will not discriminate on the basis of the sex or gender of a person in its education programs or the activities it operates; further, the College will not discriminate on the basis of a person's sex or gender in regard to its admissions policies or in the employment of personnel. For more information or to file a complaint, contact the Title IX Coordinator.

Sexual Misconduct: Sexual Assault and Sexual Harassment Policy

Iowa Western Community College does not discriminate on the basis of sex or gender, as required by Title IX of the Educational Amendments of 1972. Iowa Western Community College is committed to having a positive learning and working environment for its students and employees and will not tolerate sexual or gender-based discrimination, which includes sexual harassment and sexual violence. Sexual and gender discrimination is also referred to as sexual misconduct. It is the policy of Iowa Western Community College to comply with Iowa Code Chapters 708 and 709 of the Title XVI Criminal Laws and Procedures. Inquiries regarding sexual and gender-based discrimination can be directed to Iowa Western's Title IX Coordinator or to the U.S. Office of Civil Rights. Please refer to the Student Handbook for the complete policies and procedures regarding Sexual Misconduct reporting.

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 and Student Success 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 and Student Success or by accessing the report on ROC and the College's website at www.iwcc.edu.

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

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. There is no application fee.

High School Transcript. Unless students have completed more than 30 semester hours at a regionally accredited college or university, they must submit official high school or high school equivalency transcripts. They 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.

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, need to 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 (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 as recognized by the United States Visa Waiver Program.

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 1-20 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 his or her 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 his or her 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 his or her 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 his or her 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 his or her 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.

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.

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 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 instructor, as well as the appropriate Academic Division Dean and the Dean of Enrollment Services. 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 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 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 are 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, 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. All other student enrollment documents are destroyed three years after the student's last semester of enrollment at the college.

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 clue 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 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
- major field of study
- participation in officially recognized activities
- athletic team members' weight and height
- dates of attendance
- 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.....	\$169.00 per credit hour
Non-Iowa Resident.....	\$174.00 per credit hour
International Student.....	\$174.00 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.

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 eCashier, or a combination of these options. Payment in full can be made online through eCashier, over the phone with a debit card or credit card, by mail with a check, or by going to the Cashier's window 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.

e-Cashier Automatic Payment Plan

Iowa Western Community College partners with a company called Nelnet to offer students the e-Cashier Automatic Payment Plan to help them finance their education. The payment plan must be set up every semester by the payment deadline, and it is available under the following terms and conditions: the student must have a balance of \$200 or more; the payment plan must be used only for tuition, fees, books and supplies, campus housing, and meal plans; the student must enroll in the plan online and pay a \$25 fee; and the student must make all payment installments as scheduled. Specific dates for payment are posted online and are available at the Cashier's Window. The College reserves the right to administratively withdraw students who fail to meet the terms and conditions of the payment plan.

Reiver Card

Iowa Western Community College Partners with Bank Mobile Disbursements to offer students college refund options with two choices for financial aid and tuition refund delivery: electronic deposit to another bank account or electronic deposit to a Bank Mobile Vibe account. All Iowa Western Community College students, except high school students, who are enrolled in 6 or more credits, will receive a Refund Selection Kit during their first semester of enrollment. This kit contains a ReiverCard which can serve as a school ID as well as a personal code for making the student's refund preference selection. Once it arrives, the student will need to visit www.ReiverCard.com to select a refund preference. If the student chooses to select a direct deposit to another bank account, the refund will be processed by Bank Mobile Disbursements to the bank account specified. If the student chooses to open a Vibe account, the ReiverCard will be activated as a functioning Debit MasterCard® and linked to the student's Vibe account.

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 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 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 his or her 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 his or her 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, P and Q are considered completed for purposes of financial aid. Grades of F, I, 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 his or her 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 his or her 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 he or she has 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 his or her 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 opportuni-

ties 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 he or she failed, which is defined as earning a grade of a "F." 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" and "Q" 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 his or her 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, he or she may pursue additional academic credentials. The maximum timeframe standard still applies. Once a student reaches the maximum timeframe for his or her declared program of study, he or she 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 their status once Satisfactory Academic Progress is calculated after the end of each term. Notice will be sent via the U.S. Postal Service and notice will be sent to his or her official Iowa Western email.

Reinstatement of Good Standing

A student can return to Good Standing by raising his or her cumulative grade point average to 2.00 or higher and by raising his or her cumulative credit completion rate to 67% or higher, as long as he or she has not reached or exceeded the maximum timeframe for his or her 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 his or her pace of completion to 67% at his or her 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. 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 his or her official Iowa Western email. If approved, the student will have his or her financial aid reinstated; however, he or she will remain on Probation for the next term.

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

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 his or her 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, or Associate of Applied Science degrees. Students enrolling in Career and Technical programs are required to consult with the program chair to develop their 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 Enrollment Advisor in the Advising and Academic Success department.

Academic Classification

A student's academic classification is determined by the number of semester credit hours of academic credit he or she has 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

Attendance will be taken and recorded for every class meeting. Instructors are responsible for developing and implementing their own system and forms for recording class attendance that can be checked and verified by sources from both on and off campus. These include, but are not limited to, Iowa Western Community College Student Services Personnel, the Veterans Administration, federal, state, county, private human services agencies, and scholarship granting organizations. This policy is subject to the limitations as outlines in The Family Educational Rights and Privacy Act.

Academic Standards

It is the policy of Iowa Western Community College to promote academic progress for each individual student. To encourage each student to strive for the highest academic achievement of which he or she is capable, the following policy has been adopted:

A student who has attempted six or more semester hours of academic credit is required to maintain a cumulative minimum grade point average of 2.0. A student who fails to maintain this average will not be in "Good Academic Standing" at the College for the following semester. If the grade point is not at least 2.0 at the conclusion of the following semester, the student may be placed on academic suspension. A student who earns at least 2.0 GPA for an academic semester may avoid suspension even though he or she is not in "Good Academic Standing" until the cumulative GPA reaches 2.0.

A student who is academically suspended from the College may not reenroll in Iowa Western Community College unless he or she has written permission from the Vice President of Academic Affairs.

This policy is independent of Financial Aid Satisfactory Academic Progress Criteria.

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.

Independent Study

Students may enroll in an independent study course for no more than three credits after completing six credit hours in the subject area. A maximum of six credits of independent study may be used to meet degree requirements. An interested student must meet with the instructor and submit a detailed description of the approved project at least one week prior to registering for the course. This type of course involves a specific educational project in a special interest area. The student works under the direction of a faculty member in the appropriate department. Final approval is required of the appropriate Division Dean and the Vice President of Academic Affairs.

Audit Course Study

Audit enrollment in courses provides students the opportunity to attend class as a noncredit participant.

A student may enroll in any course on an audit basis. Audit enrollments require that the student and instructor agree about what portions of the course the student plans to audit and the requirements the instructor has about the student's class attendance and participation in class work. If the student fulfills the agreement for the audit, he or she 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 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. Registration procedures and fees are the same as for regular class enrollment.

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 their 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 their 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 their experience, depending on the agreement between employer and student. The internship provides the opportunity for the student to enhance his or her education by gaining actual work experience in his or her 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 their 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 DAN TES). All test scores must be sent directly from the testing agency to the College. Credit will be transcribed only after the term of initial enrollment has begun. 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. 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 ap-

proval to take a departmental examination, a student should be prepared to show evidence that he or she has 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. Credit will be transcribed only after the term of initial enrollment has begun. 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.

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.

Iowa Communications Network (ICN)

Iowa Western Community College offers courses over the ICN, an interactive technology that allows college credit classes to be televised across our district. The fiber optics sites include the Council Bluffs campus, Clarinda Center, Cass County Center (Atlantic), Shelby County Center (Harlan), and high schools throughout Southwest Iowa. The ICN provides opportunities to enroll in college credit classes without having to travel great distances.

Online Courses

Iowa Western Community College offers a variety of courses and degrees delivered entirely online. Online courses allow Iowa Western Community College to deliver convenient education to citizens locally, regionally and around the world. Iowa Western Community College delivers online classes through Reiver Online Campus (ROC), Iowa Western Community College's student portal. Online courses give students the utmost in flexibility and convenience. More information regarding online courses offered at Iowa Western Community College is available online.

Hybrid Courses

Iowa Western Community College offers hybrid courses in recognition of ongoing changes in education and technology. Students in hybrid courses still spend time in the classroom; however, a portion of the required classroom time is supplanted with self-guided learning activities, usually through the use of technology, including, but not limited to, online instruction. These courses provide the flexibility of self-guided learning without losing the personal connection of face-to-face instruction.

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 their service and the course curriculum but also to help students consider the impact their service has on their 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 their 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 their 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 his or her 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 their 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 their 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 their 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 their 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 their program of study will be marked as graduates on their 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 their official transcript, and they will be notified of their respective award.

Commencement

Iowa Western Community College conducts three commencement ceremonies each year. At the Council Bluffs campus, winter commencement is held in December, spring commencement is held in May, and summer commencement is held in late July or early August.

Although voluntary, participation in commencement is strongly encouraged. In order to participate, students must submit an application for graduation and indicate on that application their intention to participate, or otherwise notify the Records and Registration Office of their intention to participate. 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 four weeks of the conclusion of the term in which students graduate, after final grades are recorded and the Registrar has verified that all requirements for graduation have been satisfied. 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 Arts (in effect Fall 2018)

Candidates for this degree must:

- 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.
- Attain a minimum cumulative grade point average of 2.0.
- Select a major or program that will be recognized on the student's official transcript.
- Complete the following minimum requirements:

Communications 9 credits

Courses must include Composition I, Composition II, and one Speech course, either Public Speaking or Interpersonal Communications.

Social Sciences 9 credits

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

Science and Mathematics 10 credits

Courses must include a minimum of four credit hours of laboratory science and a minimum of three 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 121-227.

Humanities 9 credits

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

Distributed Requirement 3 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*

Course must be selected from the following:
ANT 105, ECE 287, EDU 245, FLS 141, FLS 142, FLS 241, FLS 242, GEO 121, HIS 253, HIS 257, LIT 130, LIT 134, LIT 190, MGT 195, MKT 190, MUS 204, POL 121, REL 101, SOC 198, SOC 200, SOC 210, and SPC 120.

*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.

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 Science (in effect Fall 2018)

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 major or program that will be recognized on the student's official transcript.
- D. Complete the following minimum requirements:

Communications **9 credits**

Courses must include Composition I, Composition II, and one Speech course, either Public Speaking or Interpersonal Communications.

Humanities and Social Sciences **9 credits**

Courses must be selected from Art, Cultural Studies, Film and 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 three 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 121-227.

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***

Course must be selected from the following:
ANT 105, ECE 287, EDU 245, FLS 141, FLS 142, FLS 241, FLS 242, GEO 121, HIS 253, HIS 257, LIT 130, LIT 134, LIT 190, MGT 195, MKT 190, MUS 204, POL 121, REL 101, SOC 198, SOC 200, SOC 210, and SPC 120.

*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.

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 2018)

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 major or program that will be recognized on the student's official transcript.
- D. Complete the following minimum requirements:

Communications **9 credits**

Courses must be selected from:
ENG 105, ENG 106, ENG 110, ENG 111, SPC 112, and SPC 122.

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 at least one mathematics course from MAT 102-227. Courses must be selected from Biology, Chemistry, Environmental Science, Mathematics, Physical Science, and Physics.

Humanities **6 credits**

Courses must be selected from Art, Cultural Studies, Film and 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.

Diversity Requirement **3 credits***

Course must be selected from the following:
ANT 105, ECE 287, EDU 245, FLS 141, FLS 142, FLS 241, FLS 242, GEO 121, HIS 253, HIS 257, LIT 130, LIT 134, LIT 190, MGT 195, MKT 190, MUS 204, POL 121, REL 101, SOC 198, SOC 200, SOC 210, and SPC 120.

*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.

The Associate in General Studies degree allows students to combine a core of basic courses with a program that can be customized to their 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 their advisor for program planning assistance.

Associate of Applied Science (in effect Fall 2018)

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 major or program that will be recognized on the student's official transcript.
- D. Complete the following minimum requirements:

Communications **3 credits**
Course must be selected from ENG 105, ENG 110, or ENG 111.

Humanities and Social Sciences **3 credits**
Course must be selected from Art, Cultural Studies, Film and Theatre, Foreign Language, Humanities, Literature, General Music, Philosophy, Religion, Anthropology, Economics, Geography, History, Political Science, Psychology, and Sociology.

Mathematics **3 credits**
If mathematics is taught in the program core, another general elective must be selected.

Career/Diversity Requirement **3 credits***
Course must be selected from either MGT 195 Workplace Empowerment or MGT 900 Documentation and Evaluation of Experiential Learning.**

Program Specific Courses **credits vary**
Programs of study that lead to an 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.

*The Diversity Requirement does not increase the number of credits required for graduation; the course taken to fulfill the diversity requirement may also fulfill requirements in Humanities and Social Sciences, or, in very limited cases, in Program Specific Courses.

**In order to satisfy the Diversity Requirement, students who take MGT 900 Documentation and Evaluation of Experiential Learning must also take one of the following courses: ANT 105, ECE 287, EDU 245, FLS 141, FLS 142, FLS 241, FLS 242, GEO 121, HIS 253, HIS 257, LIT 130, LIT 134, LIT 190, MGT 195, MKT 190, MUS 204, POL 121, REL 101, SOC 198, SOC 200, SOC 210, and SPC 120.

Diploma (in effect Fall 2012)

Candidates for the diploma must:

- A. Complete at least 50% of the program 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 3 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 2012)

Candidates for the certificate must:

- A. Complete a minimum of 16 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.

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
 GEO 121 World Regional Geography
 HIS 253 American Indian History and Culture
 HIS 257 African American History
 POL 121 International Relations
 SOC 198 The Middle East
 SOC 200 Minority Group Relations
 SOC 210 Men, Women and Society

*Humanities

FLS 141 Elementary Spanish I
 FLS 142 Elementary Spanish II
 FLS 241 Intermediate Spanish I
 FLS 242 Intermediate Spanish II
 LIT 130 African American Literature
 LIT 134 Multicultural Literature
 LIT 190 Women Writers
 MUS 204 History of Rock and Roll
 REL 101 Survey of World Religions

General Electives

ECE 287 Exceptional Learner
 EDU 245 Exceptional Learner
 MGT 195 Workplace Empowerment
 MKT 190 International Marketing
 *SPC 120 Intercultural Communications

*Courses listed under Social Science and Humanities, as well as any other asterisked course, will also satisfy the Distributed requirement.

SERVICES FOR STUDENTS

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 their first semester, all students are assigned an academic advisor in their program of study. Student advisees are ultimately responsible for all aspects of their education, including course selection and awareness of their 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 their advisor and should seek their advisor's assistance in developing academic, social, and career goals. Students should always consult with their 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

Iowa Western Community College offers students a variety of services and resources that are designed to help them gather information, which in turn enables them to make informed decisions regarding major and ultimately 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. A student's assigned advisor will serve as an important resource when it comes to questions about careers but students are also encouraged to take it upon themselves to research opportunities through online resources such as the Iowa Western Community College Career Planning web pages and Career Coach, both of which are accessible online. Students who have questions should meet with their assigned academic advisor or meet with an Enrollment Advisor in the Advising and Academic Success department for more information.

Transfer Planning

Iowa Western Community College 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 their academic careers to help make informed decisions regarding their major and the institution to which they ultimately plan to transfer. Students who have questions should meet with their assigned academic advisor or meet with an Enrollment Advisor in the Advising and Academic Success department for more information.

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 and assessment to help students cope with stressors that are affecting their academic, career, or personal goals. Students are urged to seek help for stressors including homesickness, depression, anxiety, relationships, and other college struggles. Mental health support services are offered for free through the Office of Student Support and Outreach.

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 Disability Services prior to receiving accommodations. Therefore, students are strongly encouraged to provide documentation of their disability and make arrangements early in their semester registration process in order to receive timely services. All disability documentation files are kept strictly confidential. For more information, contact the Disability 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 is to support students in continuing their 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 provides academic advising, career advising, access to Math/Science/Writing Specialists, peer mentoring, transfer assistance, financial aid assistance, financial literacy advising, computer training, TRiO Minority Leadership Group, academic improvement workshops, cultural and educational activities, volunteer opportunities, and personal development workshops. For more information, contact the Director of TRiO.

Tutoring

The Academic Support Center (ASC) is located on the second floor of the Student Center and offers free academic assistance in a variety of "core" subjects, specializing in assistance for math and writing classes. ASC Peer Tutors are academically successful students trained to assist other students with many of the general requirement courses necessary for most associate's degrees. Peer tutors maintain regular hours and are available on a walk-in basis. Group tutoring is also available, but must be scheduled in advance. Iowa Western also offers free 24/7 online tutoring through ROC. For more information about the free tutoring available to all Iowa Western Community College students, contact the Academic Support 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. Reiver Gear, supplies, food items, and student-priced software are also available in the College Store.

Cyber Library

Iowa Western Community College offers a technology-based resource center that provides 24/7 access to full-text journal articles, books, and other resources through an electronic database. Students, faculty, and staff are able to search all available learning resources with one click. The Cyber Library, located on the Council Bluffs campus, is a learner-centered environment that has laptops available for students to check-out, individual study rooms, library research assistance, free 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 office of Residence 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 office of Residence Life.

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, sport shooting, track and field, volleyball
- Men: baseball, basketball, bowling, cross country, football, golf, soccer, sport shooting, track and field, wrestling

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 Sapphires Dance Team. The team members are selected through tryouts. For more information, contact the Spirit Coordinator through the Athletic Office.

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.

Iowa Western Programs (2018-2019)

<i>Program Name:</i>	<i>Degree Type:</i>	<i>Program Name:</i>	<i>Degree Type:</i>
Accounting: Para-Accounting	A.A.S.	Health and Recreation	A.A.
Accounting Technician	DIP	Human Services: Addictive Studies	A.A.
Agribusiness Technology	A.A.S.	Human Services: Generalist	A.A.
Agribusiness Technology: Agronomy Operations Certificate	CER	Human Services: Pre-Social Work Transfer	A.A.
Agribusiness Technology: Agronomy Sales & Service	DIP	Human Services: Youth Worker	A.A.
Agriculture Transfer	A.S.	HVAC/R Maintenance Certificate	CER
Applied Business: Individualized Technical Program	A.A.S.	HVAC/R Technology Diploma	DIP
Art	A.A.	Industrial Engineering Technology	A.A.S.
Audio Engineering	A.A.S.	Industrial Maintenance Technician	DIP
Automotive Maintenance and Light Repair	DIP	Industrial Technology Certificate	CER
Automotive Technology	A.A.S.	Literature	A.A.
Aviation Maintenance Technology	A.A.S.	Management & Human Resources	A.A.S.
Aviation Maintenance Tech: Airframe Certificate	CER	Management & Human Resources Certificate	CER
Aviation Maintenance Tech: Powerplant Certificate	CER	Management & Human Resources Diploma	DIP
Biological Sciences	A.S.	Marketing	A.A.S.
Business Administration	A.A.	Marketing Management	A.A.
Chemistry	A.S.	Mathematics	A.S.
CNC Machining Diploma	DIP	Media Studies: Media Production	A.A.S.
Communication Studies	A.A.	Media Studies: Radio	A.A.S.
Computers: Application & Web Programming	A.A.S.	Media Studies: Radio Performance & Production	A.A.S.
Computers: Computer Science	A.A.	Media Studies: Radio Promotions, Sales & Web	A.A.S.
Computers: Cyber Security	A.A.	Media Studies: Radio/Television/Video	A.A.
Computers: Desktop Support Certificate	CER	Media Studies: Sports Media Technology	A.A.S.
Computers: Management Information Systems	A.A.	Media Studies: Television/Video	A.A.S.
Computers: Network and System Administration	A.A.S.	Medical Assistant	DIP
Computers: Programming Certificate	CER	Medical/Clinical Assistant Certificate	CER
Computers: System Administration Certificate	CER	Microbiology Transfer	A.S.
Construction Technology: Residential	DIP	Music	A.A.
Construction Technology	A.A.S.	Music: Music Technology	A.A.
Construction Technology: Carpentry Certificate	CER	Nursing: Advanced Nursing Assistant Certificate	CER
Criminal Justice	A.A.	Nursing: Associate Degree Nursing	A.A.S.
Culinary Arts: Baking and Pastry Art	A.A.S.	Nursing: Practical Nursing	DIP
Culinary Arts: Culinarian	A.A.S.	Photonics System Diploma	DIP
Culinary Arts: Food Service	DIP	Photonics System Technician	A.A.S.
Culinary Arts: Food Technician Certificate	CER	Physical Therapist Assistant	A.A.S.
Culinary Arts: Restaurant & Hospitality Management	A.A.S.	Pre-Engineering	A.S.
Dental Assistant	DIP	Pre-Law	A.A.
Dental Hygiene	A.A.S.	Pre-Medicine	A.S.
Design Technology	A.A.S.	Pre-Occupational Therapy	A.S.
Diesel Mechanics	DIP	Pre-Pharmacy	A.S.
Diesel Technology	A.A.S.	Pre-Physical Therapy	A.S.
Early Childhood Education	A.A.	Pre-Physician Assistant	A.S.
Early Childhood Studies	A.A.S.	Pre-Respiratory Therapy	A.S.
Early Childhood Studies Diploma	DIP	Psychology	A.A.
Early Childhood: Administration Certificate	CER	Robotics/Automated Systems Engineering Technology	A.A.S.
Early Childhood: Child Development Certificate	CER	Robotics/Automated Systems Technician	DIP
Education: Grades K - 12	A.A.	Social Media Certificate	CER
Electrical Technology Certificate	CER	Sociology	A.A.
Electrical Technology Diploma	DIP	Spanish	A.A.
Electronic Engineering Technology	A.A.S.	Sterile Processing Certificate	CER
Electronic Technology Diploma	DIP	Surgical Technology	A.A.S.
Exercise Science	A.S.	Sustainable Energy Technology	A.A.S.
Fire Science Technology	A.A.	Sustainable Energy Technology Certificate	CER
General Studies AA	A.A.	Theatre	A.A.
General Studies AGS	A.G.S.	Veterinary Technology	A.A.S.
General Studies AS	A.S.	Welding Certificate	CER
Graphic Communications	A.A.S.		
Graphic Communications Diploma	DIP		

Accounting Technician

The 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
BCA 212	Introduction to Computer Business Applications OR		
CSC 110	Introduction to Computers		3.0
BUS 102	Introduction to Business		3.0
MAT 711	Business and Financial Mathematics		3.0
ENG 105	Composition I		3.0
	Credits		15.0

Second Semester

ACC 122	Principles of Accounting II		3.0
ACC 161	Payroll Accounting		3.0
ACC 311	Computer Accounting		3.0
FIN 121	Personal Finance		3.0
SPC 122	Interpersonal Communication OR		
SPC 112	Public Speaking		3.0
BCA 142	Spreadsheets OR		
BCA 152	Comprehensive Spreadsheets		3.0
	Credits		18.0

Summer

MGT 195	Workplace Empowerment		3.0
	Credits		3.0

36.0 Total Semester Hours Required

**May substitute with MAT 121-227.

Accounting: Para-Accounting

The 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
CSC 110	Introduction to Computers OR		
BCA 212	Introduction to Computer Business Applications		3.0
BUS 102	Introduction to Business		3.0
MAT 711	Business and Financial Mathematics **		3.0
ENG 105	Composition I		3.0
	Credits		15.0

Second Semester

ACC 122	Principles of Accounting II		3.0
ACC 161	Payroll Accounting		3.0
ACC 311	Computer Accounting		3.0
FIN 121	Personal Finance		3.0
SPC 122	Interpersonal Communication OR		
SPC 112	Public Speaking		3.0
BCA 142	Spreadsheets OR		
BCA 152	Comprehensive Spreadsheets		3.0
	Credits		18.0

Summer

MGT 195	Workplace Empowerment		3.0
	Credits		3.0

Third Semester

ACC 221	Cost Accounting		3.0
ACC 261	Income Tax Accounting		3.0
PHI 142	Ethics in Business OR		
PHI 105	Introduction to Ethics		3.0
ACC 932	Internship		2.0
BUS 121	Business Communications		3.0
	General Elective		3.0
	Credits		17.0

Fourth Semester

ACC 211	Intermediate Accounting I		3.0
BUS 185	Business Law I		3.0
ACC 251	Governmental and Nonprofit Accounting		3.0
ECN 120	Principles of Macroeconomics OR		
ECN 130	Principles of Microeconomics		3.0
ACC 932	Internship		2.0
	General Elective		3.0
	Credits		17.0

70.0 Total Semester Hours Required

**May substitute with MAT 121-227.

Agribusiness Technology

The Agribusiness Technology program of study provides students with the opportunity to develop skills, abilities and an understanding of the technical aspects of agriculture and agribusiness that allow preparation for a variety of career paths. Careers in agribusiness, farm management, production agriculture, agriculture research as well as domestic and international agriculture and ag-related sales, service, and supply industries can be pursued. Students are provided with classroom instruction, lab and field experience opportunities. 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

CSC 110	Introduction to Computers OR		
BCA 212	Introduction to Computer Business Applications		3.0
AGA 181	Introduction to Crop Science		3.0
AGS 113	Survey of the Animal Industry		3.0
AGP 333	Precision Farming Systems		3.0
AGC 215	Career Seminar		1.0
MAT 711	Business and Financial Mathematics *		3.0
	Credits		16.0

Second Semester

AGA 280	Crop Development, Production, and Management		3.0
AGP 457	Agronomic Applications of Site Specific Management		3.0
AGB 235	Introduction to Agriculture Markets		3.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
AGS 226	Beef Cattle Science		3.0
	Social Science Elective		3.0
	Credits		18.0

Summer

AGB 804	Agricultural Internship I		3.0
AGA 376	Integrated Pest Management		3.0
	Credits		6.0

Third Semester

MGT 195	Workplace Empowerment		3.0
AGB 437	Commodity Marketing		3.0
AGA 182	Introduction to Soil Science		3.0
AGB 330	Farm Business Management		3.0
	Social Science/Humanities Elective		3.0
AGA 284	Pesticide Application Certification		3.0
	Credits		18.0

Fourth Semester

AGB 211	Agricultural Law, Taxation and Records		3.0
AGB 331	Entrepreneurship in Agriculture		3.0
AGB 336	Agricultural Selling		3.0
AGA 165	Agricultural Fertilizers and Chemicals		3.0
AGB 814	Agricultural Internship II		4.0
	Credits		16.0

74.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Agribusiness Technology: Agronomy Operations Certificate

The Agribusiness Technology: Agronomy Operations Certificate 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
AGP 333	Precision Farming Systems		3.0
AGA 284	Pesticide Application Certification		3.0
AGC 215	Career Seminar		1.0
	Credits		10.0

Second Semester

AGA 280	Crop Development, Production, and Management		3.0
	Credits		3.0

Summer

AGA 376	Integrated Pest Management		3.0
	Credits		3.0

16.0 Total Semester Hours Required

Agribusiness Technology: Agronomy Sales & Service

The Agribusiness Technology: Agronomy Sales & Service 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, agronomy operations, precision agriculture, and agronomy sales can be pursued. Student are provided classroom instruction, lab, and field experience. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

AGA 181	Introduction to Crop Science		3.0
AGP 333	Precision Farming Systems		3.0
AGA 284	Pesticide Application Certification		3.0
AGC 215	Career Seminar		1.0
	Communications Requirement (ENG 105 or 110)		3.0
	Credits		13.0

Second Semester

AGA 280	Crop Development, Production, and Management		3.0
AGP 457	Agronomic Applications of Site Specific Management		3.0
AGB 336	Agricultural Selling		3.0
AGA 165	Agricultural Fertilizers and Chemicals		3.0
	Credits		12.0

Summer

AGA 376	Integrated Pest Management		3.0
	Credits		3.0

28.0 Total Semester Hours Required

Agriculture Transfer

The Agriculture Transfer program of study provides students with course work commonly found in the first two years of a university agriculture science-emphasis baccalaureate degree. Graduates of this program are awarded an Associate of Science (A.S.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
BIO 112	General Biology I		4.0
AGA 181	*Introduction to Crop Science		3.0
AGS 113	*Survey of the Animal Industry		3.0
ECN 120	Principles of Macroeconomics		3.0
	Credits		16.0

Second Semester

ENG 106	Composition II		3.0
BIO 113	General Biology II		4.0
AGA 280	*Crop Development, Production, and Management		3.0
	*Agriculture Elective **		3.0
MAT 121	College Algebra		4.0
	Credits		17.0

Third Semester

CHM 166	General Chemistry I		5.0
AGB 330	*Farm Business Management		3.0
	*Agriculture Elective **		3.0
AGA 182	*Introduction to Soil Science		3.0
	Social Science/Humanities Elective		3.0
	Credits		17.0

Fourth Semester

BIO 125	*Plant Biology OR		
ENV 111	*Environmental Science		4.0
SPC 112	Public Speaking		3.0
	Social Science/Humanities Elective		3.0
	Distributed Requirement		2.0
	Credits		12.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

62.0 Total Semester Hours Required

****Agriculture Electives must be selected from the following:**

- AGB 235 Introduction to Agriculture Markets 3
- AGB 437 Commodity Marketing 3
- AGS 226 Beef Cattle Science 3
- AGA 284 Pesticide Application Certification 3

Applied Business: Individualized Technical Program

The Applied Business Individualized Technical Program Option program of study provides students an opportunity to adapt an existing college program of study to their individual needs and career goals. The intent of this option is to craft a program of study that meets a student's specific technical career goal. While this degree may be recognized by four-year colleges, it is not the intent of Iowa Western Community College to imply transferability. 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

	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Technical Area of Concentration	12.0	15.0
	Credits	15.0	18.0

Second Semester

	A.A.S. Mathematics Requirement (MAT 102 or higher)		3.0
	Technical Area of Concentration	12.0	15.0
	Credits	15.0	18.0

Third Semester

	Social Science/Humanities Elective		3.0
	Technical Area of Concentration	12.0	15.0
	Credits	15.0	18.0

Fourth Semester

MGT 195	Workplace Empowerment		3.0
	Technical Area of Concentration	12.0	15.0
	Credits	15.0	18.0

64.0 Total Semester Hours Required

In addition, a student must declare this major prior to completing 30 semester hours of coursework at Iowa Western Community College. The specific individualized program of study will be designed with the guidance of the applied business chair and the registrar, and will be approved by the appropriate division dean prior to the declaration of this major. It is required that a coherent program of study consisting of related technical courses, as well as related general education courses, be developed and followed to degree completion.

Art

The Art program of study prepares students to transfer to four-year schools and/or begin a professional art practice. The program produces graduates who (1) are self-directed learners, critical thinkers, problem-solvers and effective medium/community communicators (2) have demonstrated competence in the process of creating visual art forms (3) have demonstrated a practical as well as a conceptual knowledge of the visual arts (4) have knowledge of, participated in, and comprehend their responsibility to the art community (5) are prepared to pursue advanced degree studies in the visual arts. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ART 101	*Art Appreciation		3.0
ART 120	*2-D Design		3.0
ENG 105	Composition I		3.0
ART 125	*Digital Media		3.0
MAT 157	Statistics		4.0
	Credits		16.0

Second Semester

ENG 106	Composition II		3.0
	Social Science Elective		3.0
ART 123	*3-D Design		3.0
ART 143	*Painting		3.0
ART 133	*Drawing		3.0
	Credits		15.0

Third Semester

	Mathematics/Science Elective		3.0
	Social Science Elective		3.0
ART 151	*Design I		3.0
ART 184	*Photography		3.0
ART 196	*Studio Practices I		3.0
	Credits		15.0

Fourth Semester

ART 193	*Studio Practices II		3.0
SPC 112	Public Speaking		3.0
	General Elective		1.0
	Lab Science Requirement		4.0
	Social Science Elective		3.0
	Credits		14.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

60.0 Total Semester Hours Required

Audio Engineering

The 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 their own studio as recording and mixing engineers, or apply their 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

MUS102	Music Fundamentals		3.0
MUS305	Introduction to Audio		3.0
MUS306	Digital Audio Production I		3.0
MUS320	Technical Music Practicum I		1.0
ENG110	Writing For The Workplace OR		
ENG105	Composition I		3.0
MAT711	Business and Financial Mathematics		3.0
	Credits		16.0

Second Semester

MUS307	Digital Audio Production II		3.0
MUS325	Mix Listening I		3.0
MUS328	Virtual Instrument and Processing Plug-Ins		3.0
MUS310	Recording Project I		1.0
MUS321	Technical Music Practicum II		1.0
MKT110	Principles of Marketing		3.0
	Credits		14.0

Third Semester

MUS311	Recording Project II		1.0
MUS326	Mix Listening II		3.0
MUS330	Audio Mixing I		3.0
MUS333	Popular Music Analysis		3.0
MUS322	Technical Music Practicum III		1.0
BCA155	Introduction to Web Design		3.0
BUS130	Introduction to Entrepreneurship		3.0
	Credits		17.0

Fourth Semester

MUS312	Recording Project III		1.0
MUS331	Audio Mixing II		3.0
MUS335	Audio Mastering		3.0
MUS323	Technical Music Practicum IV		1.0
MUS935	Technical Music Internship		3.0
MGT195	Workplace Empowerment		3.0
	Social Science Elective		3.0
	Credits		17.0

64.0 Total Semester Hours Required

Automotive Maintenance and Light Repair

The Automotive Maintenance and Light Repair program of study is a one-year program admitting students in the spring and fall semesters. Students in this program can expect to find greater than average opportunities for employment in all types of automotive service facilities. A combination of theory classes, hands-on training in the lab and shop, and industry relevant on-line training prepare students to become entry-level vehicle maintenance and light repair technicians. Graduates of this program are awarded a diploma. The Iowa Western Automotive Technology program is nationally Accredited by N.A.T.E.F. (National Automotive Technicians Education Foundation) and A.S.E. (Automotive Service Excellence), 13505 Dulles Technology Dr., Suite 2, Herndon, VA 20171-3421. The program is locally endorsed by the Lake Manawa Auto Dealers Association.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

AUT115	Automotive Shop Safety		1.0
AUT114	Shop Fundamentals and Minor Service		4.0
AUT615	Automotive Electricity/Electronics		4.0
AUT404	Automotive Suspension and Steering		4.0
AUT918	Automotive Lab I		1.5
MAT743	Technical Math *		3.0
	Credits		17.5

Second Semester

AUT652	Advanced Automotive Electricity		3.0
AUT155	Automotive Engine Design and Systems		2.0
AUT919	Automotive Lab II		1.5
AUT524	Automotive Brake Systems and Service		4.0
AUT222	Basic Automotive Drive Lines		2.0
AUT878	Automotive Lab III		1.5
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Credits		17.0

Summer

AUT190	Hybrid Fundamentals		2.0
AUT704	Automotive Heating and Air Conditioning		4.0
AUT920	Automotive Lab IV		1.5
	Credits		7.5

42.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Automotive Technology

The 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. Instruction includes a wide variety of theory classes and up-to-date practical experience as well as on-line training comparable to many manufacturer training programs. Graduates of this program are awarded an Associate in Applied Science (A.A.S.) degree. The Iowa Western Automotive Technology program is nationally Accredited by the National Automotive Technicians Education Foundation (NATEF) and Automotive Service Excellence (ASE), 13505 Dulles Technology Dr., Suite 2, Herndon, VA 20171-3421. The program is locally endorsed by the Lake Manawa Auto Dealers Association

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

AUT 115	Automotive Shop Safety	1.0
AUT 114	Shop Fundamentals and Minor Service	4.0
AUT 615	Automotive Electricity/Electronics	4.0
AUT 404	Automotive Suspension and Steering	4.0
AUT 918	Automotive Lab I	1.5
MAT 743	*Technical Math *	3.0
	Credits	17.5

Second Semester

AUT 652	Advanced Automotive Electricity	3.0
AUT 155	Automotive Engine Design and Systems	2.0
AUT 919	Automotive Lab II	1.5
AUT 524	Automotive Brake Systems and Service	4.0
AUT 222	Basic Automotive Drive Lines	2.0
AUT 878	Automotive Lab III	1.5
	A.A.S. Communications Requirement (ENG 105 or 110)	3.0
	Credits	17.0

Summer

AUT 190	Hybrid Fundamentals	2.0
AUT 704	Automotive Heating and Air Conditioning	4.0
AUT 920	Automotive Lab IV	1.5
	Credits	7.5

Third Semester

AUT 842	Automotive Computerized Engine Controls	4.0
AUT 852	Automotive Engine Performance Diagnosis	4.0
AUT 921	Automotive Lab V OR	
AUT 901	Automotive Internship I	4.0
	Social Science/Humanities Elective	3.0
	Credits	15.0

Fourth Semester

AUT 163	Automotive Engine Repair	3.0
AUT 532	Advanced Brakes and Alignment	3.0
AUT 200	Automotive Automatic Transmissions/Transaxles	3.0
AUT 303	Automotive Manual Drive Train and Axles	3.0
AUT 922	Automotive Lab VI OR	
AUT 903	Automotive Internship II	4.0
MGT 195	Workplace Empowerment	3.0
	Credits	19.0

Summer

AUT 653	Advanced Automotive Systems	4.0
AUT 923	Automotive Lab VII OR	
AUT 904	Automotive Internship III	2.0
	Credits	6.0

82.0 Total Semester Hours Required

*May substitute MAT 102 or higher.

Aviation Maintenance Tech: Airframe Certificate

The Aviation Maintenance Technology Airframe Certificate 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

AVM 181	Aviation Airframe I	7.5
AVM 182	Aviation Airframe II	7.5
AVM 185	Aviation Airframe III	7.0
AVM 186	Aviation Airframe IV	7.0
	Credits	29.0

29.0 Total Semester Hours Required

Aviation Maintenance Tech: Powerplant Certificate

The Aviation Maintenance Technology Powerplant Certificate 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

AVM 191	Aviation Powerplant I		7.0
AVM 192	Aviation Powerplant II		7.5
AVM 193	Aviation Powerplant III		8.5
AVM 194	Aviation Powerplant IV		7.5
	Credits		30.5

30.5 Total Semester Hours Required

Aviation Maintenance Technology

The 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
AVM 140	Aviation Mechanics General II		7.0
MAT 743	Technical Math		3.0
	Credits		17.0

Second Semester

AVM 181	Aviation Airframe I		7.5
AVM 182	Aviation Airframe II		7.5
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Credits		18.0

Summer

AVM 185	Aviation Airframe III		7.0
	Credits		7.0

Third Semester

AVM 186	Aviation Airframe IV		7.0
AVM 191	Aviation Powerplant I		7.0
	Social Science/Humanities Elective		3.0
	Credits		17.0

Fourth Semester

AVM 192	Aviation Powerplant II		7.5
AVM 193	Aviation Powerplant III		8.5
MGT 195	Workplace Empowerment		3.0
	Credits		19.0

Summer

AVM 194	Aviation Powerplant IV		7.5
	Credits		7.5

85.5 Total Semester Hours Required

Biological Sciences

The Biological Sciences 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.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
BIO 112	*General Biology I		4.0
CHM 166	General Chemistry I		5.0
MAT 121	College Algebra		4.0
	Social Science Elective		3.0
	Credits		19.0

Second Semester

ENG 106	Composition II		3.0
BIO 113	*General Biology II		4.0
CHM 176	General Chemistry II		5.0
	Humanities Elective		3.0
	Credits		15.0

Third Semester

SPC 112	Public Speaking		3.0
BIO 168	Human Anatomy and Physiology I OR		
ENV 111	Environmental Science		4.0
	Social Science/Humanities Elective		3.0
	General Elective		3.0
	Credits		13.0

Fourth Semester

BIO 173	Human Anatomy and Physiology II OR		
BIO 186	Microbiology		4.0
	Social Science Elective		3.0
	Social Science/Humanities Electives		6.0
	Credits		13.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

60.0 Total Semester Hours Required

Business Administration

Business Administration is a program of study that enables graduates to enter four-year institutions with junior standing in the College of Business Administration. This program consists of a series of both required and elective courses that meet the Pre-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
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
ACC 121	*Principles of Accounting I		3.0
BUS 102	*Introduction to Business		3.0
CSC 110	Introduction to Computers		3.0
	Credits	15.0	16.0

Second Semester

ENG 106	Composition II		3.0
MAT 157	Statistics		4.0
ACC 122	Principles of Accounting II		3.0
BUS 185	*Business Law I		3.0
	Humanities Elective		3.0
	Credits		16.0

Third Semester

SPC 112	Public Speaking		3.0
ECN 120	*Principles of Macroeconomics		3.0
PHI 142	Ethics in Business		3.0
	Distributed Requirement		3.0
	Lab Science Requirement		4.0
	Credits		16.0

Fourth Semester

ECN 130	*Principles of Microeconomics		3.0
	Humanities Elective		3.0
	*Business Elective **		3.0
	Social Science Elective		3.0
	General Electives		6.0
	Credits		18.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

****Business Elective must be selected from the following:**

ACC 122 Principles of Accounting II 3
 ACC 311 Computer Accounting 3
 BUS 121 Business Communications (Business) 3
 BUS 130 Introduction to Entrepreneurship 3
 BUS 186 Business Law II 3
 FIN 121 Personal Finance 3
 MGT 101 Principles of Management 3
 MGT 130 Principles of Supervision 3
 MGT 170 Human Resource Management 3
 MKT 110 Principles of Marketing 3

Chemistry

The Chemistry 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
CHM 166	*General Chemistry I		5.0
MAT 211	*Calculus I		5.0
	Social Science Elective		3.0
	Credits		16.0

Second Semester

ENG 106	Composition II		3.0
CHM 176	*General Chemistry II		5.0
MAT 217	*Calculus II		5.0
	Humanities Elective		3.0
	Credits		16.0

Third Semester

SPC 112	Public Speaking		3.0
CHM 263	*Organic Chemistry I		5.0
PHY 210	*Classical Physics I		4.0
PHY 211	*Classical Physics I Lab		1.0
	Social Science/Humanities Elective		3.0
	Credits		16.0

Fourth Semester

CHM 273	*Organic Chemistry II		5.0
PHY 220	*Classical Physics II		4.0
PHY 221	*Classical Physics II Lab		1.0
	Social Science/Humanities Elective		2.0
	Credits		12.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

60.0 Total Semester Hours Required

CNC Machining Diploma

The CNC Machining Diploma program prepares students for an entry level position as a CNC machine operator or general machinist. Students program, set up, and operate a computer numerical control (CNC) machine, inspect parts, perform production runs and set up jobs. Students gain a strong foundation of blueprint reading, CAD and basic manual machining skills.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

IND 109	Equipment Safety and Operation		3.0
MAT 743	Technical Math		3.0
MFG 121	Machine Trade Printreading I		2.0
MFG 156	Introduction to CNC Machining		3.0
MFG 222	Machine Operations I		4.0
MFG 211	Basic Machine Theory		2.0
	Credits		17.0

Second Semester

EGT 167	Geometric Dimensioning and Tolerancing		3.0
CAD 139	Introduction to CAD/CAM		3.0
MFG 228	Machine Operations II		4.0
MFG 190	Metallurgy		2.0
MFG 359	CNC Programming and Operations		4.0
MFG 420	Jig and Fixture Design		2.0
	Credits		18.0

35.0 Total Semester Hours Required

Communication Studies

Communication Studies majors will learn about concepts and practices of human 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

ENG 105	Composition I		3.0
	Psychology Elective		3.0
SPC 112	*Public Speaking		3.0
SPC 122	*Interpersonal Communication		3.0
MAT 157	Statistics		4.0
	Credits		16.0

Second Semester

ENG 106	Composition II		3.0
SPC 120	*Intercultural Communications		3.0
	Sociology Elective		3.0
MGT 101	*Principles of Management OR		
BUS 102	*Introduction to Business OR		
MKT 110	*Principles of Marketing		3.0
	Lab Science Requirement		4.0
	Credits		16.0

Third Semester

	General Elective **		3.0
BUS 121	*Business Communications		3.0
	Mathematics/Science Elective		3.0
SPC 160	*Voice and Diction		3.0
	Humanities Elective		3.0
	Credits		15.0

Fourth Semester

CSC 110	Introduction to Computers		3.0
HUM 287	Leadership Development Studies		3.0
PHI 142	Ethics in Business		3.0
	Social Science Elective		3.0
	General Elective **		1.0
	Credits		13.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

60.0 Total Semester Hours Required

**Recommended General Electives:

BCA 184 Comprehensive Web Page Design Software
3

BUS 154 E-business 3

GRA 137 Digital Design 3

JOU 110 Introduction to Mass Media 3

Computers: Application & Web Programming

The 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
CIS 207	Fundamentals of Web Programming		3.0
CIS 171	Java		3.0
CSC 121	Operating Systems		3.0
	A.A.S. Mathematics Requirement (MAT 102 or higher)		3.0
SPC 122	Interpersonal Communication		3.0
	Credits		18.0

Second Semester

CIS 213	Advanced Client Side Scripting		3.0
CIS 134	Web Design		3.0
CIS 139	Programming I		3.0
NET 142	Network Essentials		3.0
CIS 332	Database and SQL		3.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Credits		18.0

Third Semester

NET 612	Fundamentals of Network Security		3.0
CIS 227	Advanced Web Design		3.0
CIS 215	Server Side Web Programming		3.0
CIS 175	Java II		3.0
CIS 144	Programming II		3.0
MGT 195	Workplace Empowerment		3.0
	Credits		18.0

Fourth Semester

CIS 780	Computer Projects OR		
NET 810	Computer Internship		6.0
CIS 151	Programming III		3.0
CIS 158	Web e-Business		3.0
CIS 187	ASP.NET MVC with C#		3.0
	Social Science/Humanities Elective		3.0
	Credits		18.0

72.0 Total Semester Hours Required

Computers: Computer Science

The Computer Science program of study prepares students for transfer to four-year colleges and universities to complete undergraduate degrees. Students can choose one of four areas of concentration: Programming, Networking, Web Development, or E-Commerce. Students acquire credit in a broad base of general education courses and have the opportunity to obtain knowledge in information technology. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

CSC 110	*Introduction to Computers OR		
CSC 114	*Introduction to Information Technology		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
ENG 105	Composition I		3.0
	*CIT Concentration **		6.0
	Credits	15.0	16.0

Second Semester

	*CIT Concentration **		6.0
ENG 106	Composition II		3.0
	Social Science Elective		3.0
	Humanities Elective		3.0
	Credits		15.0

Third Semester

	*CIT Concentration **		9.0
SPC 112	Public Speaking		3.0
	Lab Science Requirement		4.0
	Credits		16.0

Fourth Semester

	Distributed Requirement		3.0
	Mathematics/Science Elective		3.0
	Social Science Electives		6.0
	Humanities Electives		6.0
	Credits		18.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

****Students must choose one of the four following areas of concentration and take all of the courses for that area of concentration:**

Programming

First Semester:

CIS 171 Java 3
CSC 121 Operating Systems 3

Second Semester:

CIS 332 Database and SQL 3
CIS 139 Programming I 3

Third Semester:

CIS 175 Java II 3
CIS 144 Programming II 3
NET 612 Fundamentals of Network Security 3

Systems

First Semester:

CSC 121 Operating Systems 3
NET 785 Fundamentals of Desktop Support 3

Second Semester:

NET 142 Network Essentials 3
NET 313 Windows Server 3

Third Semester:

CIS 127 Introduction to Programming 3
NET 343 Windows Directory Services 3
NET 612 Fundamentals of Network Security 3

Web Development

First Semester:

CIS 127 Introduction to Programming 3
CIS 207 Fundamentals of Web Programming 3

Second Semester:

CIS 134 Web Design 3
CIS 332 Database and SQL 3
CIS 213 Advanced Client Side Scripting 3

Third Semester:

CIS 227 Advanced Web Design 3
CIS 215 Server Side Web Programming 3

e-Commerce

First Semester:

BUS 130 Introduction to Entrepreneurship 3
CIS 207 Fundamentals of Web Programming 3

Second Semester:

CIS 134 Web Design 3
BUS 154 E-Business 3

Third Semester:

ACC 121 Principles of Accounting I 3
MGT 101 Principles of Management 3
MKT 110 Principles of Marketing 3

Computers: Cyber Security

The Cyber Security program of study prepared students to transfer to a four-year cyber security or information assurance program. Students will learn security fundamentals in programming, systems and networking courses. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
CIS 171	*Java		3.0
CSC 114	*Introduction to Information Technology		3.0
CSC 121	*Operating Systems		3.0
	Credits	15.0	16.0

Second Semester

ENG 106	Composition II		3.0
	Humanities Electives		6.0
NET 418	*LINUX Administration		3.0
NET 142	*Network Essentials		3.0
	Social Science Elective		3.0
	Credits		18.0

Third Semester

SPC 112	Public Speaking		3.0
CIS 175	*Java II		3.0
NET 612	*Fundamentals of Network Security		3.0
	Humanities Elective		3.0
	Lab Science Requirement		4.0
	Credits		16.0

Fourth Semester

	Mathematics/Science Elective		3.0
CRJ 100	*Introduction to Criminal Justice		3.0
	Distributed Requirement		3.0
	Social Science Electives		6.0
	Credits		15.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Computers: Desktop Support Certificate

The Desktop Support Certificate program of study prepares students for careers in support of computer users. Students are able 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
CSC 114	Introduction to Information Technology		3.0
NET 790	PC Support I		3.0
NET 785	Fundamentals of Desktop Support		3.0
CSC 121	Operating Systems		3.0
NET 795	Desktop Support Practicum		1.0
	Credits		16.0

16.0 Total Semester Hours Required

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

Computers: Management Information Systems

The Computer Science Management Information Systems program of study prepares students to integrate computer technology with business practices and management skills. Students will acquire knowledge of business functions, information technology processes, decision-making skills, and management skills. Students will grow and develop into professionals who can apply information technology tools to the spectrum of business issues. Students acquire credit in a broad base of general education courses and have the opportunity to obtain knowledge in information technology. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
CIS 127	*Introduction to Programming		3.0
CSC 114	*Introduction to Information Technology		3.0
CIS 207	*Fundamentals of Web Programming		3.0
	Credits	15.0	16.0

Second Semester

ENG 106	Composition II		3.0
	Humanities Elective		3.0
CIS 134	*Web Design		3.0
NET 142	*Network Essentials		3.0
CIS 332	*Database and SQL		3.0
	Credits		15.0

Third Semester

SPC 112	Public Speaking		3.0
BUS 102	*Introduction to Business OR		
BUS 154	*E-business		3.0
	Social Science Elective		3.0
	Humanities Elective		3.0
	Lab Science Requirement		4.0
	Credits		16.0

Fourth Semester

	Mathematics/Science Elective		3.0
ACC 121	*Principles of Accounting I		3.0
	Humanities Elective		3.0
	Distributed Requirement		3.0
	Social Science Elective		6.0
	Credits		18.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Computers: Network and System Administration

The Network and System Administration program of study provides students with the necessary training to install, maintain and administer network 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
CSC 114	Introduction to Information Technology		3.0
NET 790	PC Support I		3.0
NET 785	Fundamentals of Desktop Support		3.0
CSC 121	Operating Systems		3.0
NET 795	Desktop Support Practicum		1.0
	A.A.S. Mathematics Requirement (MAT 102 or higher)		3.0
	Credits		19.0

Second Semester

CIS332	Database and SQL		3.0
NET 213	Cisco Networking		3.0
NET 313	Windows Server		3.0
NET 418	LINUX Administration		3.0
NET 478	Information Storage and Management		3.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Credits		18.0

Third Semester

NET 495	Virtual Infrastructure		3.0
NET 225	Routing & Switching Essentials		3.0
NET 343	Windows Directory Services		3.0
CIS 127	Introduction to Programming		3.0
NET 612	Fundamentals of Network Security		3.0
	Social Science/Humanities Elective		3.0
	Credits		18.0

Fourth Semester

NET 226	Scaling Networks		3.0
NET 227	Connecting Networks		3.0
CIS 780	Computer Projects	3.0	6.0
NET 810	Computer Internship		6.0
MGT 195	Workplace Empowerment		3.0
	Credits	18.0	21.0

73.0 Total Semester Hours Required

Computers: Programming Certificate

The Programming Certificate 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

CSC 114	Introduction to Information Technology		3.0
CIS 207	Fundamentals of Web Programming		3.0
CIS 171	Java		3.0
CSC 121	Operating Systems		3.0
SPC 122	Interpersonal Communication		3.0
	Credits		15.0

Second Semester

CIS 213	Advanced Client Side Scripting		3.0
CIS 134	Web Design		3.0
CIS 139	Programming I		3.0
NET 142	Network Essentials		3.0
CIS 332	Database and SQL		3.0
	Credits		15.0

30.0 Total Semester Hours Required

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

Computers: System Administration Certificate

The System Administration Certificate program of study provides students documentation of proficiency with installing and maintaining hardware and software for servers and desktops. 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
CSC 114	Introduction to Information Technology	3.0
NET 790	PC Support I	3.0
NET 785	Fundamentals of Desktop Support	3.0
CSC 121	Operating Systems	3.0
NET 795	Desktop Support Practicum	1.0
	Credits	16.0

Second Semester

CIS332	Database and SQL	3.0
NET 213	Cisco Networking	3.0
NET 313	Windows Server	3.0
NET 418	LINUX Administration	3.0
NET 478	Information Storage and Management	3.0
	Credits	15.0

31.0 Total Semester Hours Required

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

Construction Technology

The Construction Technology program of study provides a basic knowledge of carpentry and related skills used in residential and commercial construction. Residential construction involves the building or remodeling of homes, apartments and similar structures. Commercial construction involves advanced skills in concrete, metal building construction, advanced blueprint reading, and commercial interior/exterior wall finishes. The program provides the opportunity to learn and apply all phases of the industry with emphasis on carpentry. 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
CON 114	Residential Print Reading	3.0
CON 180	Principles of Building Construction I	3.0
CON 170	Building Construction Techniques I	6.0
ENG 110	Writing For The Workplace OR	
ENG 105	Composition I	3.0
	Credits	18.0

Second Semester

CON 244	Related Trade Applications	3.0
CON 181	Principles of Building Construction II	3.0
CON 171	Building Construction Techniques II	6.0
MGT 195	Workplace Empowerment	3.0
CON 118	Introduction to Sustainable Construction	3.0
	Credits	18.0

Summer

CON 425	Internship	4.0
	Credits	4.0

Third Semester

CON 250	Principles of Commercial Construction I	3.0
CON 251	Commercial Construction Techniques I	6.0
CON 115	Commercial Print Reading	3.0
CON 325	Estimating	3.0
	Social Science Elective	3.0
	Credits	18.0

Fourth Semester

CON 253	Principles of Commercial Construction II	3.0
CON 254	Commercial Construction Techniques II	6.0
CON 348	Supervision and Leadership in Building Construction	3.0
WEL 149	Arc Welding	3.0
CON 119	Construction Materials and Inspection	3.0
	Credits	18.0

76.0 Total Semester Hours Required

**May substitute with MAT 102 or higher.

Construction Technology: Carpentry Certificate

The Construction Technology: Carpentry Certificate 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
CON 114	Residential Print Reading		3.0
CON 180	Principles of Building Construction I		3.0
CON 170	Building Construction Techniques I		6.0
	Communications Requirement (ENG 105 or 110)		3.0
	Credits		18.0

18.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Construction Technology: Residential

The Residential Construction Technology program of study provides a basic knowledge of carpentry and related skills used in the residential construction industry. Residential construction involves the building or remodeling of homes, apartments and similar 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
CON 114	Residential Print Reading		3.0
CON 180	Principles of Building Construction I		3.0
CON 170	Building Construction Techniques I		6.0
ENG 110	Writing For The Workplace OR		
ENG 105	Composition I		3.0
	Credits		18.0

Second Semester

CON 244	Related Trade Applications		3.0
CON 181	Principles of Building Construction II		3.0
CON 171	Building Construction Techniques II		6.0
MGT 195	Workplace Empowerment		3.0
CON 118	Introduction to Sustainable Construction		3.0
	Credits		18.0

Summer

CON 425	Internship		4.0
	Credits		4.0

40.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Criminal Justice

The Criminal Justice program of study is designed to provide students with the background necessary to enter the justice field and/or to continue their 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
CRJ 100	*Introduction to Criminal Justice		3.0
CRJ 111	*Police and Society		3.0
SPC 112	Public Speaking		3.0
	Social Science Elective		3.0
	Credits		15.0

Second Semester

ENG 106	Composition II		3.0
CRJ 120	*Introduction to Corrections		3.0
CRJ 133	*Constitutional Criminal Procedure		3.0
	Humanities Elective		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Credits	15.0	16.0

Third Semester

CRJ 130	*Criminal Law		3.0
CRJ 258	*Ethical Issues in Criminal Justice		3.0
	Distributed Requirement **		3.0
	Lab Science Requirement		4.0
	Social Science Elective **		3.0
	Credits		16.0

Fourth Semester

	Humanities Electives		6.0
	Mathematics/Science Elective		3.0
	General Electives **		6.0
	Social Science Elective **		3.0
	Credits		18.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**Recommended Social Science, Distributed and General Electives:

CRJ 160 Introduction to Forensic Investigation 3
 CRJ 240 Criminal Investigation 3
 CRJ 290 Criminal Justice Cooperative Education 3
 HIS 151 United States History to 1877 3
 POL 111 American National Government 3
 POL 201 The United States Constitution 3
 PSY 111 Introduction to Psychology 3
 PSY 241 Abnormal Psychology 3
 SOC 110 Introduction to Sociology 3
 SOC 200 Minority Group Relations 3
 SOC 230 Juvenile Delinquency 3
 SOC 235 Gangs 3
 SOC 240 Criminology 3

Culinary Arts: Baking and Pastry Art

The Culinary Arts program of study, Baking and Pastry Art prepares students for a challenging career in the bake shop. The curriculum emphasizes fundamental techniques in culinary arts, and baking. Students will be introduced to the techniques of producing artisan breads, classic pastries, pies, tarts and petit fours, celebration cakes, confections and showpieces. Throughout the program students will develop professionalism and proficiency in preparation procedures, production methods and presentation techniques of pastries, baked goods and desserts, as well as related instruction in cost controls, food handling safety, purchasing, menu planning, dining service, and nutrition and wellness. 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 186	Culinary Foundations I		3.0
HCM 111	Principles of Baking I		2.0
HCM 191	Quantity Food Production I Lab		4.0
HCM 113	Culinary Baking		1.0
HCM 100	Sanitation and Safety		2.0
HCM 200	Dining Service		2.0
MAT 711	Business and Financial Mathematics		3.0
	Credits		17.0

Second Semester

HCM 187	Culinary Foundations II		3.0
HCM 112	Principles of Baking II		2.0
HCM 192	Quantity Food Production II Lab		4.0
HCM 121	Culinary Baking II		1.0
	Social Science/Humanities Elective		3.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Credits		16.0

Summer

HCM 517	Baking Internship		2.0
	Credits		2.0

Third Semester

HCM 240	Menu Planning and Design		2.0
HCM 230	Nutrition and Wellness		3.0
HCM 343	Recipe Costing and Menu Pricing		2.0
HCM 255	Purchasing		3.0
HCM 257	Advanced Baking I		3.0
HCM 267	Baking Science		2.0
	Advanced Baking Lab Electives **		4.0
	Credits		19.0

Fourth Semester

HCM 278	Cost Control		2.0
HCM 258	Advanced Baking II		3.0
HCM 273	Baking Seminar		1.0
HCM 330	Hospitality Personnel Management		3.0
HCM 525	Baking Capstone		1.0
	Advanced Baking Lab Electives **		4.0
MGT 195	Workplace Empowerment		3.0
	Credits		17.0

71.0 Total Semester Hours Required

**Advanced Baking Lab electives must be selected from the following:

HCM 216 Pastries 1
 HCM 217 Artisan Breads 1
 HCM 218 Cakes 1
 HCM 219 International Breads 1
 HCM 220 Chocolate and Sugar 1
 HCM 221 Cake Decorating 1
 HCM 222 Convenience Food 1
 HCM 223 Laminated Doughs 1

Culinary Arts: Culinarian

The Culinary Arts program of study, Culinarian prepares students who enjoy working with food for a challenging career in all facets of the hospitality industry. The curriculum emphasizes fundamental and intermediate techniques in culinary skills and kitchen management. The curriculum enables students to develop supervisory skills as well as training to become a culinarian. Related instruction emphasizes supervision, cost controls, purchasing, nutrition and wellness, advanced culinary garde manger, advanced soups and sauces, and à la carte cookery principles. 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 186	Culinary Foundations I	3.0
HCM 111	Principles of Baking I	2.0
HCM 191	Quantity Food Production I Lab	4.0
HCM 113	Culinary Baking	1.0
HCM 100	Sanitation and Safety	2.0
HCM 200	Dining Service	2.0
MAT 711	Business and Financial Mathematics	3.0
	Credits	17.0

Second Semester

HCM 187	Culinary Foundations II	3.0
HCM 112	Principles of Baking II	2.0
HCM 192	Quantity Food Production II Lab	4.0
HCM 121	Culinary Baking II	1.0
	Social Science/Humanities Elective	3.0
	A.A.S. Communications Requirement (ENG 105 or 110)	3.0
	Credits	16.0

Summer

HCM 512	Culinary Internship	2.0
	Credits	2.0

Third Semester

HCM 240	Menu Planning and Design	2.0
HCM 230	Nutrition and Wellness	3.0
HCM 343	Recipe Costing and Menu Pricing	2.0
HCM 255	Purchasing	3.0
HCM 243	Soups and Sauces	1.0
HCM 244	Soups and Sauces Lab	2.0
HCM 246	Garde Manger/Charcuterie	1.0
HCM 247	Garde Manger/Charcuterie Lab	2.0
HCM 197	Regional Wine History	2.0
	Credits	18.0

Fourth Semester

HCM 176	World Cuisine	2.0
HCM 278	Cost Control	2.0
HCM 248	A la Carte Cooking	2.0
HCM 249	A la Carte Cooking Lab	4.0
HCM 330	Hospitality Personnel Management	3.0
HCM 532	Culinary Capstone	2.0
MGT 195	Workplace Empowerment	3.0
	Credits	18.0

71.0 Total Semester Hours Required

Culinary Arts: Food Service

The Food Service program of study prepares students for a challenging career in restaurant, hotel, motel, institutional, health care and private club facilities. The curriculum emphasizes fundamental and intermediate techniques of food preparation, production and baking skills. It enables students to develop culinary skills as they prepare for entry or intermediate positions in the industry. Related instruction emphasizes the use and selection of equipment, safety and sanitation, mathematical applications, meal service, product selection, and computer skills. Graduates of this program are awarded a diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

HCM 186	Culinary Foundations I	3.0
HCM 111	Principles of Baking I	2.0
HCM 191	Quantity Food Production I Lab	4.0
HCM 113	Culinary Baking	1.0
HCM 100	Sanitation and Safety	2.0
HCM 200	Dining Service	2.0
MAT 711	Business and Financial Mathematics	3.0
	Credits	17.0

Second Semester

HCM 187	Culinary Foundations II	3.0
HCM 112	Principles of Baking II	2.0
HCM 192	Quantity Food Production II Lab	4.0
HCM 121	Culinary Baking II	1.0
MGT 195	Workplace Empowerment	3.0
	Communications Requirement (ENG 105 or 110)	3.0
	Credits	16.0

Summer

HCM 512	Culinary Internship OR	
HCM 517	Baking Internship	2.0
	Credits	2.0

35.0 Total Semester Hours Required

Culinary Arts: Food Technician Certificate

The Food Technician Certificate 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

HCM 100	Sanitation and Safety		2.0
HCM 186	Culinary Foundations I		3.0
HCM 191	Quantity Food Production I Lab		4.0
HCM 187	Culinary Foundations II		3.0
HCM 192	Quantity Food Production II Lab		4.0
	Credits		16.0

16.0 Total Semester Hours Required

Culinary Arts: Restaurant & Hospitality Management

The Culinary Arts program of study, Restaurant and Hospitality Management prepares students for a challenging career in all facets of the hospitality industry. The curriculum emphasizes fundamental techniques in culinary arts with an emphasis in restaurant and institutional management. The curriculum enables students to develop management, marketing, and supervisory skills emphasizing cost controls, nutrition and wellness, fine dining management, human relations and personnel. 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

HCM 186	Culinary Foundations I		3.0
HCM 111	Principles of Baking I		2.0
HCM 191	Quantity Food Production I Lab		4.0
HCM 113	Culinary Baking		1.0
HCM 100	Sanitation and Safety		2.0
HCM 200	Dining Service		2.0
MAT 711	Business and Financial Mathematics		3.0
	Credits		17.0

Second Semester

HCM 187	Culinary Foundations II		3.0
HCM 112	Principles of Baking II		2.0
HCM 192	Quantity Food Production II Lab		4.0
HCM 121	Culinary Baking II		1.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Social Science/Humanities Elective		3.0
	Credits		16.0

Summer

HCM 512	Culinary Internship		2.0
	Credits		2.0

Third Semester

HCM 240	Menu Planning and Design		2.0
HCM 230	Nutrition and Wellness		3.0
HCM 343	Recipe Costing and Menu Pricing		2.0
HCM 255	Purchasing		3.0
BUS 185	Business Law I		3.0
BUS 102	Introduction to Business		3.0
HCM 197	Regional Wine History		2.0
	Credits		18.0

Fourth Semester

HCM 278	Cost Control		2.0
HCM 245	Design and Layout of Food Service Facilities		3.0
HCM 330	Hospitality Personnel Management		3.0
HCM 214	Culinary Media/Networking		3.0
MKT 110	Principles of Marketing		3.0
MGT 195	Workplace Empowerment		3.0
	Credits		17.0

70.0 Total Semester Hours Required

Dental Assistant

The 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. Graduates of this program are awarded a diploma. 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.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

HSC 128	Anatomy and Physiology for Allied Health Programs		3.0
DEA 312	Dental Radiography I		3.0
DEA 403	Dental Materials		3.0
DEA 502	Dental Assisting Principles		4.0
DEA 253	Dental Science I		4.0
	Communications Requirement (ENG 105 or 110)		3.0
	Credits		20.0

Second Semester

DEA 321	Dental Radiography II		2.0
DEA 602	Dental Specialties		4.5
DEA 706	Procedures for the Dental Office		2.5
DEA 263	Dental Science II		2.0
DEA 582	Dental Assisting Experience I		2.0
	Psychology Elective		3.0
	Credits		16.0

Summer

DEA 585	Dental Assisting Experience II		5.0
DEA 933	Internship Seminar		1.0
	Credits		6.0

42.0 Total Semester Hours Required

Courses with DEA prefix must in the sequence listed above.

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

Dental Hygiene

The 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. Upon program completion, graduates are awarded an Associate of Applied Science (A.A.S.) degree. 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.

Prerequisite: Grades of "C" or higher in Anatomy and Physiology I, Anatomy and Physiology II, and Introduction to Organic and Biochemistry.

Requirements for the Degree:

SPC 112 Public Speaking 3
ENG 105 Composition I 3

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

BIO 186	Microbiology		4.0
DHY 118	Oral Histology and Embryology		1.0
DHY 174	Principles of Dental Hygiene		5.0
DHY 114	Dental Hygiene Anatomical Sciences		4.0
DHY 155	Radiology		2.0
DHY 157	Radiology Lab		1.0
	Credits		17.0

Second Semester

DHY 183	Dental Hygiene I Theory		2.0
DHY 184	Clinical Dental Hygiene I		3.0
DHY 153	Dental Emergencies		1.0
DHY 211	Periodontology		2.0
DHY 228	Clinical Preventive Dentistry		2.0
DHY 226	Biomaterials for the Dental Hygienist		2.5
	Credits		12.5

Third Semester

DHY 275	Dental Hygiene II Theory		1.0
DHY 286	Clinical Dental Hygiene II		2.0
DHY 288	Local Anesthesia and Pain Control		1.0
DHY 132	Dental Pharmacology		3.0
	Credits		7.0

Fourth Semester

DHY 293	Dental Hygiene III Theory		2.0
DHY 295	Clinical Dental Hygiene III		4.0
DHY 252	Community Dentistry		3.0
DHY 213	Periodontology II		1.0
DHY 141	General and Oral Pathology		3.0
	Credits		13.0

Fifth Semester

DHY 303	Dental Hygiene IV Theory		2.0
DHY 304	Clinical Dental Hygiene IV		4.0
DHY 255	Community Oral Health		2.0
DHY 241	Dental Ethics		2.0
PSY 111	Introduction to Psychology		3.0
MGT 195	Workplace Empowerment		3.0
DHY 230	Oral Health Nutrition		2.0
	Credits		18.0

73.5 Total Semester Hours Required

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

Design Technology

The Design Technology program 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 degree.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
EGT 155	Engineering Drawing Practices		3.0
EGT 113	Introduction to PLM		3.0
EGT 171	Manufacturing Processes		3.0
CAD 129	CAD I		3.0
	Credits		15.0

Second Semester

MAT 129	Precalculus *		5.0
MGT 195	Workplace Empowerment		3.0
CAD 197	CAD 3D-NX		4.0
EGT 167	Geometric Dimensioning and Tolerancing		3.0
	Credits		15.0

Summer

CAD 933	Design Technology Internship		6.0
	Credits		6.0

Third Semester

SPC 122	Interpersonal Communication		3.0
EGT 176	Electric Power and Electronics		4.0
CAD 203	Principles of Design		3.0
CAD 238	Design Communications		3.0
EGT 153	Design Statics		3.0
	Credits		16.0

Fourth Semester

PHI 105	Introduction to Ethics		3.0
CAD 222	Advanced CAD 3D-NX		3.0
CAD 236	Design Problems		6.0
EGT 184	Strength of Materials		3.0
	Credits		15.0

67.0 Total Semester Hours Required

*May substitute with MAT 121 and MAT 130.

Diesel Mechanics

The 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
DSL 144	Electrical Systems		4.0
DSL 846	Diesel Lab I **		6.0
	General Elective		3.0
	Credits		17.0

Second Semester

DSL 654	Hydraulic/Air Brakes		4.0
DSL 674	Chassis/Driveline		4.0
DSL 856	Diesel Lab II **		6.0
	Communications Requirement (ENG 105 or 110)		3.0
	Credits		17.0

Summer

DSL 742	Air Conditioning/Refrigeration		2.0
DSL 829	Preventative Maintenance		2.0
DSL 863	Diesel Lab III **		3.0
	Credits		7.0

41.0 Total Semester Hours Required

**Students must complete 15 semester credit hours of laboratory courses.

Diesel Technology

The 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
DSL 144	Electrical Systems		4.0
DSL 846	Diesel Lab I		6.0
MAT 743	Technical Math		3.0
	Credits		17.0

Second Semester

DSL 654	Hydraulic/Air Brakes		4.0
DSL 674	Chassis/Driveline		4.0
DSL 856	Diesel Lab II		6.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Credits		17.0

Summer

DSL 742	Air Conditioning/Refrigeration		2.0
DSL 863	Diesel Lab III		3.0
DSL 829	Preventative Maintenance		2.0
	Credits		7.0

Third Semester

DSL 354	Engines I		4.0
DSL 444	Fuel Systems		4.0
DSL 876	Diesel Lab IV OR**		
DSL 883	Diesel Internship II		6.0
MGT 195	Workplace Empowerment		3.0
	Credits		17.0

Fourth Semester

DSL 364	Engines II		4.0
DSL 544	Transmissions/Drive Axle		4.0
DSL 886	Diesel Lab V OR **		
DSL 883	Diesel Internship II **		6.0
	Social Science/Humanities Elective		3.0
	Credits		17.0

Summer

DSL 893	Diesel Lab VI OR **		
DSL 881	Diesel Internship I **		3.0
	Credits		3.0

78.0 Total Semester Hours Required

**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.

Early Childhood Education

The Early Childhood Education program of study is designed for students who wish to become early childhood teachers in birth through grade three classrooms. The curriculum provides students with a foundation in best practices with an emphasis in planning, leading, and evaluating learning experiences through observation, discussion and active participation. Students apply research and theory by demonstrating newly acquired skills in the Laboratory School. The program is designed for transfer to institutions that offer teacher certification. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ECE 103	*Introduction to Early Childhood Education		3.0
ECE 170	*Child Growth and Development		3.0
ECE 153	*Early Childhood Curriculum I with Lab		4.0
ECE 244	*Early Childhood Guidance with Lab		4.0
ENG 105	Composition I		3.0
	Credits		17.0

Second Semester

ECE 221	*Infant/Toddler Care and Education		3.0
ECE 133	*Child Health, Safety, and Nutrition		3.0
ECE 156	*Early Childhood Curriculum II with Lab		4.0
ENG 106	Composition II		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Credits	16.0	17.0

Third Semester

PSY 111	Introduction to Psychology		3.0
HIS 151	U.S. History to 1877 OR		
HIS 152	U.S. History Since 1877		3.0
SPC 112	Public Speaking		3.0
LIT 110	American Literature to Mid 1800s		3.0
	Physical Science Elective		3.0
	Credits		15.0

Fourth Semester

POL 111	American National Government		3.0
PHI 101	Introduction to Philosophy		3.0
ENV 111	Environmental Science		4.0
ART 101	Art Appreciation OR		
MUS 100	Music Appreciation		3.0
	Distributed Requirement		3.0
	Credits		16.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Early Childhood Studies

The 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 their 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
ECE 103	Introduction to Early Childhood Education	3.0
ECE 170	Child Growth and Development	3.0
ECE 153	Early Childhood Curriculum I with Lab	4.0
SPC 122	Interpersonal Communication	3.0
	Credits	17.0

Second Semester

ECE 120	Communication with Families	2.0
ECE 156	Early Childhood Curriculum II with Lab	4.0
ECE 221	Infant/Toddler Care and Education	3.0
ECE 125	School Age Care	2.0
ECE 133	Child Health, Safety, and Nutrition	3.0
ENG 105	Composition I	3.0
	Credits	17.0

Third Semester

EDU 235	Children's Literature	3.0
ECE 287	Exceptional Learner	3.0
ECE 268	Early Childhood Field Experience	4.0
ECE 290	Early Childhood Program Administration	3.0
MAT 157	Statistics	4.0
	Credits	17.0

Fourth Semester

ECE 258	Early Childhood Field Practicum	6.0
CSC 110	Introduction to Computers OR	
BCA 212	Introduction to Computer Business Applications	3.0
MGT 195	Workplace Empowerment	3.0
	Social Science Elective	3.0
	Credits	15.0

66.0 Total Semester Hours Required

Early Childhood Studies Diploma

The Early Childhood Diploma 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
ECE 103	Introduction to Early Childhood Education	3.0
ECE 170	Child Growth and Development	3.0
ECE 153	Early Childhood Curriculum I with Lab	4.0
SPC 122	Interpersonal Communication	3.0
	Credits	17.0

Second Semester

ECE 120	Communication with Families	2.0
ECE 133	Child Health, Safety, and Nutrition	3.0
ECE 156	Early Childhood Curriculum II with Lab	4.0
ECE 221	Infant/Toddler Care and Education	3.0
ENG 110	Writing For The Workplace OR	
ENG 105	Composition I	3.0
	Credits	15.0

32.0 Total Semester Hours Required

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

Early Childhood: Administration Certificate

The Early Childhood Administration Certificate program of study is designed for early childhood professionals who already have an AAS Degree and wish to pursue an administrative career. The certificate provides leadership and management skills necessary to successfully administer an early childhood program.

Prerequisite: An associate or higher academic degree to begin this certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

ECE 268	Early Childhood Field Experience		4.0
ECE 290	Early Childhood Program Administration		3.0
MGT 130	Principles of Supervision		3.0
ACC 111	Introduction to Accounting		3.0
MGT 175	Introduction to Law for Managers and Supervisors		3.0
BUS 130	Introduction to Entrepreneurship		3.0
	Credits		19.0

19.0 Total Semester Hours Required

Early Childhood: Child Development Certificate

The Child Development Certificate 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. Graduates of this program are awarded a certificate. Upon completion of the certificate, students are eligible for CDA certification from the Council for Professional Recognition.

Students must complete the curriculum described below:

Recommended Course Sequence

ECE 103	Introduction to Early Childhood Education		3.0
ECE 244	Early Childhood Guidance with Lab		4.0
ECE 133	Child Health, Safety, and Nutrition		3.0
ECE 221	Infant/Toddler Care and Education		3.0
ECE 153	Early Childhood Curriculum I with Lab		4.0
	Credits		17.0

17.0 Total Semester Hours Required

Education: Grades K - 12

The Education: Grades K-12 program of study is designed for students who wish to become preschool, elementary or 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
CSC 110	Introduction to Computers		3.0
PSY 111	Introduction to Psychology		3.0
EDU 210	*Foundations of Education		3.0
ECE 170	*Child Growth and Development OR **		
PSY 121	*Developmental Psychology		3.0
	Credits		15.0

Second Semester

ENG 106	Composition II		3.0
HIS 151	U.S. History to 1877 OR		
HIS 152	U.S. History Since 1877		3.0
SPC 112	Public Speaking		3.0
EDU 245	*Exceptional Learner		3.0
MAT 157	Statistics		4.0
	Credits		16.0

Third Semester

BIO 105	Introductory Biology		4.0
LIT 110	American Literature to Mid 1800s OR		
LIT 140	British Literature I		3.0
EDU 240	Educational Psychology		3.0
	General Electives		4.0
	Distributed Requirement		3.0
	Credits		17.0

Fourth Semester

ENV 111	Environmental Science		4.0
POL 111	American National Government		3.0
EDU 235	*Children's Literature OR **		
PSY 224	*Adolescent Psychology		3.0
ART 101	Art Appreciation OR		
MUS 100	Music Appreciation		3.0
PHI 101	Introduction to Philosophy		3.0
	Credits		16.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**Elementary Education majors must take ECE 170 and EDU 235, and Secondary Education majors must take PSY 121 and PSY 224.

Electrical Technology Certificate

The Electrical Technology Certificate program 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

ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
ELE 126	Basics of Wiring		2.0
	Credits		7.0

Second Semester

ELE 179	Advanced Wiring Systems		5.0
ELE 106	Electrical Blueprint Reading		2.0
ELE 207	Residential Electrical Services		3.0
	Credits		10.0

17.0 Total Semester Hours Required

Electrical Technology Diploma

The Electrical Technology Diploma program 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
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
ELE 155	National Electrical Code I		2.0
ELE 126	Basics of Wiring		2.0
MAT 743	Technical Math		3.0
	Credits		17.0

Second Semester

ELE 179	Advanced Wiring Systems		5.0
ELE 106	Electrical Blueprint Reading		2.0
ELE 207	Residential Electrical Services		3.0
ELE 156	National Electrical Code II		2.0
ELE 180	Electrical Lighting Systems		2.0
SER 130	Introduction to Solar Energy		3.0
	Credits		17.0

34.0 Total Semester Hours Required

Electronic Engineering Technology

The Electronic Engineering Technology program of study prepares students for a technical level career in manufacturing, service and sales in four primary electronics fields: computers, telecommunications, bio-medical electronics, and industrial electronics. Students learn high technology theory in industrial electronics, microelectronics and optoelectronics in conjunction with associated laboratory assignments to assure practical knowledge. 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
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

Second Semester

ELT 250	Programmable Logic Controllers		3.0
ELT 251	Programmable Logic Controllers Lab		2.0
ELT 346	Circuit Analysis II		3.0
ELT 347	Circuit Analysis II Lab		2.0
NET 790	PC Support I		3.0
	Technical Elective **		3.0
	Credits		16.0

Third Semester

ELT 252	Advanced Programmable Logic Controllers		3.0
ELT 253	Advanced Programmable Logic Controllers Lab		2.0
ELT 313	Digital Circuits I		4.0
ELT 523	Electronic Devices		4.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Social Science/Humanities Elective		3.0
	Credits		19.0

Fourth Semester

ELT 432	Telecommunications		4.0
ELT 433	Telecommunications Lab		1.0
ELT 850	Design Projects Lab OR		
EGT 470	PLTW - Engineering Design and Development OR		
EGR 470	PLTW - Engineering Design and Development	2.0	3.0
MGT 195	Workplace Empowerment		3.0
	Technical Elective **		3.0
	Communication, Humanities, Social Science, Science, or Mathematics Elective		3.0
	Credits	16.0	17.0

67.0 Total Semester Hours Required

*May substitute for MAT 102 or higher.

****Technical Electives must be selected from the following:**

ATR 113 and 114 Industrial Robotics and Industrial Robotics Lab 5
 CIS 127 Introduction to Programming 3
 CSC 110 Introduction to Computers 3
 EGT 171 Manufacturing Processes 3
 NET 142 Network Essentials 3
 PHY 210 and 211 Classical Physics I and Classical Physics I Lab 5
 PHY 220 and 221 Classical Physics II and Classical Physics II Lab 5
 WEL 149 Arc Welding 3

Electronic Technology Diploma

The Electronic Technology Diploma program of study prepares students to be employed as technicians in the fields of electrical maintenance, installation and repair. The program was developed especially for industry and is valuable in the development, installation and maintenance of complex industrial processes as well as their 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
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

Second Semester

ELT 250	Programmable Logic Controllers		3.0
ELT 251	Programmable Logic Controllers Lab		2.0
ELT 346	Circuit Analysis II		3.0
ELT 347	Circuit Analysis II Lab		2.0
NET 790	PC Support I		3.0
	Technical Elective **	3.0	5.0
	Credits	16.0	18.0

32.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

**Technical Elective must be selected from the following:

ATR 113 and ATR 114 Industrial Robotics 3 and Industrial Robotics Lab 2
 CIS 127 Introduction to Programming 3
 CSC 110 Introduction to Computers 3
 EGT 171 Manufacturing Processes 3
 NET 142 Network Essentials 3
 PHY 210 and PHY 211 Classical Physics I 4 and Classical Physics I Lab 1
 WEL 149 Arc Welding 3

Exercise Science

The Exercise Science program of study prepares students to transfer to a four-year institution for further education in pre-health professional degrees (pre-physical therapy, athletic training, or per-physician assistant), corporate wellness, personal trainer, cardiac rehabilitation, and human performance. Students gain a solid foundation of human biology, anatomy and physiology, nutrition, and exercise programming. Included in this program are tools to obtain a personal trainer certificate. Graduates of this program are awarded an Associate of Science (A.S.) degree.

Recommended Course Sequence

First Semester

PEH 142	*First Aid		3.0
ENG 105	Composition I		3.0
PEH 102	*Health		3.0
PSY 111	*Introduction to Psychology		3.0
MAT 157	Statistics		4.0
	Credits		16.0

Second Semester

BIO 151	*Nutrition		3.0
BIO 157	*Human Biology		4.0
ENG 106	Composition II		3.0
PSY 210	Sport and Exercise Psychology		3.0
	General Elective		3.0
	Credits		16.0

Third Semester

PEH 170	*Principles of Weight Training		3.0
PEC 230	Introduction to Sports Medicine		3.0
BIO 168	*Human Anatomy and Physiology I		4.0
SPC 112	Public Speaking		3.0
	Social Science/Humanities Elective		3.0
	Credits		16.0

Fourth Semester

HSC 272	*Certified Personal Trainer		3.0
PET 230	Care and Prevention of Athletic Injuries		3.0
BIO 173	*Human Anatomy and Physiology II		4.0
	Mathematics/Science Elective **		3.0
	Distributed Requirement		3.0
	Credits		16.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**Recommended science electives:

PTA 120 Kinesiology 3
 CHM 166 General Chemistry I 5
 PHY 156 General Physics I 4

Fire Science Technology

The Fire Science Technology program of study is designed to enhance the careers of students already employed as firefighters as well as those interested in this as a new career. Students progress systematically through an extended program of study. Courses emphasize state-of-the-art fire fighting techniques, as well as preparing firefighters for administrative duties. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Humanities Elective		3.0
	*Fire Science Electives **		6.0
	Credits	15.0	16.0

Second Semester

ENG 106	Composition II		3.0
	Mathematics/Science Elective		3.0
	Social Science Elective		3.0
	*Fire Science Electives **		6.0
	Credits		15.0

Third Semester

	Social Science Elective		3.0
	Lab Science Requirement		4.0
	*Fire Science Electives **		6.0
	Credits		13.0

Fourth Semester

	Social Science Elective		3.0
	Humanities Elective		3.0
SPC 112	Public Speaking		3.0
	*Fire Science Elective **		3.0
	Credits		12.0

Fifth Semester

	Humanities Elective		3.0
	*Fire Science Elective **		3.0
	Distributed Requirement		3.0
	Credits		9.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**Required Courses for the Program:

FIR 101 Introduction to Fire Protection Technology 3
 FIR 131 Codes and Inspection 3
 FIR 145 Strategy and Tactics 3
 FIR 148 Hydraulics and Pumping Applications 3
 FIR 152 Fire Protection Systems 3
 FIR 157 Fire Protection Equipment 3
 FIR 235 Fire Investigation 3
 FIR 270 Survey of Construction 3

General Studies AA

The General Studies A.A. 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

SDV 108	*The College Experience		1.0
ENG 105	Composition I		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Social Science Elective		3.0
	Humanities Elective		3.0
	General Elective		3.0
	Credits	16.0	17.0

Second Semester

ENG 106	Composition II		3.0
	Mathematics/Science Elective		3.0
	Social Science Elective		3.0
	Humanities Elective		3.0
	General Elective		3.0
	Credits		15.0

Third Semester

SPC 112	Public Speaking OR		
SPC 122	Interpersonal Communication		3.0
	Lab Science Requirement		4.0
	Social Science Elective		3.0
	General Electives		6.0
	Credits		16.0

Fourth Semester

	Humanities Elective		3.0
	Distributed Requirement		3.0
	General Electives		11.0
	Credits		17.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

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 AGS

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, ENG SPC 112, and SPC 122)		3.0
	Social Science Elective		3.0
	A.G.S. Mathematics Requirement (MAT 102-227)	3.0	4.0
	General Electives		6.0
	Credits	15.0	16.0

Second Semester

	A.G.S. Communications Requirement (ENG 105, ENG 106, ENG 110, ENG SPC 112, and SPC 122)		3.0
	Social Science Elective		3.0
	Lab Science Requirement		4.0
	Humanities Elective		3.0
	General Elective		3.0
	Credits		16.0

Third Semester

	A.G.S. Communications Requirement (ENG 105, ENG 106, ENG 110, ENG SPC 112, and SPC 122)		3.0
	Social Science Elective		3.0
	Humanities Elective		3.0
	General Electives		6.0
	Credits		15.0

Fourth Semester

	General Electives		15.0
	Distributed Requirement		3.0
	Credits		18.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

General Studies AS

The General Studies A.S. 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

SDV 108	*The College Experience		1.0
ENG 105	Composition I		3.0
	A.S. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Lab Science Requirement		4.0
	Social Science/Humanities Elective		3.0
	General Elective		2.0
	Credits	16.0	17.0

Second Semester

ENG 106	Composition II		3.0
	Mathematics/Science Electives		7.0
	Social Science/Humanities Elective		3.0
	General Elective		3.0
	Credits		16.0

Third Semester

SPC 112	Public Speaking OR		
SPC 122	Interpersonal Communication		3.0
	Mathematics/Science Elective		3.0
	Social Science/Humanities Elective		3.0
	General Electives		7.0
	Credits		16.0

Fourth Semester

	Mathematics/Science Elective		3.0
	Distributed Requirement		3.0
	General Electives		10.0
	Credits		16.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

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.

Graphic Communications

The Graphic Communications program of study provides an exciting and rewarding career for graduates. Graphic Communications provides students with skills needed for graphic arts in printing and web development, and with basic skills in marketing and e-commerce. Due to the enormous growth factor and ever-expanding technological advances, countless opportunities exist for graduates. 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

GRA 140	Digital Imaging	3.0
GRA 173	Typography	3.0
GRA 104	Introduction to Graphic Communications	3.0
ART 120	2-D Design	3.0
SPC 122	Interpersonal Communication OR	
SPC 112	Public Speaking	3.0
	Credits	15.0

Second Semester

GRA 137	Digital Design	3.0
GRA 121	Digital Drawing	3.0
GRA 949	Special Topics	1.0
GRA 148	Visual Web Design	3.0
ENG 105	Composition I	3.0
CIS 207	Fundamentals of Web Programming OR	
BCA 155	Introduction to Web Design	3.0
	Credits	16.0

Third Semester

GRA 141	Digital Imaging II	3.0
GRA 949	Special Topics	1.0
BUS 154	E-business	3.0
MKT 110	Principles of Marketing	3.0
MGT 195	Workplace Empowerment	3.0
	Program Elective **	3.0
	A.A.S. Mathematics Requirement (MAT 102 or higher)	3.0
	Credits	19.0

Fourth Semester

GRA 949	Special Topics	1.0
MKT 150	Principles of Advertising	3.0
GRA 908	Cooperative Education	3.0
	Program Electives **	6.0
	Social Science/Humanities Elective	3.0
	Credits	16.0

66.0 Total Semester Hours Required

****Program electives must be selected from the following courses or subjects:**

Courses:

BCA 134 Word Processing 3
 BCA 142 Spreadsheets 3
 BCA 184 Comprehensive Web Page Design Software 3
 BUS 102 Introduction to Business 3
 BUS 121 Business Communications 3
 BUS 130 Introduction to Entrepreneurship 3
 ENG 106 Composition II 3
 GRA 165 Digital 3-D 3
 JOU 110 Introduction to Mass Media
 MKT 140 Principles of Selling 3
 MKT 154 Visual Merchandising 3
 MKT 184 Customer Service 3
 MKT 198 Sports Marketing 3
 MMS 113 Introduction to Media Production 3
 PHI 142 Ethics in Business 3

Subjects:

ART Art
 CIS Computer Programming
 CSC Computer Science

Graphic Communications Diploma

The Graphic Communications Diploma program is designed to provide graduates with knowledge and skills in to begin a career in the Graphic Communications industry, or go on and complete the Associate of Applied Science degree in Graphic Communications. Graduates of this program are awarded a Diploma.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

GRA 104	Introduction to Graphic Communications	3.0
GRA 140	Digital Imaging	3.0
GRA 173	Typography	3.0
SPC 112	Public Speaking OR	
SPC 122	Interpersonal Communication	3.0
	Credits	12.0

Second Semester

GRA 137	Digital Design	3.0
GRA 121	Digital Drawing	3.0
GRA 148	Visual Web Design	3.0
ENG 105	Composition I	3.0
CIS 207	Fundamentals of Web Programming OR	
BCA 155	Introduction to Web Design	3.0
	Credits	15.0

27.0 Total Semester Hours Required

Health and Recreation

The Health and Recreation program of study prepares students to transfer to a four-year institution. The curriculum is designed to aid students in developing philosophical and practical knowledge of recreation and health services. The program will produce graduates who will be prepared for rewarding careers in parks and recreation, coaching, students activities, and wellness programs. Included in this program are tools to obtain a coaching authorization in the state of Iowa. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

PEH 102	*Health		3.0
PEH 142	*First Aid		3.0
ENG 105	Composition I		3.0
PSY 111	Introduction to Psychology		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Credits	15.0	16.0

Second Semester

PEC 101	*Introduction to Coaching OR		
PEC 161	*Sports Officiating		3.0
ENG 106	Composition II		3.0
PEC 230	*Introduction to Sports Medicine		3.0
	Social Science Elective		3.0
	Humanities Elective		3.0
	Credits		15.0

Third Semester

BIO 157	*Human Biology		4.0
PET 240	*Taping and Bracing		2.0
PEH 170	*Principles of Weight Training		3.0
SPC 112	Public Speaking		3.0
	Humanities Electives		6.0
	Credits		18.0

Fourth Semester

PSY 210	Sport and Exercise Psychology		3.0
PET 230	Care and Prevention of Athletic Injuries		3.0
PEC 231	*Theory and Principles of Recreational Sport		3.0
BIO 151	*Nutrition		3.0
SPC 122	Interpersonal Communication		3.0
	Credits		15.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Human Services: Addictive Studies

The Human Services Addictive Studies program of study prepares students to work in the field of chemical dependency counseling. Upon graduation, individuals will have met all the educational requirements to be certified as a Drug and Alcohol Counselor by the Iowa Board of Certification. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
PSY 111	Introduction to Psychology		3.0
HSV 259	*Introduction to Chemical Dependency		3.0
HSV 140	*Social Work and Social Welfare		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Credits	15.0	16.0

Second Semester

ENG 106	Composition II		3.0
SOC 110	Introduction to Sociology		3.0
HSV 225	*Counseling Techniques		3.0
HSV 131	*Fundamentals of Case Management		3.0
	Lab Science Requirement		4.0
	Credits		16.0

Third Semester

SPC 112	Public Speaking		3.0
PSY 121	Developmental Psychology		3.0
HUM 287	*Leadership Development Studies		3.0
HSV 115	*Agency and Community Resources		3.0
HSV 226	*Fundamentals of Family Counseling		3.0
	Credits		15.0

Fourth Semester

PSY 241	*Abnormal Psychology		3.0
HSV 228	*Group Counseling Techniques		3.0
HSV 180	*Ethics for Human Service Professionals		1.0
HSV 802	*Internship		2.0
	Mathematics/Science Elective		3.0
	Philosophy Elective		3.0
	Humanities Elective **		3.0
	Credits		18.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**Recommended Humanities Electives:

FLS 141 Elementary Spanish I 4

LIT 134 Multicultural Literature 3

REL 101 Survey of World Religions 3

Human Services: Generalist

The Human Services Generalist 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
PSY 111	Introduction to Psychology		3.0
HSV 259	*Introduction to Chemical Dependency		3.0
HSV 109	*Introduction to Human Services		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Credits	15.0	16.0

Second Semester

ENG 106	Composition II		3.0
SOC 110	Introduction to Sociology		3.0
HSV 225	*Counseling Techniques		3.0
HSV 131	*Fundamentals of Case Management		3.0
	Lab Science Requirement		4.0
	Credits		16.0

Summer

	Philosophy Elective		3.0
	Credits		3.0

Third Semester

SPC 112	Public Speaking		3.0
PSY 121	Developmental Psychology		3.0
HUM 287	*Leadership Development Studies		3.0
HSV 115	*Agency and Community Resources		3.0
	*Human Services Elective ***		3.0
	Credits		15.0

Fourth Semester

HSV 180	*Ethics for Human Service Professionals		1.0
HSV 802	*Internship		2.0
	Mathematics/Science Elective		3.0
	*Human Services Elective ***		3.0
	Humanities Elective **		3.0
	Social Science Elective		3.0
	Credits		15.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**Recommended Humanities Electives:

FLS 141 Elementary Spanish I 4
LIT 134 Multicultural Literature 3
REL 101 Survey of World Religions 3

***Human Services Electives must be selected from the following:

HSV 190 Youth Care Issues 3
HSV 226 Fundamentals of Family Counseling 3
HSV 228 Group Counseling Theories and Practices 3

Human Services: Pre-Social Work Transfer

The Human Services Pre-Social Work 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 Pre-Social Work curriculum stresses general education coursework. The program listed below is a recommended curriculum. However, students are encouraged to see their 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
PSY 111	Introduction to Psychology		3.0
MAT 121	College Algebra OR		
MAT 157	Statistics		4.0
ECN 120	Principles of Macroeconomics		3.0
HSV 140	*Social Work and Social Welfare		3.0
	Credits		16.0

Second Semester

ENG 106	Composition II		3.0
BIO 112	General Biology I		4.0
SOC 110	Introduction to Sociology		3.0
HSV 225	*Counseling Techniques		3.0
HSV 131	*Fundamentals of Case Management		3.0
	Credits		16.0

Summer

	Philosophy Elective		3.0
	Credits		3.0

Third Semester

SPC 112	Public Speaking		3.0
PSY 121	Developmental Psychology		3.0
HIS 152	U.S. History Since 1877		3.0
HUM 287	*Leadership Development Studies		3.0
HSV 115	*Agency and Community Resources		3.0
	Credits		15.0

Fourth Semester

POL 111	*American National Government		3.0
HSV 228	*Group Counseling Techniques		3.0
HSV 802	*Internship		2.0
	Humanities Elective **		3.0
	Mathematics/Science Elective		3.0
	Credits		14.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**Recommended Humanities Electives:

FLS 141 Elementary Spanish I 4
LIT 134 Multicultural Literature 3
REL 101 Survey of World Religions 3

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

Human Services: Youth Worker

The Human Services Youth Worker program of study prepares students to work with children and adolescents within a variety of settings such as residential treatment centers, group homes, runaway crisis shelters, hospital-based adolescent programs, and in juvenile detention centers. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
PSY 111	Introduction to Psychology		3.0
HSV 259	*Introduction to Chemical Dependency		3.0
HSV 109	*Introduction to Human Services		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Credits	15.0	16.0

Second Semester

ENG 106	Composition II		3.0
SOC 230	*Juvenile Delinquency		3.0
HSV 225	*Counseling Techniques		3.0
HSV 131	*Fundamentals of Case Management		3.0
	Lab Science Requirement		4.0
	Credits		16.0

Summer

	Philosophy Elective		3.0
	Credits		3.0

Third Semester

SPC 112	Public Speaking		3.0
PSY 121	Developmental Psychology		3.0
HUM 287	*Leadership Development Studies		3.0
HSV 115	*Agency and Community Resources		3.0
HSV 190	*Youth Care Issues		3.0
	Credits		15.0

Fourth Semester

PSY 224	*Adolescent Psychology		3.0
HSV 180	*Ethics for Human Service Professionals		1.0
HSV 802	*Internship		2.0
HSV 226	*Fundamentals of Family Counseling OR		
HSV 228	*Group Counseling Techniques		3.0
	Mathematics/Science Elective		3.0
	Humanities Elective **		3.0
	Credits		15.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**Recommended Humanities Electives:

FLS 141 Elementary Spanish I 4
LIT 134 Multicultural Literature 3
REL 101 Survey of World Religions 3

HVAC/R Maintenance Certificate

The HVAC/R Maintenance Certificate 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
HCR 103	Introduction to HVAC/R and Safety		3.0
HCR 201	Applied Practices I: Repair and Service		4.0
HCR 188	Electricity for HVAC/R		4.0
MAT 743	Technical Math		3.0
	Credits		16.0

16.0 Total Semester Hours Required

HVAC/R Technology Diploma

The HVAC/R Technology Diploma 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
HCR 103	Introduction to HVAC/R and Safety		3.0
HCR 201	Applied Practices I: Repair and Service		4.0
HCR 188	Electricity for HVAC/R		4.0
MAT 743	Technical Math		3.0
	Credits		16.0

Second Semester

HCR 208	Boilers and Hydronic Systems		4.0
HCR 301	Applied Practices II: Advanced Repair and Service		3.0
HCR 250	Electronic Controls		3.0
HCR 348	Soldering, Piping, and Fitting		3.0
MGT 130	Principles of Supervision		3.0
	Credits		16.0

Summer

HCR 402	HVAC/R Internship OR		
HCR 401	HVAC/R Capstone		4.0
HCR 458	Alternative Energy Sources		2.0
HCR 448	Applied Practices III: Installation		3.0
	Credits		9.0

41.0 Total Semester Hours Required

Industrial Engineering Technology

The 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 skills in maintaining and troubleshooting electrical and mechanical systems and machinery. The diverse education includes training in welding, electrical, hydraulics, pneumatics, print reading, instrumentation, applied mathematics, critical thinking skills, 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
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

Second Semester

ELT 250	Programmable Logic Controllers		3.0
ELT 251	Programmable Logic Controllers Lab		2.0
MFG 145	Light Machining for Maintenance Trades		4.0
WEL 149	Arc Welding		3.0
WTT 143	Mechanical Power Transmission		3.0
ELE 106	Electrical Blueprint Reading		2.0
	Credits		17.0

Summer

	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
IND 930	Industrial Internship		4.0
	Credits		7.0

Third Semester

IND 187	Predictive Maintenance		2.0
IND 191	Preventative Maintenance		2.0
ELE 155	National Electrical Code I		2.0
ATR 133	Fluid Power Systems		2.0
MFG 211	Basic Machine Theory		2.0
SPC 122	Interpersonal Communication		3.0
	Social Science/Humanities Elective		3.0
	Credits		16.0

Fourth Semester

BUS 280	Fundamentals of Lean Process Improvement		3.0
MFG 190	Metallurgy		2.0
MGT 195	Workplace Empowerment		3.0
CAD 139	Introduction to CAD/CAM		3.0
HCR 208	Boilers and Hydronic Systems **		4.0
LEO 360	Lasers in Manufacturing		3.0
	Credits		18.0

74.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Industrial Maintenance Technician

The Industrial Maintenance Technician program of study provides basic skills in welding, print reading, pneumatics and hydraulics, blue print reading, lean manufacturing, and predictive and preventative maintenance. Students utilize hands-on training to install, maintain, and troubleshoot the equipment utilized by today's industries. 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
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

Second Semester

ELT 250	Programmable Logic Controllers		3.0
ELT 251	Programmable Logic Controllers Lab		2.0
MFG 145	Light Machining for Maintenance Trades		4.0
WEL 149	Arc Welding		3.0
WTT 143	Mechanical Power Transmission		3.0
	Credits		15.0

31.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Industrial Technology Certificate

The Industrial Technology Certificate program of study prepares students to be employed as technicians in the fields of electrical maintenance and production. The program is developed especially for the industry in the development, installation and maintenance of complex industrial processes as well as their electronic, controller, and computer devices. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

ELT 215	Motors and Controls		2.0
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

16.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Literature

The Literature 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 American literature, fiction, poetry, and drama. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

LIT 110	American Literature to Mid 1800s		3.0
CSC 110	Introduction to Computers		3.0
ENG 105	Composition I		3.0
MAT 157	Statistics		4.0
	Social Science Elective		3.0
	Credits		16.0

Second Semester

LIT 111	American Literature since Mid 1800s		3.0
SPC 112	Public Speaking		3.0
ENG 106	Composition II		3.0
	Social Science Elective		3.0
	General Elective		3.0
	Credits		15.0

Third Semester

DRA 101	Introduction to Theatre		3.0
LIT 130	African American Literature OR		
LIT 134	Multicultural Literature OR		
LIT 190	Women Writers		3.0
	Lab Science Requirement		4.0
	Social Science Elective		3.0
	General Elective		3.0
	Credits		16.0

Fourth Semester

SPC 122	Interpersonal Communication		3.0
	Literature Elective		3.0
	Mathematics/Science Elective		3.0
	General Electives		4.0
	Credits		13.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

60.0 Total Semester Hours Required

Must include at least 12 credit hours of Literature courses.

Management & Human Resources

The 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
MGT 130	Principles of Supervision		3.0
MGT 138	Employee Evaluation and Training Techniques		3.0
MGT 175	Introduction to Law for Managers and Supervisors		3.0
MGT 180	Management and Labor Relations		3.0
MGT 170	Human Resource Management		3.0
	Credits		18.0

Second Semester

CSC 110	Introduction to Computers OR		
BCA 212	Introduction to Computer Business Applications		3.0
MGT 190	Employee Compensation and Benefits Management		3.0
ACC 111	Introduction to Accounting OR		
ACC 121	Principles of Accounting I OR		
ACC 122	Principles of Accounting II		3.0
MKT 110	Principles of Marketing		3.0
MAT 711	Business and Financial Mathematics **		3.0
	Credits		15.0

Third Semester

BUS 102	Introduction to Business		3.0
PSY 111	Introduction to Psychology		3.0
ENG 105	Composition I		3.0
BUS 121	Business Communications		3.0
	Social Science/Humanities Elective		3.0
	Credits		15.0

Fourth Semester

BUS 154	E-business		3.0
ACC 311	Computer Accounting		3.0
MGT 165	Principles of Quality		3.0
SPC 122	Interpersonal Communication		3.0
MGT 195	Workplace Empowerment		3.0
MGT 932	Internship ***	3.0	8.0
	Credits	18.0	23.0

66.0 Total Semester Hours Required

**May substitute with MAT 102 or higher.

***A minimum of three credits of internship are required.

Management & Human Resources Certificate

The Management & Human Resources Certificate 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
MGT 130	Principles of Supervision		3.0
MGT 138	Employee Evaluation and Training Techniques		3.0
MGT 175	Introduction to Law for Managers and Supervisors		3.0
MGT 180	Management and Labor Relations		3.0
MGT 170	Human Resource Management		3.0
	Credits		18.0

18.0 Total Semester Hours Required

Management & Human Resources Diploma

The Management & Human Resources Diploma 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
MGT 130	Principles of Supervision		3.0
MGT 138	Employee Evaluation and Training Techniques		3.0
MGT 175	Introduction to Law for Managers and Supervisors		3.0
MGT 180	Management and Labor Relations		3.0
MGT 170	Human Resource Management		3.0
	Credits		18.0

Second Semester

CSC 110	Introduction to Computers OR		
BCA 212	Introduction to Computer Business Applications		3.0
MGT 190	Employee Compensation and Benefits Management		3.0
ACC 111	Introduction to Accounting OR		
ACC 121	Principles of Accounting I OR		
ACC 122	Principles of Accounting II		3.0
MKT 110	Principles of Marketing		3.0
MAT 711	Business and Financial Mathematics *		3.0
	Credits		15.0

33.0 Total Semester Hours Required

*May substitute with MAT 102 or higher.

Marketing

The 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 their management potential through extensive paid internships. 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 140	Principles of Selling		3.0
MKT 154	Visual Merchandising ****		3.0
MKT 163	Merchandising ****		3.0
MKT 185	Marketing Internship I ****		2.0
MKT 191	Seminar I: Career Options ****		1.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Credits		15.0

Second Semester

MGT 170	Human Resource Management		3.0
BUS 130	Introduction to Entrepreneurship		3.0
MKT 150	Principles of Advertising		3.0
BCA 184	Comprehensive Web Page Design Software OR		
	Marketing/Business Elective *		3.0
	General Electives **		6.0
	Credits		18.0

Third Semester

MKT 110	Principles of Marketing		3.0
MKT 184	Customer Service ****		3.0
BUS 154	E-business		3.0
MKT 189	Marketing Internship II ****		2.0
MKT 193	Seminar II: Applications in Management ****		1.0
MKT 165	Retail Management ****		3.0
	A.A.S. Mathematics Requirement (MAT 102 or higher) ***		3.0
	Credits		18.0

Fourth Semester

	Marketing/Business Elective *		3.0
MKT 190	International Marketing		3.0
BUS 121	Business Communications		3.0
MGT 195	Workplace Empowerment		3.0
	Social Science/Humanities Elective		3.0
	Credits		15.0

66.0 Total Semester Hours Required

****Courses offered on a two-year rotation.

***Business and Financial Math recommended.

**Computer science course recommended.

***Marketing/Business Electives must be selected from the following:**

ACC 111 Introduction to Accounting 3
 ACC 121 Principles of Accounting I 3
 ACC 122 Principles of Accounting II 3
 APP 150 Clothing Selection 3
 APP 210 Apparel Textiles 3
 BUS 102 Introduction to Business 3
 MGT 101 Principles of Management 3
 MKT 198 Sports Marketing 3

Marketing Management

The Marketing Management program of study prepares graduates to perform basic marketing functions in industrial, wholesale, retail, and service areas. Students learn the principles of marketing and marketing management, including sales, advertising, communication, business mathematics, and computer skills. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

MKT 140	*Principles of Selling		3.0
MKT 110	*Principles of Marketing		3.0
MGT 101	*Principles of Management		3.0
ENG 105	Composition I		3.0
ECN 120	Principles of Macroeconomics		3.0
	Credits		15.0

Second Semester

MKT 150	*Principles of Advertising		3.0
	*Marketing/Business Elective **		3.0
ECN 130	Principles of Microeconomics		3.0
ENG 106	Composition II		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Credits	15.0	16.0

Third Semester

SPC 112	Public Speaking		3.0
	Mathematics/Science Elective		3.0
	Social Science Elective		3.0
	Humanities Elective		3.0
	Distributed Requirement		3.0
	*Marketing/Business Elective **		3.0
	Credits		18.0

Fourth Semester

MKT 190	*International Marketing		3.0
MGT 170	*Human Resource Management		3.0
	Lab Science Requirement		4.0
	Humanities Electives		6.0
	Credits		16.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

****Marketing/Business Electives must be selected from the following:**

ACC 121 Principles of Accounting I 3
 ACC 122 Principles of Accounting II 3
 BUS 121 Business Communications 3
 BUS 154 E-business 3
 BUS 130 Introduction to Entrepreneurship 3
 MKT 154 Visual Merchandising 3
 MKT 185 Marketing Internship I 2
 MKT 189 Marketing Internship II 2

Mathematics

The Mathematics 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
ENG 105	Composition I		3.0
	*Science Elective with Lab		5.0
	General Elective		3.0
	Credits		16.0

Second Semester

MAT 217	*Calculus II		5.0
ENG 106	Composition II		3.0
	Social Science Elective		3.0
	General Electives		6.0
	Credits		17.0

Third Semester

MAT 220	*Calculus III		5.0
SPC 112	Public Speaking		3.0
	Humanities Elective		3.0
	General Elective		3.0
	Credits		14.0

Fourth Semester

MAT 225	*Differential Equations OR		
MAT 227	*Elementary Differential Equations with Laplace	3.0	4.0
MAT 157	*Statistics		4.0
	Social Science/Humanities Elective		3.0
	General Electives		6.0
	Credits	16.0	17.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Media Studies: Media Production

The Applied Electronic Media Studies: Media Production program of study will focus on all aspects of storytelling as it relates to video production and distribution (i.e. cable, web, and new media applications). The program is highly specialized and allows for students to work in multiple video production platforms found in all media environments today. 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

JOU 110	Introduction to Mass Media		3.0
MMS 113	Introduction to Media Production		3.0
ENG 105	Composition I		3.0
MMS 123	Electronic Media Performance		3.0
BCA 155	Introduction to Web Design		3.0
	Credits		15.0

Second Semester

MMS 114	Media Production II		3.0
	A.A.S. Mathematics Requirement (MAT 102 or higher)		3.0
MMS 134	Media Writing		3.0
MMS 204	New Media Production		3.0
MMS 296	Video Practicum I		1.0
JOU 211	Ethics in the Media		3.0
	Credits		16.0

Third Semester

MMS 231	Advanced Video Production I		3.0
SPC 112	Public Speaking		3.0
MMS 291	Video Cooperative Education		3.0
	Electronic Media Studies Elective **		3.0
MMS 297	Video Practicum II		1.0
	Social Science/Humanities Elective		3.0
	Credits		16.0

Fourth Semester

MMS 150	Electronic News Writing		3.0
MMS 232	Advanced Video Production II		3.0
MMS 301	Video Practicum III		2.0
	Electronic Media Studies Electives **		6.0
MGT 195	Workplace Empowerment		3.0
	Credits		17.0

64.0 Total Semester Hours Required

****Electronic Media Studies electives must be selected from the following:**

Courses:

ART 184 Photography 3
 ART 186 Digital Photography 3
 GRA 140 Digital Imaging 3
 GRA 165 Digital 3-D 3
 MKT 110 Principles of Marketing 3
 MKT 150 Principles of Advertising 3

Subject:

MMS Media Studies

Media Studies: Radio

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 their 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

JOU 110	Introduction to Mass Media		3.0
MMS 105	Audio Production		3.0
MMS 340	Radio Practicum I		1.0
MMS 123	Electronic Media Performance		3.0
SPC 112	Public Speaking		3.0
ENG 105	Composition I		3.0
	Credits		16.0

Second Semester

MMS 341	Radio Practicum II		1.0
MMS 135	Introduction to Copy Writing		3.0
MMS 205	Advanced Audio Production		3.0
MMS 190	Broadcast Promotions		3.0
MMS 260	Electronic Media Sales and Management		3.0
MMS 204	New Media Production		3.0
	Credits		16.0

Third Semester

MMS 342	Radio Practicum III		1.0
MMS 350	Media Sales Practicum		1.0
MMS 223	Advanced Radio Performance		3.0
MMS 202	Social Media Marketing		3.0
PHI 211	Ethics in the Media		3.0
	Program Elective *		3.0
MAT 711	Business and Financial Mathematics		3.0
	Credits		17.0

Fourth Semester

MMS 134	Media Writing		3.0
MMS 261	Programming for the Electronic Media		3.0
MMS 932	Media Studies Internship		3.0
	Program Elective *		3.0
MGT 195	Workplace Empowerment		3.0
	Credits		15.0

64.0 Total Semester Hours Required

**Program electives must be selected from the following:

Courses:

ART 184 Photography 3
 ART 125 Digital Media 3
 MKT 110 Principles of Marketing 3
 MKT 140 Principles of Selling 3
 MUS 305 Introduction to Audio 3
 MUS 306 Digital Audio Production I 3

Subject:

MMS Media Studies

Media Studies: Radio Performance & Production

The Applied Electronic Media Studies: Radio Broadcasting Performance and Production program of study allows students to work with professional radio personnel and learn how to develop the skills needed to move directly into the radio industry after graduation. The program features extensive work in the areas of on-air performance, vocal and personality development, and production. In addition, the program includes general coursework in promotions, sales and management, news writing, maintaining web sites, and programming. Students enhance their 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

JOU 110	Introduction to Mass Media		3.0
MMS 105	Audio Production		3.0
MMS 340	Radio Practicum I		1.0
MMS 123	Electronic Media Performance		3.0
SPC 112	Public Speaking		3.0
ENG 105	Composition I		3.0
	Credits		16.0

Second Semester

MMS 341	Radio Practicum II		1.0
MMS 135	Introduction to Copy Writing		3.0
MMS 205	Advanced Audio Production		3.0
MMS 190	Broadcast Promotions		3.0
	Electronic Media Studies Elective **		3.0
MMS 261	Programming for the Electronic Media		3.0
	Credits		16.0

Third Semester

MMS 342	Radio Practicum III		1.0
MMS 223	Advanced Radio Performance		3.0
BCA 155	Introduction to Web Design		3.0
	Social Science/Humanities Elective		3.0
	Electronic Media Studies Elective **		3.0
	A.A.S. Mathematics Requirement (MAT 102 or higher)		3.0
	Credits		16.0

Fourth Semester

MMS 150	Electronic News Writing OR		
MMS 134	Media Writing		3.0
MMS 343	Radio Practicum IV		1.0
MMS 260	Electronic Media Sales and Management		3.0
MMS 290	Radio Cooperative Education		3.0
	Electronic Media Studies Elective **		3.0
MGT 195	Workplace Empowerment		3.0
	Credits		16.0

64.0 Total Semester Hours Required

**Electronic Media Studies electives must be selected from the following:

Courses:

ART 184 Photography
 ART 186 Digital Photography
 GRA 140 Digital Imaging 3
 JOU 211 Ethics in the Media 3
 MGT 130 Principles of Supervision 3
 MKT 110 Principles of Marketing 3
 MKT 140 Principles of Selling 3
 MUS 305 Introduction to Audio 3
 MUS 306 Digital Audio Production I 3

Subject:

MMS Media Studies

Media Studies: Radio Promotions, Sales & Web

The Applied Electronic Media Studies: Radio Broadcasting Promotions, Sales and Web program of study features extensive coursework in the areas of sales, management, promotions and web design. The program allows students to work with professional radio personnel to enable graduates to move directly into the radio industry. Coursework includes intensive work in sales, marketing, management, promotions and web design. The program also features general coursework in production, radio performance and announcing, and programming. Students enhance their 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

JOU 110	Introduction to Mass Media		3.0
MMS 105	Audio Production		3.0
MMS 340	Radio Practicum I		1.0
MMS 123	Electronic Media Performance		3.0
MKT 140	Principles of Selling		3.0
ENG 105	Composition I		3.0
	Credits		16.0

Second Semester

MMS 135	Introduction to Copy Writing		3.0
MMS 190	Broadcast Promotions		3.0
MMS 261	Programming for the Electronic Media		3.0
MMS 260	Electronic Media Sales and Management		3.0
BCA 155	Introduction to Web Design		3.0
	Credits		15.0

Third Semester

MKT 110	Principles of Marketing		3.0
GRA 140	Digital Imaging		3.0
	Electronic Media Studies Elective **		3.0
JOU 211	Ethics in the Media		3.0
MMS 350	Media Sales Practicum		1.0
	A.A.S. Mathematics Requirement (MAT 102 or higher)		3.0
	Credits		16.0

Fourth Semester

SPC 112	Public Speaking		3.0
MMS 290	Radio Cooperative Education		2.0
	Electronic Media Studies Electives **		6.0
	Social Science/Humanities Elective		3.0
MGT 195	Workplace Empowerment		3.0
	Credits		17.0

64.0 Total Semester Hours Required

**Electronic Media Studies electives must be selected from the following:

Courses:

ART 184 Photography 3
 ART 186 Digital Photography 3
 GRA 165 Digital 3-D 3
 MGT 130 Principles of Supervision 3
 MKT 150 Principles of Advertising 3

Subject:

MMS Media Studies

Media Studies: Radio/Television/Video

The Electronic Media Studies: Radio/Television/Video program of study is designed as a transfer program with basic core courses in all aspects of the broadcast industry. The program coursework contains both strong theoretical and practical applications. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

JOU 110	*Introduction to Mass Media		3.0
MMS 105	*Audio Production		3.0
MMS 113	*Introduction to Media Production		3.0
ENG 105	Composition I		3.0
MMS 123	*Electronic Media Performance		3.0
	Credits		15.0

Second Semester

MMS 135	*Introduction to Copy Writing		3.0
MMS 150	*Electronic News Writing		3.0
ENG 106	Composition II		3.0
	Social Science Elective		3.0
	Mathematics/Science Elective		3.0
	Credits		15.0

Third Semester

SPC 112	*Public Speaking		3.0
	Distributed Requirement		3.0
	Social Science Elective		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Humanities Elective		3.0
	Credits	15.0	16.0

Fourth Semester

MMS 260	*Electronic Media Sales and Management		3.0
	*Electronic Media Studies Elective **		3.0
	Lab Science Requirement		4.0
	Humanities Electives		6.0
	Social Science Elective		3.0
	Credits		19.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

65.0 Total Semester Hours Required

**Electronic Media Studies electives must be selected from the following:

Courses:

BCA 155 Introduction to Web Design 3
 ART 184 Photography 3
 ART 186 Digital Photography 3
 MUS 305 Introduction to Audio Production 3
 MUS 306 Digital Audio Production I 3
 JOU 211 Ethics in Media 3

Subjects:

MMS Media Studies

Media Studies: Sports Media Technology

The 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 their 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
MMS 105	Audio Production		3.0
MMS 123	Electronic Media Performance		3.0
MMS 113	Introduction to Media Production		3.0
JOU 110	Introduction to Mass Media		3.0
MMS 306	Sports Media Practicum I		1.0
	Credits		16.0

Second Semester

MMS 204	New Media Production		3.0
PHI 211	Ethics in the Media		3.0
MMS 152	Spring Sports Announcing		3.0
MMS 205	Advanced Audio Production		3.0
MMS 114	Media Production II		3.0
MMS 307	Sports Media Practicum II		1.0
	Credits		16.0

Third Semester

MMS 146	Sports Information and Copywriting		3.0
MAT 711	Business and Financial Mathematics		3.0
MMS 202	Social Media Marketing		3.0
MMS 107	Sports Field Production		3.0
MMS 231	Advanced Video Production I **		3.0
MMS 308	Sports Media Practicum III		1.0
	Credits		16.0

Fourth Semester

MMS 134	Media Writing		3.0
MGT 195	Workplace Empowerment		3.0
	Electronic Media Studies Elective		3.0
SPC 112	Public Speaking		3.0
MMS 932	Media Studies Internship		3.0
MMS 309	Sports Media Practicum IV		1.0
	Credits		16.0

64.0 Total Semester Hours Required

**Program elective must be selected from the following:

Courses:

ART 184 Photography 3
ART 125 Digital Media 3

Subject:

MMS Media Studies

Media Studies: Television/Video

The 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 their classroom experience through participation in station operations at CBTV-17. 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

JOU 110	Introduction to Mass Media		3.0
MMS 113	Introduction to Media Production		3.0
ENG 105	Composition I		3.0
MMS 123	Electronic Media Performance		3.0
SPC 112	Public Speaking		3.0
	Credits		15.0

Second Semester

MMS 114	Media Production II		3.0
MMS 260	Electronic Media Sales and Management		3.0
MMS 134	Media Writing		3.0
MMS 204	New Media Production		3.0
MMS 296	Video Practicum I		1.0
PHI 211	Ethics in the Media		3.0
	Credits		16.0

Third Semester

MMS 231	Advanced Video Production I		3.0
MAT 711	Business and Financial Mathematics		3.0
ART 125	Digital Media		3.0
MMS 202	Social Media Marketing		3.0
MMS 297	Video Practicum II		1.0
	Program Elective *		3.0
	Credits		16.0

Fourth Semester

MMS 190	Broadcast Promotions		3.0
	Program Elective *		3.0
MMS 232	Advanced Video Production II		3.0
MMS 301	Video Practicum III		2.0
MMS 932	Media Studies Internship		3.0
MGT 195	Workplace Empowerment		3.0
	Credits		17.0

61.0 Total Semester Hours Required

**Program electives must be selected from the following:

Courses:

ART 184 Photography 3
GRA 140 Digital Imaging 3
GRA 165 Digital 3-D 3
MKT 110 Principles of Marketing 3
MKT 150 Principles of Advertising 3

Subject:

MMS Media Studies

Medical Assistant

The Medical Assistant program 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). Graduates of this program are awarded a diploma. The Medical Assistant Program at Iowa Western Community College is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Medical Assistant Education Review Board (MAERB).

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

HSC 128	Anatomy and Physiology for Allied Health Programs		3.0
MAP 123	Administrative Medical Office Procedures		3.0
MAP 353	Clinical Procedures I		4.0
HSC 113	Medical Terminology		2.0
MAP 533	Diseases and Disorders		2.0
	Communications Requirement (ENG 105 or 110)		3.0
SPC 122	Interpersonal Communication		3.0
	Credits		20.0

Second Semester

MAP 215	Medical Laboratory Techniques		4.0
MAP 358	Clinical Procedures II		5.0
MAP 514	Basics of Pharmacology		3.0
MAP 131	Advanced Medical Office Procedures		4.0
	Psychology Elective		3.0
	Credits		19.0

Summer

MAP 612	Medical Assistant Externship		3.0
MAP 601	Medical Assistant Seminar		1.0
	Credits		4.0

43.0 Total Semester Hours Required

Students must earn a grade of “C” or higher in all courses with a MAP prefix in order to graduate.

Medical/Clinical Assistant Certificate

The Medical/Clinical Assistant Certificate program of study prepares individuals, under the supervision of physicians, to provide medical office administrative services and perform clinical duties, including patient intake and care, routine diagnostic and recording procedures, pre-examination and examination assistance, and the administration of first aid. This program includes instruction in basic anatomy and physiology, medical terminology, medical ethics, patient communications, medical office procedures, and clinical diagnostic, testing and treatment procedures. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

BIO 157	Human Biology OR		
HSC 128	Anatomy and Physiology for Allied Health Programs		3.0
HSC 113	Medical Terminology		2.0
MAP 123	Administrative Medical Office Procedures		3.0
MAP 353	Clinical Procedures I		4.0
SPC 122	Interpersonal Communication		3.0
	Communications Requirement (ENG 105 or 110)		3.0
	Credits		18.0

18.0 Total Semester Hours Required

Microbiology Transfer

The Microbiology Transfer program of study provides the student with the first two years of an Iowa State University baccalaureate degree in microbiology. This program meets requirements for the first two years of the Iowa State University microbiology major. Graduates of this program are awarded an Associate of Science (A.S.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
BIO 112	*General Biology I		4.0
CHM 166	*General Chemistry I		5.0
	Social Science Elective		3.0
	Credits		15.0

Second Semester

ENG 106	Composition II		3.0
BIO 113	*General Biology II		4.0
CHM 176	*General Chemistry II		5.0
MAT 157	*Statistics		4.0
PHI 105	Introduction to Ethics		3.0
	Credits		19.0

Third Semester

SPC 112	Public Speaking		3.0
CHM 263	*Organic Chemistry I		5.0
BIO 157	Human Biology		4.0
	Social Science/Humanities Electives		6.0
	Credits		18.0

Fourth Semester

BIO 186	*Microbiology		4.0
CHM 273	*Organic Chemistry II		5.0
	Social Science/Humanities Elective		3.0
	Credits		12.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Music

The Music program of study prepares students to transfer credits to the music programs of four-year colleges and universities. Students majoring in vocal or instrumental music acquire knowledge of sight singing and ear training, music theory and performance. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

MUS 400	*Music in Theory and Practice I		3.0
MUS 410	*Ear Training and Sight Singing I		1.0
MUS 185	*Class Piano I		1.0
	*Applied Voice I OR Instrument I		2.0
	*Ensemble **		1.0
ENG 105	Composition I		3.0
SPC 112	Public Speaking		3.0
	Credits		14.0

Second Semester

MUS 401	*Music in Theory and Practice II		3.0
MUS 411	*Ear Training and Sight Singing II		1.0
MUS 186	*Class Piano II		1.0
	*Applied Voice II OR Instrument II		2.0
	*Ensemble **		1.0
ENG 106	Composition II		3.0
	History Elective		3.0
PSY 121	Developmental Psychology		3.0
	Credits		17.0

Third Semester

MUS 402	*Music in Theory and Practice III		3.0
MUS 412	*Ear Training and Sight Singing III		1.0
MUS 187	*Class Piano III		1.0
	*Applied Voice III OR Instrument III		2.0
	*Ensemble **		1.0
	Lab Science Requirement		4.0
	Mathematics/Science Elective		3.0
	Credits		15.0

Fourth Semester

MUS 403	*Music in Theory and Practice IV		3.0
MUS 413	*Ear Training and Sight Singing IV		1.0
MUS 188	*Class Piano IV		1.0
	*Applied Voice IV OR Instrument IV		2.0
	*Ensemble **		1.0
MAT 157	Statistics		4.0
	Psychology Elective		3.0
	Credits		15.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

61.0 Total Semester Hours Required

****Students must choose one of the following areas of ensemble concentration and take four courses within the same area of concentration:**

Concert Choir

MUS 134 Concert Choir I 1
 MUS 141 Concert Choir II 1
 MUS 142 Concert Choir III 1
 MUS 240 Concert Choir IV 1
 MUS 440 Chamber Choir I 1
 MUS 441 Chamber Choir II 1
 MUS 442 Chamber Choir III 1
 MUS 443 Chamber Choir IV 1

Jazz Ensemble

MUS 124 Instrumental Jazz Ensemble I 1
 MUS 182 Instrumental Jazz Ensemble II 1
 MUS 183 Instrumental Jazz Ensemble III 1
 MUS 184 Instrumental Jazz Ensemble IV 1

Marching/Concert Band

MUS 137 Concert Band I 1
 MUS 370 Marching Band I 1
 MUS 371 Marching Band II 1
 MUS 245 Concert Band II 1

Music: Music Technology

The Music Technology program of study is designed to prepare students for all phases of music, including music theory, sight singing and ear training, keyboard skills, and music performance. In addition to receiving traditional music training, this program will also introduce aspects of live music production and digital audio recording. With this combination of training, students can apply technical music skills to music education or music performance by operating mixing consoles, recording rehearsals and performances, and sequencing and notating music. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

MUS305	*Introduction to Audio		3.0
MUS306	*Digital Audio Production I		3.0
MUS400	*Music in Theory and Practice I		3.0
MUS410	*Ear Training and Sight Singing I		1.0
MUS185	*Class Piano I		1.0
ENG105	Composition I		3.0
SPC112	Public Speaking		3.0
	Credits		17.0

Second Semester

MUS307	*Digital Audio Production II		3.0
MUS401	*Music in Theory and Practice II		3.0
MUS411	*Ear Training and Sight Singing II		1.0
MUS186	*Class Piano II		1.0
ENG106	Composition II		3.0
MAT157	Statistics		4.0
	Credits		15.0

Third Semester

MUS330	*Audio Mixing I		3.0
MUS402	*Music in Theory and Practice III		3.0
MUS412	*Ear Training and Sight Singing III		1.0
MUS187	*Class Piano III		1.0
	Lab Science Requirement		4.0
PSY121	Developmental Psychology		3.0
	Credits		15.0

Fourth Semester

MUS310	*Recording Project I		1.0
MUS403	*Music in Theory and Practice IV		3.0
MUS413	*Ear Training and Sight Singing IV		1.0
MUS188	*Class Piano IV		1.0
	Mathematics/Science Elective		3.0
	Psychology Elective		3.0
	Social Science Elective		3.0
	Credits		15.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

62.0 Total Semester Hours Required

Nursing: Advanced Nursing Assistant Certificate

The Advanced Nursing Assistant Certificate program of study prepares students for entry level positions in healthcare. The curriculum exposes students to processes, vocabulary and an overview of the healthcare field. 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

HSC172	Nurse Aide		3.0
HSC113	Medical Terminology		2.0
PEH130	CPR and First Aid in the Workplace		1.0
MGT195	Workplace Empowerment		3.0
BIO157	Human Biology		4.0
ENG110	Writing For The Workplace OR		
ENG105	Composition I *		3.0
	Credits		16.0

16.0 Total Semester Hours Required

*Students interested in advancing to the Practical or Associate Degree Nursing program should complete these courses.

Nursing: Associate Degree Nursing

The 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 awarded an Associate of Applied Science (A.A.S.) degree and qualified to write the National Council of State Boards of Nursing (NCLEX-RN) examination for registered nurses.

Program Prerequisite: Current, valid CNA Certificate.

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

ENG 105 Composition I 3
 PSY 121 Developmental Psychology 3
 BIO 168 Human Anatomy and Physiology I 4
 BIO 173 Human Anatomy and Physiology II 4

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

PNN 228	Foundations of Nursing I	6.0
PNN 290	Health Assessment Across the Lifespan	2.0
PNN 721	Foundations of Nursing Clinical I	2.0
PNN 201	Introduction to Math and Medications	1.0
SPC 112	Public Speaking	3.0
	Credits	14.0

Second Semester

PNN 229	Foundations of Nursing II	4.0
PNN 723	Foundations of Nursing Clinical II	2.0
PNN 282	Pharmacology II	2.0
PNN 446	Nursing Care of the Growing Family	4.0
BIO 151	Nutrition	3.0
	Credits	15.0

Third Semester

ADN 213	Pharmacology Applications	4.0
ADN 831	Trends and Issues	3.0
ADN 106	Success in Nursing	1.0
PSY 111	Introduction to Psychology	3.0
MGT 195	Workplace Empowerment	3.0
	Credits	14.0

Fourth Semester

ADN 421	Maternal Child Nursing II	3.0
ADN 171	Concepts of Nursing I	5.0
ADN 740	Concepts of Nursing Clinic	3.0
BIO 186	Microbiology	4.0
	Credits	15.0

Fifth Semester

ADN 292	Advanced Mental Health Nursing	2.0
ADN 180	Advanced Concepts of Nursing	4.0
ADN 760	Advanced Concepts of Nursing Clinical	4.0
ADN 499	Passage to Professional Practice	1.0
SOC 110	Introduction to Sociology	3.0
	Credits	14.0

86.0 Total Semester Hours Required

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: Practical Nursing

The 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 awarded a diploma and 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.

Program Prerequisite: Current, valid CNA certificate.

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

ENG 105 Composition I 3
 PSY 121 Developmental Psychology 3
 BIO 168 Human Anatomy and Physiology I 4
 BIO 173 Human Anatomy and Physiology II 4

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

PNN 228	Foundations of Nursing I	6.0
PNN 290	Health Assessment Across the Lifespan	2.0
PNN 721	Foundations of Nursing Clinical I	2.0
SPC 112	Public Speaking	3.0
PNN 201	Introduction to Math and Medications	1.0
	Credits	14.0

Second Semester

PNN 229	Foundations of Nursing II	4.0
PNN 723	Foundations of Nursing Clinical II	2.0
PNN 282	Pharmacology II	2.0
PNN 446	Nursing Care of the Growing Family	4.0
BIO 151	Nutrition	3.0
	Credits	15.0

43.0 Total Semester Hours Required

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.

Photonics System Diploma

The Photonics System diploma 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
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

Second Semester

LEO 360	Lasers in Manufacturing		3.0
LEO 230	Fundamentals of Light and Lasers		5.0
NET 790	PC Support I		3.0
ELT 346	Circuit Analysis II		3.0
ELT 347	Circuit Analysis II Lab		2.0
	Credits		16.0

32.0 Total Semester Hours Required

* May substitute with MAT 102 or higher.

Photonics System Technician

The Photonics System 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 photonics 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
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

Second Semester

LEO 360	Lasers in Manufacturing		3.0
LEO 230	Fundamentals of Light and Lasers		5.0
NET 790	PC Support I		3.0
ELT 346	Circuit Analysis II		3.0
ELT 347	Circuit Analysis II Lab		2.0
	Credits		16.0

Third Semester

LEO 340	Laser Systems and Applications I		5.0
ELT 523	Electronic Devices		4.0
	Communication, Humanities, or Social Science Elective		3.0
	A.A.S. Communications Requirement (ENG 105 or 110)		3.0
	Social Science/Humanities Elective		3.0
	Credits		18.0

Fourth Semester

ELT 432	Telecommunications		4.0
ELT 433	Telecommunications Lab		1.0
ATR 113	Industrial Robotics		3.0
ATR 114	Industrial Robotics Lab		2.0
LEO 450	Laser Systems and Applications II		5.0
MGT 195	Workplace Empowerment		3.0
	Credits		18.0

68.0 Total Semester Hours Required

* May substitute with MAT 102 or higher.

Physical Therapist Assistant

The Physical Therapist Assistant program of study prepares graduates to assume an active role in the provision of physical therapy services under the direction and supervision of a licensed physical therapist. A combination of classroom, laboratory and actual supervised clinical experiences caring for patients is used. Graduates of the program can seek employment in hospitals, outpatient clinics, long-term care facilities or other health related agencies. Graduates are awarded an Associate of Applied Science (A.A.S.) degree. The Physical Therapist Assistant program at Iowa Western Community College is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE), 1111 North Fairfax Street, Alexandria, VA 22314; telephone: 703-706-3245; email: accreditation@apta.org; website: <http://www.capteonline.org>.

Prerequisite: Current, valid American Heart Association Healthcare Provider CPR.

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

BIO 168	Human Anatomy and Physiology I	4.0
ENG 105	Composition I	3.0
MAT 743	Technical Math **	3.0
HSC 113	Medical Terminology	2.0
PTA 102	Introduction to Physical Therapist Assistant	3.0
	Credits	15.0

Second Semester

BIO 173	Human Anatomy and Physiology II	4.0
BIO 211	Pathophysiology	3.0
PSY 111	Introduction to Psychology	3.0
PTA 105	Basic Skills for the Physical Therapist Assistant	3.0
SPC 120	Intercultural Communications	3.0
	Credits	16.0

Third Semester

PTA 107	Documentation for Physical Therapist Assistant	1.0
PTA 181	Therapeutic Modality	3.0
PTA 120	Kinesiology	3.0
PTA 222	Therapeutic Exercise I	3.0
PTA 310	Clinical I	1.0
	Credits	11.0

Fourth Semester

PTA 215	Orthopedic Issues	4.0
PTA 227	Therapeutic Exercise II	3.0
PTA 248	Neurology	4.0
PTA 385	Physical Therapist Assistant Clinical II	3.0
	Credits	14.0

Fifth Semester

MGT 195	Workplace Empowerment	3.0
PTA 412	Physical Therapist Assistant Clinical III	4.0
PTA 414	Physical Therapist Assistant Clinical IV	5.0
PTA 280	Seminar	1.0
	Credits	13.0

69.0 Total Semester Hours Required

**May substitute MAT 121 or higher.

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

Pre-Engineering

The Pre-Engineering 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
ENG 105	Composition I	3.0
CHM 166	*General Chemistry I	5.0
EGR 100	*Engineering Orientation	1.0
EGR 160	*Engineering I	3.0
	Credits	17.0

Second Semester

MAT 217	*Calculus II	5.0
ENG 106	Composition II	3.0
PHY 210	*Classical Physics I	4.0
PHY 211	*Classical Physics I Lab	1.0
EGR 165	*Engineering II	3.0
	Credits	16.0

Third Semester

MAT 227	*Elementary Differential Equations with Laplace	4.0
PHY 220	Classical Physics II	4.0
PHY 221	Classical Physics II Lab	1.0
	Social Science/Humanities Electives **	6.0
	Credits	15.0

Fourth Semester

MAT 220	Calculus III	5.0
SPC 112	Public Speaking	3.0
CHM 176	General Chemistry II	5.0
	Social Science/Humanities Elective **	3.0
	Credits	16.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**Electives should be chosen to match requirements of transfer institutions.

Pre-Law

The Pre-Law University Transfer program of study prepares students for a law career by combining a broad liberal arts education with specific preparation in both law and business. Students may transfer to a four-year university to complete their undergraduate training. Students must complete the curriculum as described and maintain a 3.0 grade point average for 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
SOC 110	*Introduction to Sociology		3.0
POL 111	*American National Government		3.0
BUS 185	*Business Law I		3.0
	Mathematics/Science Elective		3.0
	Credits		15.0

Second Semester

ENG 106	Composition II		3.0
POL 201	*The U.S. Constitution		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	General Elective	8.0	9.0
	Credits	17.0	19.0

Third Semester

CRJ 130	*Criminal Law		3.0
SPC 112	Public Speaking		3.0
	Literature Elective		3.0
	General Elective		3.0
	Humanities Elective		3.0
	Credits		15.0

Fourth Semester

PRL 161	*Family Law		3.0
PSY 111	*Introduction to Psychology		3.0
PRL 115	*Legal Research and Writing		4.0
	Philosophy Elective		3.0
	Lab Science Requirement		4.0
	Credits		17.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Pre-Medicine

The Pre-Medicine program of study is designed for students who are interested in pursuing the medical profession as a career. The Pre-Medicine curriculum emphasizes study in general education coursework especially in the sciences. It represents a generalized plan of study for continuing into the junior year of college as a pre-medicine major. Graduates of this program are awarded an Associate of Science (A.S.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
BIO 151	*Nutrition		3.0
CHM 166	*General Chemistry I		5.0
MAT 211	*Calculus I		5.0
	Credits		16.0

Second Semester

ENG 106	Composition II		3.0
BIO 168	*Human Anatomy and Physiology I		4.0
CHM 176	*General Chemistry II		5.0
SPC 112	Public Speaking		3.0
	Credits		15.0

Third Semester

BIO 173	*Human Anatomy and Physiology II		4.0
CHM 263	*Organic Chemistry I		5.0
PSY 111	*Introduction to Psychology		3.0
PHI 101	Introduction to Philosophy		3.0
	Credits		15.0

Fourth Semester

BIO 186	Microbiology		4.0
CHM 273	*Organic Chemistry II		5.0
PSY 241	Abnormal Psychology		3.0
	Humanities Elective		3.0
SOC 110	Introduction to Sociology		3.0
	Credits		18.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Pre-Occupational Therapy

The Pre-Occupational Therapy program of study is designed for students who plan to transfer to a four-year institution to complete a bachelor's degree in occupational therapy. The curriculum is contoured to meet the requirements generally expected of students majoring in Pre-Occupational Therapy. Graduates of this program are awarded an Associate of Science (A.S.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
BIO 157	*Human Biology		4.0
CHM 166	*General Chemistry I		5.0
PSY 111	*Introduction to Psychology		3.0
	Credits		15.0

Second Semester

ENG 106	Composition II		3.0
BIO 168	*Human Anatomy and Physiology I		4.0
CHM 176	*General Chemistry II		5.0
	General Elective		3.0
	Social Science Elective		3.0
	Credits		18.0

Third Semester

SPC 112	*Public Speaking		3.0
BIO 173	*Human Anatomy and Physiology II		4.0
PSY 241	Abnormal Psychology		3.0
BIO 186	Microbiology		4.0
MAT 157	*Statistics		4.0
	Credits		18.0

Fourth Semester

MAT 121	*College Algebra		4.0
PSY 121	*Developmental Psychology		3.0
PHI 105	Introduction to Ethics		3.0
SOC 110	Introduction to Sociology		3.0
	Credits		13.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Additional Recommended Courses for the Program:

CHM 263 Organic Chemistry I 5
 CSC 110 Introduction to Computers 3
 HIS 110 Western Civilization-Ancient to Early Modern 3
 HIS 111 Western Civilization-Early Modern to Present 3
 PHY 156 General Physics I 4
 PHY 157 General Physics I Lab 1
 SOC 110 Introduction to Sociology 3
 HSC 113 Medical Terminology 2
 BIO 209 Kinesiology 3

Pre-Pharmacy

The Pre-Pharmacy program of study is designed for students who are interested in pursuing pharmacy as a career choice. The curriculum is structured for transfer to institutions with professional schools of pharmacy. Graduates of this program are awarded an Associate of Science (A.S.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
BIO 168	*Human Anatomy and Physiology I		4.0
CHM 166	*General Chemistry I		5.0
MAT 211	*Calculus I		5.0
	Credits		17.0

Second Semester

ENG 106	Composition II		3.0
BIO 173	*Human Anatomy and Physiology II		4.0
CHM 176	*General Chemistry II		5.0
	Humanities Electives		6.0
	Credits		18.0

Third Semester

SPC 112	*Public Speaking		3.0
CHM 263	*Organic Chemistry I		5.0
PSY 111	Introduction to Psychology		3.0
	Social Science Elective		3.0
	Credits		14.0

Fourth Semester

BIO 186	Microbiology		4.0
CHM 273	*Organic Chemistry II		5.0
	Social Science Elective		3.0
	Distributed Requirement		3.0
	Credits		15.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Additional Recommended Courses for the Program:

MAT 157 Statistics 4
 PHY 156 General Physics I 4
 PHY 157 General Physics I Lab 1

Pre-Physical Therapy

The Pre-Physical Therapy program of study is designed for students who plan to pursue a career as a physical therapist. The curriculum is transfer-oriented and is contoured to meet the requirements generally expected of students in their first two years of college. Graduates of this program are awarded an Associate of Science (A.S.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
BIO 157	*Human Biology		4.0
CHM 166	*General Chemistry I		5.0
MAT 121	*College Algebra **		4.0
	Credits		16.0

Second Semester

ENG 106	Composition II		3.0
BIO 168	*Human Anatomy and Physiology I		4.0
CHM 176	*General Chemistry II		5.0
	Social Science/Humanities Electives		6.0
	Credits		18.0

Third Semester

SPC 112	*Public Speaking		3.0
BIO 173	*Human Anatomy and Physiology II		4.0
PSY 121	*Developmental Psychology		3.0
	Distributed Requirement		3.0
	Social Science Elective		3.0
	Credits		16.0

Fourth Semester

BIO 186	*Microbiology		4.0
MAT 157	*Statistics **		4.0
	Humanities Elective		3.0
PSY 111	*Introduction to Psychology		3.0
	Credits		14.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

**May substitute MAT 211 Calculus I for MAT 121 College Algebra and MAT 157 Statistics.

Additional Recommended Courses for the Program:

PHY 156 General Physics I 4
PHY 157 General Physics I Lab 1

Pre-Physician Assistant

The Pre-Physician Assistant program of study is designed for students who plan to pursue a career as a physician assistant. The curriculum is contoured to meet the requirements generally expected of students in their first two years of college. Graduates of this program are awarded an Associate of Science (A.S.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
BIO 157	*Human Biology		4.0
CHM 166	*General Chemistry I		5.0
MAT 121	*College Algebra		4.0
	Credits		16.0

Second Semester

ENG 106	Composition II		3.0
BIO 168	*Human Anatomy and Physiology I		4.0
CHM 176	*General Chemistry II		5.0
	Social Science Elective		3.0
	General Elective		3.0
	Credits		18.0

Third Semester

SPC 112	*Public Speaking		3.0
BIO 173	*Human Anatomy and Physiology II		4.0
PSY 121	*Developmental Psychology		3.0
PSY 241	*Abnormal Psychology		3.0
	Humanities Elective		3.0
	Credits		16.0

Fourth Semester

BIO 186	*Microbiology		4.0
MAT 157	*Statistics		4.0
	Social Science Elective		3.0
	General Elective		3.0
	Credits		14.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Additional Recommended Courses for the Program:

BIO 211 Pathophysiology 3
BIO 209 Kinesiology 3
HSC 113 Medical Terminology 2

Pre-Respiratory Therapy

The Pre-Respiratory Therapy program of study is designed for students who plan to pursue a career as a respiratory therapist. Graduates of this program are awarded an Associate of Science (A.S.) degree.

Recommended Course Sequence

First Semester

MAT 121	*College Algebra OR		
MAT 211	*Calculus I	4.0	5.0
BIO 157	*Human Biology		4.0
CHM 166	*General Chemistry I		5.0
PSY 111	*Introduction to Psychology		3.0
	General Elective		3.0
	Credits	19.0	20.0

Second Semester

ENG 105	Composition I		3.0
BIO 168	*Human Anatomy and Physiology I		4.0
PHY 156	*General Physics I		4.0
PHY 157	*General Physics I Lab		1.0
	Humanities Elective		3.0
	Credits		15.0

Third Semester

ENG 106	Composition II		3.0
SPC 112	*Public Speaking		3.0
BIO 173	*Human Anatomy and Physiology II		4.0
	Social Science Electives		6.0
	Credits		16.0

Fourth Semester

BIO 186	*Microbiology		4.0
	Social Science Elective		3.0
	Humanities Elective		3.0
	General Electives		4.0
	Credits		14.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Additional Recommended Courses for the Program:

BIO 113 General Biology II 4
 CHM 176 General Chemistry II 5
 BIO 211 Pathophysiology 3

Psychology

The Psychology 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
SPC 112	Public Speaking		3.0
PHI 101	Introduction to Philosophy		3.0
PSY 111	Introduction to Psychology		3.0
SOC 110	Introduction to Sociology		3.0
	Credits		15.0

Second Semester

ENG 106	Composition II		3.0
LIT 111	American Literature since Mid 1800s		3.0
PSY 293	Issues in Psychology		3.0
PSY 113	Personality and Adjustment		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	Credits	15.0	16.0

Third Semester

	Humanities Elective		3.0
BIO 112	General Biology I		4.0
PSY 121	Developmental Psychology		3.0
	General Electives		7.0
	Credits		17.0

Fourth Semester

BIO 113	General Biology II		4.0
PSY 241	Abnormal Psychology		3.0
	General Electives		10.0
	Credits		17.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Must include 12 credits from the following:

PSY 111 Introduction to Psychology 3
 PSY 113 Personality and Adjustment 3
 PSY 121 Developmental Psychology 3
 PSY 224 Adolescent Psychology 3
 PSY 241 Abnormal Psychology 3
 PSY 251 Social Psychology 3
 PSY 261 Human Sexuality 3
 PSY 281 Educational Psychology 3
 PSY 293 Issues in Psychology 3

Robotics/Automated Systems Engineering Technology

The Robotics/Automated Systems Engineering Technology program of study prepares students for a technical-level career in robotic automation, design, installation and service. Students learn on and with the same robots, controllers, and programming languages used by automated manufacturing companies. Graduates are trained for entry-level jobs in the ever-expanding robotic automation 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

ELT 215	Motors and Controls	2.0
ELT 331	Circuit Analysis I	4.0
ELT 332	Circuit Analysis I Lab	1.0
IND 109	Equipment Safety and Operation	3.0
IND 117	Industrial Engineering Technology Orientation	3.0
MAT 743	Technical Math *	3.0
	Credits	16.0

Second Semester

ATR 113	Industrial Robotics	3.0
ATR 114	Industrial Robotics Lab	2.0
ELT 250	Programmable Logic Controllers	3.0
ELT 251	Programmable Logic Controllers Lab	2.0
ELT 346	Circuit Analysis II	3.0
ELT 347	Circuit Analysis II Lab	2.0
	Technical Elective	3.0
	Credits	18.0

Summer

ATR 119	Engineering Graphics and Design OR	
EGT 400	PLTW - Introduction to Engineering Design OR	
EGR 400	PLTW - Introduction to Engineering Design OR	
EGR 160	Engineering I	3.0
	A.A.S. Communications Requirement (ENG 105 or 110)	3.0
	Credits	6.0

Third Semester

ATR 124	Application Planning and Layout	3.0
ATR 133	Fluid Power Systems	2.0
ATR 140	Applied Robotics Lab I	6.0
ELT 252	Advanced Programmable Logic Controllers	3.0
ELT 253	Advanced Programmable Logic Controllers Lab	2.0
MGT 195	Workplace Empowerment	3.0
	Credits	19.0

Fourth Semester

ATR 147	Applied Robotics Lab II	6.0
ATR 152	Robot Controller Maintenance	2.0
	Technical Elective **	3.0
	Communication, Humanities, Social Science, Science, or Mathematics Elective	3.0
	Social Science/Humanities Elective	3.0
	Credits	17.0

76.0 Total Semester Hours Required

*May substitute for MAT 102 or higher.

**Technical Electives must be selected from the following:

ATR-170 Robotics/Automated Systems Internship
 CIS 127 Introduction to Programming 3
 CSC 110 Introduction to Computers 3
 EGT 171 Manufacturing Processes 3
 NET 142 Network Essentials 3
 NET 790 PC Support 3
 PHY 210 and 211 Classical Physics I and Classical Physics I Lab 5
 PHY 220 and 221 Classical Physics II and Classical Physics II Lab 5
 WEL 149 Arc Welding 3

Robotics/Automated Systems Technician

The 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
ELT 331	Circuit Analysis I	4.0
ELT 332	Circuit Analysis I Lab	1.0
IND 109	Equipment Safety and Operation	3.0
IND 117	Industrial Engineering Technology Orientation	3.0
MAT 743	Technical Math *	3.0
	Credits	16.0

Second Semester

ATR 113	Industrial Robotics	3.0
ATR 114	Industrial Robotics Lab	2.0
ELT 250	Programmable Logic Controllers	3.0
ELT 251	Programmable Logic Controllers Lab	2.0
ELT 346	Circuit Analysis II	3.0
ELT 347	Circuit Analysis II Lab	2.0
	Technical Elective **	3.0
	Credits	18.0

34.0 Total Semester Hours Required

*May substitute for MAT 102 or higher.

**Technical Elective must be selected from the following:

ATR 113 and 114 Industrial Robotics and Industrial Robotics Lab 5
 CIS 127 Introduction to Programming 3
 CSC 110 Introduction to Computers 3
 EGT 171 Manufacturing Processes 3
 NET 142 Network Essentials 3
 PHY 210 and 211 Classical Physics I and Classical Physics I Lab 5
 PHY 220 and 221 Classical Physics II and Classical Physics II Lab 5
 WEL 149 Arc Welding 3

Social Media Certificate

The Social Media Certificate program of study is designed for professionals in any industry who wish to create social media content and further their 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:

Recommended Course Sequence

First Semester

MKT 110	Principles of Marketing OR		
MMS 190	Broadcast Promotions		3.0
MMS 134	Media Writing OR		
ENG 105	Composition I		3.0
MMS 204	New Media Production		3.0
MMS 202	Social Media Marketing		3.0
MMS 216	Social Media Capstone		4.0
	Credits		16.0

16.0 Total Semester Hours Required

Sociology

The Sociology 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
SOC 110	*Introduction to Sociology		3.0
SPC 112	Public Speaking		3.0
	Humanities Elective		3.0
	Social Science Elective		3.0
	Credits		15.0

Second Semester

ENG 106	Composition II		3.0
SOC 115	Social Problems		3.0
	Mathematics/Science Elective		3.0
	Humanities Elective		3.0
	Social Science Elective		3.0
	Credits		15.0

Third Semester

	Sociology Elective		3.0
	Humanities Elective		3.0
	A.A. Mathematics Requirement (MAT 121-227)	3.0	4.0
	General Electives		7.0
	Credits	16.0	17.0

Fourth Semester

	Sociology Elective		3.0
	Lab Science Requirement		4.0
	General Electives		11.0
	Credits		18.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

64.0 Total Semester Hours Required

Must include 12 credits from the following:

SOC 110 Introduction to Sociology 3
 SOC 115 Social Problems 3
 SOC 120 Marriage and Family 3
 SOC 200 Minority Group Relations 3
 SOC 210 Men, Women and Society 3
 SOC 230 Juvenile Delinquency 3
 SOC 235 Gangs 3
 SOC 240 Criminology 3
 SOC 250 Sociology of Deviance 3

Other Courses Recommended to Meet Program Requirements:

HIS 151 United States History to 1877 3
 HIS 152 United States History since 1877 3
 POL 111 American National Government 3
 POL 112 American State and Local Government 3
 PSY 111 Introduction to Psychology 3
 PSY 241 Abnormal Psychology 3
 PSY 251 Social Psychology 3
 PSY 293 Issues in Psychology 3

Spanish

The Spanish program of study prepares students to transfer to four-year colleges and universities in order to complete undergraduate majors in Spanish or pursue related fields. Students develop the fundamentals of speaking, writing, literature, and culture after successfully completing these courses. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

ENG 105	Composition I		3.0
CSC 110	Introduction to Computers		3.0
FLS 141	*Elementary Spanish I		4.0
MAT 157	Statistics		4.0
	Credits		14.0

Second Semester

ENG 106	Composition II		3.0
FLS 142	*Elementary Spanish II		4.0
SOC 110	Introduction to Sociology		3.0
	Lab Science Requirement		4.0
	Credits		14.0

Third Semester

SOC 200	Minority Group Relations		3.0
FLS 241	*Intermediate Spanish I		4.0
SPC 112	Public Speaking		3.0
	Mathematics/Science Elective		3.0
	General Elective		3.0
	Credits		16.0

Fourth Semester

LIT 134	Multicultural Literature		3.0
FLS 242	*Intermediate Spanish II		4.0
	Social Science Elective		3.0
	General Electives		6.0
	Credits		16.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

60.0 Total Semester Hours Required

Sterile Processing Certificate

The Sterile Processing Certificate program of study prepares graduates to work in health care facility sterile processing departments. Students acquire fundamental knowledge and practical skills in identifying surgical instruments, quality control processes in cleaning and safety, various sterilization techniques and the critical role performed by sterile processing technicians in surgical procedures. Graduates of this program are awarded a certificate and are eligible to write the Surgical Instrument Specialist Certification Exam (CSIS) and the Technician Certification Exam (CSPDT).

Students must complete the curriculum described below:

Recommended Course Sequence

HSC 164	Sterile Processing Techniques		5.0
HSC 167	Sterile Processing Instrumentation		5.0
HSC 113	Medical Terminology		2.0
BIO 157	Human Biology		4.0
	Credits		16.0

16.0 Total Semester Hours Required

Surgical Technology

The 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

First Semester

BIO 168	Human Anatomy and Physiology I		4.0
HSC 167	Sterile Processing Instrumentation		5.0
HSC 113	Medical Terminology		2.0
HSC 164	Sterile Processing Techniques		5.0
	Credits		16.0

Second Semester

PSY 121	Developmental Psychology		3.0
SUR 420	Pharmacology for the Surgical Technologist		2.0
SPC 122	Interpersonal Communication		3.0
BIO 173	Human Anatomy and Physiology II		4.0
ENG 105	Composition I		3.0
SUR 135	Ethics, Legal Issues and Professionalism in Surgical Technology		2.0
	Credits		17.0

Third Semester

SUR 130	Introduction to Surgical Technology		2.0
SUR 141	Introduction to Basic Surgical Principles		6.0
BIO 186	Microbiology		4.0
MGT 195	Workplace Empowerment		3.0
	Credits		15.0

Fourth Semester

SUR 215	Basic Surgical Principles		6.0
SUR 221	Surgical Technology		10.0
	Credits		16.0

Summer

SUR 320	Advanced Surgical Technology		7.0
	Credits		7.0

71.0 Total Semester Hours Required

Students must earn a "C" or higher in all SUR, BIO, and HSC courses in order to graduate.

Sustainable Energy Technology

The Sustainable Energy Technology program of study is designed to provide the skills and knowledge required for entry-level careers in the manufacture, installation and maintenance of renewable energy systems, with a focus on wind and solar energy systems. Students study core aspects of renewable energy technology and choose to focus on either wind or solar technologies. 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
ELT 331	Circuit Analysis I		4.0
ELT 332	Circuit Analysis I Lab		1.0
IND 109	Equipment Safety and Operation		3.0
IND 117	Industrial Engineering Technology Orientation		3.0
MAT 743	Technical Math *		3.0
	Credits		16.0

Second Semester

BUS 280	Fundamentals of Lean Process Improvement		3.0
SER 120	Introduction to Renewable Energy		3.0
SER 130	Introduction to Solar Energy		3.0
SER 135	Introduction to Alternative Fuels		3.0
WTT 103	Introduction to Wind Energy		3.0
WTT 143	Mechanical Power Transmission		3.0
	Credits		18.0

Summer

ENG 105	Composition I OR		
ENG 110	Writing For The Workplace		3.0
	Technical Elective **	2.0	5.0
	Credits	5.0	8.0

Third Semester

SER 118	Introduction to Sustainable Construction		3.0
SER 121	Introduction to Biomass Energy Resources		3.0
SER 145	Geothermal Systems		3.0
SER 190	Advanced Sustainable Energy		3.0
	Social Science/Humanities Elective		3.0
	Credits		15.0

Fourth Semester

MGT 101	Principles of Management		3.0
MGT 195	Workplace Empowerment		3.0
SER 195	Advanced Sustainable Energy II		3.0
	Humanities Elective		3.0
	Technical Elective **	2.0	5.0
	Credits	14.0	17.0

68.0 Total Semester Hours Required

*May substitute for MAT 102 or higher.

**Technical Electives must be selected from the following:

ATR 113 and 114 Industrial Robotics and Industrial Robotics Lab 5
 ELT 250 and 251 Programming Logic Controller and Programming Logic Controller Lab 5
 NET 790 PC Support I 3
 SER 805 Sustainable Energy Internship 2
 SER 905 Sustainable Energy Project 2
 WEL 149 Arc Welding 3

Sustainable Energy Technology Certificate

The Sustainable Energy Technology Certificate program of study is designed to provide the basic skills and knowledge required for entry-level careers in the manufacture, installation and maintenance of renewable energy systems. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

BUS	280	Fundamentals of Lean Process Improvement	3.0
SER	120	Introduction to Renewable Energy	3.0
SER	130	Introduction to Solar Energy	3.0
SER	135	Introduction to Alternative Fuels	3.0
WTT	103	Introduction to Wind Energy	3.0
WTT	143	Mechanical Power Transmission	3.0
		Credits	18.0

18.0 Total Semester Hours Required

Theatre

The Theatre program of study prepares students to transfer to four-year colleges and universities in order to pursue undergraduate majors in theatre, speech or related fields in education. Students who complete the degree have both a sound theoretical background and a varied practical experience in the theatrical arts with an improvement in interpersonal and public performance skills in communication. Graduates of this program are awarded an Associate of Arts (A.A.) degree.

Recommended Course Sequence

First Semester

DRA	101	*Introduction to Theatre	3.0
DRA	165	*Stagecraft	3.0
DRA	130	*Acting I	3.0
DRA	180	*Theatre Lab I	1.0
ENG	105	Composition I	3.0
MAT	157	Statistics	4.0
		Credits	17.0

Second Semester

DRA	132	*Acting II	3.0
DRA	181	*Theatre Lab II	1.0
DRA	179	*Stage Make-Up	3.0
ENG	106	Composition II	3.0
		Social Science Elective	3.0
		Mathematics/Science Elective	3.0
		Credits	16.0

Third Semester

DRA	125	*Introduction to Play Analysis	3.0
DRA	178	*Stage Costume	3.0
DRA	280	*Theatre Lab III	1.0
SPC	112	Public Speaking OR	
SPC	122	Interpersonal Communication	3.0
		Social Science Elective	3.0
		Credits	13.0

Fourth Semester

DRA	930	*Devised Theatre Projects	3.0
DRA	281	*Theatre Lab IV	1.0
		*Theatre Elective	3.0
		Lab Science Requirement	4.0
		Social Science Elective	3.0
		Credits	14.0

One elective must also satisfy the diversity requirement.

*Required courses for the program

60.0 Total Semester Hours Required

****Theatre Electives must be selected from the following:**

DRA 126 Movement for the Actor 3

DRA 154 Theatre Production 3

Veterinary Technology

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.

General Education Courses that must be completed prior to the first semester of Veterinary Technology:

BIO 112 General Biology I 4

Students must complete the curriculum described below:

Recommended Course Sequence

First Semester

AGV 100	Introduction to Veterinary Technology		2.0
AGV 110	Principles of Veterinary Technology I		3.0
AGV 120	Veterinary Medical Terminology		1.0
AGV 122	Principles of Sanitation		3.0
AGV 104	Veterinary Technology Anatomy and Physiology I		3.0
AGV 205	Kennel Management and Animal Care I		1.0
	Credits		13.0

Second Semester

AGV 115	Principles of Veterinary Technology II		3.0
AGV 108	Veterinary Technology Anatomy and Physiology II		3.0
AGV 135	Clinical Pathology Lab Techniques I		3.0
AGV 140	Veterinary Pharmacology		3.0
BIO 186	Microbiology		4.0
AGV 207	Kennel Management and Animal Care II		1.0
	Credits		17.0

Summer

AGV 142	Mathematics for Veterinary Technicians		3.0
AGV 145	Animal Nutrition		3.0
AGV 805	Veterinary Technology Internship I		2.0
ENG 105	Composition I		3.0
	Credits		11.0

Third Semester

AGV 147	Large Animal Care		4.0
AGV 170	Veterinary Anesthesiology		3.0
AGV 136	Clinical Pathology Lab Techniques II		4.0
AGV 150	Office Procedures for Veterinary Technicians		3.0
	Social Science/Humanities Elective **		3.0
AGV 209	Kennel Management and Animal Care III		1.0
	Credits		18.0

Fourth Semester

AGV 149	Avian, Exotic and Lab Animal Care		3.0
AGV 182	Diagnostic Imaging		3.0
AGV 806	Veterinary Technology Internship II		3.0
AGV 185	Veterinary Surgical Assisting		3.0
MGT 195	Workplace Empowerment		3.0
AGV 211	Kennel Management and Animal Care IV		1.0
	Credits		16.0

79.0 Total Semester Hours Required

****Social Science/Humanities Elective must be selected from the following:**

ECN 120 Principles of Macroeconomics 3
 ECN 130 Principles of Microeconomics 3
 PHI 105 Introduction to Ethics 3
 PHI 142 Ethics in Business 3
 PSY 111 Introduction to Psychology 3
 PSY 121 Developmental Psychology 3
 SOC 110 Introduction to Sociology 3
 SOC 120 Marriage and Family 3

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

Welding Certificate

The Welding Certificate prepares students to enter into the industry as beginning production, maintenance, or job shop welders. Students are trained in the latest techniques in fabrication of materials by welding processes. The Welding Certificate is designed to teach fundamental techniques and principles. The pathway also provides for an overview of related topics, such as metallurgy and fabrication, layout, estimating and repair. Graduates of this program are awarded a certificate.

Students must complete the curriculum described below:

Recommended Course Sequence

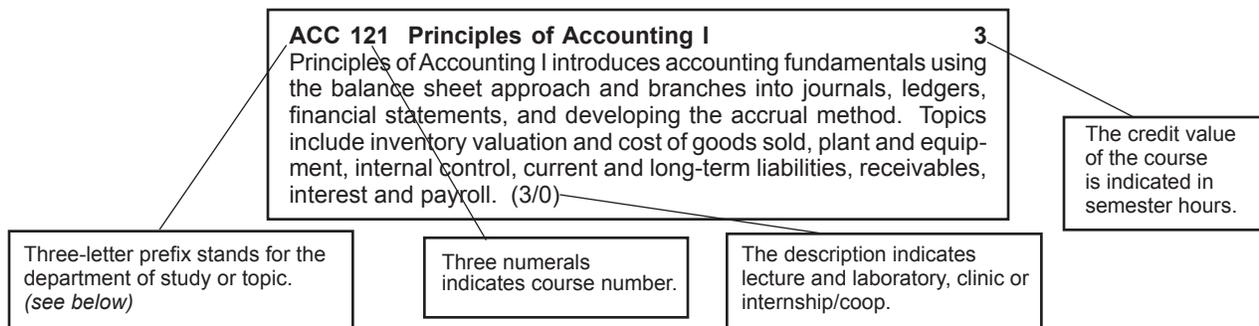
First Semester

WEL 228	Introduction to Welding, Safety, & Health of Workers		1.0
WEL 233	Print Reading & welding Symbol Interpretations		3.0
WEL 149	Arc Welding		3.0
WEL 256	Gas Metal Arc Welding		4.5
WEL 259	Oxy-Acetylene Arc Welding		1.0
WEL 192	Gas Tungsten Arc Welding		4.0
	Credits		16.5

16.5 Total Semester Hours Required

COURSE DESCRIPTIONS

Explanation of Course Catalog Numbering System



<p>Prerequisites: Successful completion of a course or other criteria necessary for a student to succeed in a higher level course.</p>	<p>Co-requisites: Another course that must be taken concurrently with the course.</p>	<p>Recommendation: A course or other criteria desirable for successful performance in another course.</p>
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ACC	Accounting	HCM	Hospitality, Culinary and Management
ADN	Associate Degree Nursing	HCR	HVAC/R Technology
AGA	Agriculture - Agronomy	HIS	History
AGB	Agriculture - Farm Management	HSC	Health Science
AGC	Agriculture - Comprehensive	HSV	Human Services
AGP	Agriculture - Precision Ag	HUM	Humanities
AGS	Agriculture - Animal Science	IND	Industrial Engineering Technology
AGV	Agriculture - Vet Tech	JOU	Journalism
ANT	Anthropology	LEO	Laser Electro-Optics Technology
APP	Apparel Merchandising	LIT	Literature
ART	Art	MAP	Medical Assistant
ATR	Automated Technology and Robotics	MAT	Mathematics
AUT	Automotive Technology	MFG	Manufacturing
AVM	Aviation Maintenance	MGT	Management and Human Resources
BCA	Business Computer Applications	MIL	Military and ROTC
BIO	Biology	MKT	Marketing
BUS	Business	MMS	Mass Media Studies
CAD	Computer-Aided Drafting	MUA	Music - Applied
CHM	Chemistry	MUS	General Music
CIS	Computer Programming	NET	Computer Networking
CLS	Cultural Studies	PEA	Physical Education Activities
CON	Construction Technology	PEC	Coaching Officiating
CRJ	Criminal Justice	PEH	General Physical Education and Health
CSC	Computer Science	PET	Physical Education Training
DEA	Dental Assistant	PEV	Intercollegiate Physical Education
DHY	Dental Hygiene	PHI	Philosophy
DRA	Film and Theatre	PHS	Physical Science
DSL	Diesel	PHY	Physics
ECE	Early Childhood Education	PNN	Practical Nursing
ECN	Economics	POL	Political Science
EDU	Education	PRL	Paralegal Studies
EGR	Engineering	PSY	Psychology
EGT	Engineering Technology	PTA	Physical Therapist Assistant
ELE	Electronics	REL	Religion
ELT	Electrical Technology	SDV	Student Development
ENG	English Composition/Communication	SER	Sustainable Energy Resources
ENV	Environmental Science	SOC	Sociology
ESL	English as a Second Language	SPC	Speech
FIN	Finance	SPT	Special Topics
FIR	Fire Science Technology	SUR	Surgical Technology
FLS	Foreign Language - Spanish	WEL	Welding
GEO	Geography	WTT	Wind Energy and Turbine Technology
GRA	Graphic Communications		

Accounting

ACC 111 Introduction to Accounting 3.0
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. (3/0)

ACC 121 Principles of Accounting I 3.0
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. (3/0)

ACC 122 Principles of Accounting II 3.0
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. (3/0)

Prerequisite: Principles of Accounting I.

ACC 161 Payroll Accounting 3.0
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. (3/0)

Prerequisite: Principles of Accounting I.

ACC 211 Intermediate Accounting I 3.0
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 their related effect on the income statement. (3/0)

Prerequisite: Principles of Accounting II.

ACC 221 Cost Accounting 3.0
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. (3/0)

Prerequisite: Principles of Accounting II.

ACC 251 Governmental and Nonprofit Accounting 3.0
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. (3/0)

Prerequisite: Principles of Accounting I.

ACC 261 Income Tax Accounting 3.0
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. (3/0)

ACC 311 Computer Accounting 3.0
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. (3/0)

Prerequisite: Principles of Accounting I.

ACC 932 Internship 1.0 - 8.0

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 (0/4-32)

Prerequisite: Sophomore standing in the program.

Agribusiness Technology

AGA 115 Principles of Agronomy 4.0

Principles of Agronomy is a lecture/laboratory foundation course in agronomy, applying crop, soil and environmental sciences in understanding agricultural systems in the world. Includes introductory concepts of plant, soil, tillage, pest, environmental and sustainable aspects of crop production. The laboratory portion of the course will consist of hands-on learning experiences via the college lab, field trips and the utilization of interactive computer based programs. (3/2)

AGA 154 Fundamentals of Soil Science 3.0

Fundamentals of Soil Science provides an introduction to physical, chemical and biological properties of soils, their formation, classification, and distribution. Use of soil survey and computer databank information in balancing agronomic, economic, and environmental concerns in soil management are covered. (2/2)

AGA 165 Agricultural Fertilizers and Chemicals 3.0

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. (3/0)

AGA 181 Introduction to Crop Science 3.0

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. (3/0)

AGA 182 Introduction to Soil Science 3.0

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. (3/0)

AGA 212 Grain and Forage Crops 4.0

Grain and Forage Crops trains students in production and management practices for corn, soybean, small grain, and forage crops common to Midwestern agriculture. Laboratory topics emphasize crop management, growth and development, quality, plant characteristics, and pest management. (3/2)

Prerequisite: Principles of Agronomy.

AGA 280 Crop Development, Production, and Management 3.0

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. (3/0)

Prerequisite: Introduction to Crop Science

AGA 284 Pesticide Application Certification 3.0

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. (3/0)

AGA 376 Integrated Pest Management 3.0
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. (2/2)

AGB 211 Agricultural Law, Taxation and Records 3.0
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. (2/2)

AGB 235 Introduction to Agriculture Markets 3.0
Introduction to Horticulture Markets is an overview of the structure, economics, organization, and function of the world food marketing system. Topics in past, present and future domestic and worldwide market issues are discussed. The course examines how the marketing system is influenced by governmental and private policy and the effects those policies have on producers, commodity handlers, processors, middlemen, and consumers. Basic marketing and merchandising strategies are also covered. (3/0)

AGB 330 Farm Business Management 3.0
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. (2/2)

AGB 331 Entrepreneurship in Agriculture 3.0
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. (3/0)

AGB 336 Agricultural Selling 3.0
Agricultural Selling examines the sales record-keeping systems used including territory analysis, point of sale records, accounts receivable, and collection procedures. Sales presentation and merchandising techniques for feed, seed, fertilizer, agricultural chemicals, equipment, and supplies are also covered. (3/0)

AGB 437 Commodity Marketing 3.0
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. (3/0)

AGB 804 Agricultural Internship I 3.0
Agricultural Internship provides Agribusiness Technology students with hands-on training at off-campus work sites. (0/12)

AGB 814 Agricultural Internship II 4.0
Agricultural Internship II consists of practical experience at a workstation off-campus for Agribusiness Technology students. (0/16)

AGC 215 Career Seminar 1.0
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. (1/0)

AGP 333 Precision Farming Systems 3.0
Precision Farming Systems introduces the emerging technologies such as GPS, GIS, and VRT. Students study various systems and applications for precision farming, equipment used, software, legal and social issues, and economic returns. (2/2)

AGP 456 Advanced Technology Applications 3.0
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. (2/2)

AGP 457 Agronomic Applications of Site Specific Management 3.0
Agronomic Applications of Site Specific Management provides detailed study of GPS and VRT systems and how they relate to agriculture. (2/2)

AGS 113 Survey of the Animal Industry 3.0
Survey of the Animal Industry examines ways domestic animals serve the basic needs of humans for food, shelter, protection, fuel, and emotional well-being. Terminology, basic structures of the industries surrounding the production, care, and marketing of domestic animals in the U.S. Includes hands-on learning experiences relative to production and/or companion animals common to the area. (3/0)

AGS 226 Beef Cattle Science 3.0
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. (2/2)

Prerequisite: Survey of the Animal Industry.

Anthropology

ANT 100 Introduction to Anthropology 3.0
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. (3/0)

ANT 105 Cultural Anthropology 3.0
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. (3/0)

Note: Meets diversity requirement for graduation.

Art

ART 101 Art Appreciation 3.0
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. (3/0)

ART 120 2-D Design 3.0
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. (3/0)

ART 123 3-D Design 3.0
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. (3/0)

ART 125 Digital Media 3.0
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. (3/0)

ART 133 Drawing 3.0
Drawing introduces students to basic skills and techniques employed in observational drawing through traditional approaches to line, form, composition, perspective, and value. (3/0)

ART 143 Painting 3.0
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. (3/0)

ART 151 Design I 3.0
Design I introduces students to the organization of visual elements and principles while exploring the creative process of two-dimensional design. Students develop conceptual and technical skills through projects and discussions related to the practice of visual communication. (3/0)

ART 184 Photography 3.0
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. (3/0)

ART 193 Studio Practices II 3.0
Studio Practices II addresses processes needed to successfully transfer to a four-year university and/or transition into the contemporary professional art world. Topics include portfolio development, documenting and marketing work, exhibition opportunities and transfer strategies. Students are expected to develop and complete a substantial body of work in a specific field. This course provides a forum for the critical evaluation of this work and curatorial guidance in preparation for the next stages of students' careers. (3/0)
Prerequisites: A grade of "C" or higher in 2-D Design, 3-D Design, Painting, Digital Media, and Drawing.

ART 196 Studio Practices I 3.0
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. (3/0)
Prerequisites: A Grade of "C" or higher in 2-D Design, 3-D Design, Digital Media, and Drawing.

Automotive

AUT 114 Shop Fundamentals and Minor Service 4.0
Shop Fundamentals and Minor Service is a study of the organizational structure in a dealership/repair facility as it relates to the technician. Students use service manuals, electronic troubleshooting manuals and service bulletins. The course also develops competencies in entry level tasks required when working in a dealership or repair facility. (2/4)

AUT 115 Automotive Shop Safety 1.0
Automotive Shop Safety is designed to prepare the student to work in the auto shop in a safe manner. The content introduces the student to safety equipment, safety rules, and common accidents in the automotive service area. (1/0)

AUT 155 Automotive Engine Design and Systems 2.0
Automotive Engine Design and Systems provides an in-depth study of engine designing, operations, theory, lubrication and cooling systems. Minor diagnosis and repair operations are presented. (1/2)

AUT 163 Automotive Engine Repair 3.0
Automotive Engine Repair covers automotive engine theory and repair. Students receive classroom/lab instruction on the inspection, diagnosis, disassembly, measurement, reconditioning, and assembly of automotive internal combustion engines. (2/2)

AUT 190 Hybrid Fundamentals 2.0
Hybrid Fundamentals familiarizes students with general hybrid history and benefits, basic safety precautions, specific maintenance procedures, location and description of hybrid components for hybrid vehicles. (2/0)

AUT 200 Automotive Automatic Transmissions/Transaxles 3.0
Automotive Automatic Transmissions/Transaxles covers automatic transmission/transaxle theory and repair. Students receive classroom/lab instruction on the inspection, diagnosis, disassembly, reconditioning, and assembly of automatic automotive transmissions/transaxles. Both hydraulic and electronic shift units are covered. (2/2)

AUT 222 Basic Automotive Drive Lines 2.0
Basic Automotive Drive Lines covers principles of operation of clutches, transmissions/transaxles, four-wheel/all-wheel drive systems, drive shafts/half-shafts and final drive assemblies. Minor repairs, on-vehicle service and diagnostic procedures are also covered. (1/2)

AUT 303 Automotive Manual Drive Train and Axles 3.0
Automotive Manual Drive Train and Axles covers manual transmissions/transaxles, transfer case/4WD/AWD systems, and rear axle theory and repair. Students receive classroom/lab instruction on the inspection, diagnosis, disassembly, reconditioning, and assembly of the above components. (2/2)

AUT 404 Automotive Suspension and Steering 4.0
Basic Suspension and Steering provides instruction and hands-on activities on automotive suspension and steering systems and service. Inspection and repair procedures are emphasized and wheel alignment theory and practice is presented. (3/2)

AUT 524 Automotive Brake Systems and Service 4.0
Automotive Brake Systems provides instruction and hands-on activities in automotive braking systems and service. Operation and component information for various types of braking systems are presented and discussed. Anti-lock brakes and traction/stability controls are introduced. (3/2)

AUT 532 Advanced Brakes and Alignment 3.0
Advanced Brakes and Alignment provides instruction and hands-on activities on advanced automotive braking systems, including Anti-lock brakes, traction/stability controls, and four-wheel alignment. Diagnosis, service, and repair procedures are emphasized. (2/2)

AUT 615 Automotive Electricity/Electronics 4.0

Automotive Electricity/Electronics provides instruction and hands-on activities in automotive electrical/electronic systems. Topics include safety, electrical/electronic components and circuits, meter use, starting systems, and charging systems. (3/2)

AUT 652 Advanced Automotive Electricity 3.0

Advanced Automotive Electricity provides advanced instruction and hands-on activities in automotive electrical/electronic systems. Topics include lighting systems, microprocessors, and accessory systems. Equipment introduced includes oscilloscopes and basic scan tools. (2/2)

AUT 653 Advanced Automotive Systems 4.0

Advanced Automotive Systems focuses on advanced automotive technologies such as multiplexing, hybrid power plants and 42-volt systems as well as new technologies as they emerge. The only thing constant in automotive service is change. Hands-on activities focus on diagnosis and service of these technologies. (3/2)

AUT 704 Automotive Heating and Air Conditioning 4.0

Automotive Heating and Air Conditioning provides instruction and hands-on activities on automotive heating and air conditioning theory, systems, components, diagnosis and service. Environmental issues, inspection and repair procedures are emphasized. (3/2)

AUT 842 Automotive Computerized Engine Controls 4.0

Automotive Computerized Engine Controls provides instruction in advanced vehicle tune-up and diagnosis, feedback system principles of operation, diagnosis, and service. Emphasis focuses on analysis of drive ability and performance complaints of both computerized and non computerized fuel systems. Students also learn basic operating principles of computerized ignition systems. (3/2)

AUT 852 Automotive Engine Performance Diagnosis 4.0

Automotive Engine Performance Diagnosis covers advanced drive ability diagnosis as applied to computer-controlled fuel and ignition systems. Advanced chassis electrical and body computers are included. Also covered are an introduction to basic turbocharging and supercharging and their service and maintenance. (3/2)

AUT 878 Automotive Lab III 1.5

Automotive Lab III allows students to build production skills, build confidence in their 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. (0/4.5)

AUT 901 Automotive Internship I 4.0

Automotive 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 meet minimum requirements and complete an application procedure. All internships must be approved by the program chair. (0/16)

Prerequisite: Permission from the instructor.

AUT 903 Automotive Internship II 4.0

Automotive 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 program chair. (0/16)

Prerequisite: Permission from the instructor.

AUT 904 Automotive Internship III 2.0

Automotive Internship III 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 program chair. (0/8)

Prerequisite: Permission from the instructor.

AUT 918 Automotive Lab I 1.5

Automotive Lab I allows students to build production skills and confidence in their 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. (0/4.5)

Prerequisites: Shop Fundamentals and Minor Service and Automotive Shop Safety.

AUT 919 Automotive Lab II 1.5

Automotive Lab II allows students to build production skills and confidence in their 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 Lab I. (0/4.5)

AUT 920 Automotive Lab IV 1.5

Automotive Lab IV allows students to build production skills and confidence in their 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 Lab III (0/4.5)

AUT 921 Automotive Lab V 4.0

Automotive Lab V allows students to build production skills and confidence in their 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 Lab IV. (0/12)

AUT 922 Automotive Lab VI 4.0

Automotive Lab VI allows students to build production skills and confidence in their 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 Lab V. (0/12)

AUT 923 Automotive Lab VII 2.0

Automotive Lab VII allows students to build production skills and confidence in their 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 Lab VI. (0/6)

Aviation

AVM 120 Aviation Mechanics General I 7.0

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. (4.5/7.5)

AVM 140 Aviation Mechanics General II 7.0

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. (4.5/7.5)

AVM 181 Aviation Airframe I 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. (5/7.5)

AVM 182 Aviation Airframe II 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 their components. (5/7.5)

AVM 185 Aviation Airframe III 7.0

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. (4.5/7.5)

AVM 186 Aviation Airframe IV 7.0

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. (4.5/7.5)

AVM 191 Aviation Powerplant I 7.0

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. (4.5/7.5)

AVM 192 Aviation Powerplant II 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 sys-

tems as well as the terminology used in the description and maintenance of the various systems. (5/7.5)

AVM 193 Aviation Powerplant III 8.5

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 their installation. (6.5/6)

AVM 194 Aviation Powerplant IV 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. (5/7.5)

Biological Sciences

BIO 105 Introductory Biology 4.0

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. (3/2)

BIO 112 General Biology I 4.0

General Biology I is designed for science majors. Topics include scientific methodology, the molecular and cellular basis of life; cell division, photosynthesis and respiration; genetics, evolution and ecology; classification and taxonomy. Laboratory work complements each topic of study. (3/3)

Prerequisite: A grade of "C" or higher in high school biology or Introductory Biology.

BIO 113 General Biology II 4.0

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. (3/3)

Prerequisite: A grade of "C" or higher in General Biology I.

BIO 125 Plant Biology 4.0

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. (3/2)

BIO 151 Nutrition 3.0

Nutrition is the study of basic nutrients and their 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. (3/0)

BIO 157 Human Biology 4.0

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. (3/2)

BIO 168 Human Anatomy and Physiology I 4.0

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 are the skin and integumentary system, the skeletal and muscular systems, the nervous system, and the special senses. Laboratory work complements each topic of study. (3/3)

Prerequisite: A grade of "C" or higher in 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

Human Anatomy and Physiology II is a continuation of Human Anatomy and Physiology I. The following organ systems are covered: endocrine system, blood and the cardiovascular system, the lymphatic system and immunity, the respiratory system, the urinary system, the digestive system including nutrition and metabolism, and the reproductive systems. Other topics included are 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. (3/3)

Prerequisite: A grade of "C" or higher in Human Anatomy and Physiology I.

BIO 186 Microbiology 4.0

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. (3/3)

Prerequisite: A grade of "C" or higher in Human Anatomy and Physiology I, General Biology I, or General Chemistry I.

BIO 209 Kinesiology 3.0

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. (2/2/0)

Prerequisite: A grade of "C" or higher in Human Anatomy and Physiology I.

Co-requisite: Human Anatomy and Physiology II.

BIO 211 Pathophysiology 3.0

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. (3/0/0)

Prerequisites: A grade of "C" or higher in Human Anatomy and Physiology I.

Prerequisite/Co-requisite: Human Anatomy and Physiology II.

BIO 272 Biomass to Bioenergy 4.0

Biomass to Bioenergy is an introductory-level biotechnology course emphasizing plant and crop-based resources for the production of biobased products including renewable biofuels. This course is designed to familiarize students with many bioprocessing principles. Topics include biology, microbiology, chemistry, biochemistry. An introductory exploration of agricultural and industrial practices together with the global impact of bioprocessing will be examined. Laboratory work complements each topic of study. (3/3)

BIO 908 Cooperative Education 1.0 - 6.0

Cooperative Education provides cooperative work experience related to the sciences. Work experience hours are arranged. (0/4-24)

BIO 927 Honors Study 2.0

Honors Study explores current scientific topics. In addition to other projects, students research, write, and present a biology review paper. (2/0)

Prerequisite: Nomination by the science faculty and approval of the dean.

Business Administration

BUS 102 Introduction to Business 3.0

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. (3/0)

BUS 105 Accounting and Business Professional Development 1.0

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. (1/0)

Note: This course is offered on a pass/fail basis only.

BUS 121 Business Communications 3.0

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. (3/0)

BUS 130 Introduction to Entrepreneurship 3.0

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. (3/0)

BUS 154 E-business 3.0

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. (3/0)

BUS 161 Human Relations 3.0

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. (3/0)

BUS 185 Business Law I 3.0

Business Law I concentrates on the foundation of business transactions, contracts, and sales. Emphasis focuses on the Uniform Commercial Code where relevant. (3/0)

BUS 186 Business Law II 3.0

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. (3/0)

BUS 280 Fundamentals of Lean Process Improvement 3.0

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. (3/0)

BUS 908 Cooperative Education 1.0 - 6.0

Cooperative Education draws correlation between theory and practice in the student's area of specialization. Variable credit is granted, depending on individual circumstances. (0/4-24)

Prerequisite: Permission from the instructor.

FIN 121 Personal Finance 3.0

Personal Finance provides individuals with the necessary knowledge and ability to comprehend their 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. (3/0)

Business Computer Applications

BCA 115 Internet Basics 1.0

Internet Basics is designed to provide introductory information on the Internet, terminology, use of search engines, e-mail capabilities, e-mail functions, and basic web page updating. (1/0)

BCA 129 Basic Word Processing 2.0

Basic Word Processing uses Microsoft Word to create, manipulate, and print business documents on a microcomputer. Memorandums, letters, envelopes, and reports are covered. (1/3)

BCA 130 Advanced Word Processing 2.0

Advanced Word Processing covers advanced concepts and skill development using Word to format, layout, and design quality documents. (1/3)

Prerequisite: Basic Word Processing.

BCA 134 Word Processing 3.0

Word Processing introduces features such as headers/footers, footnotes/endnotes, mail merge, macros, filing techniques, and complex formatting tasks. Students should have some prior word processing experience. (3/0)

Prerequisites: Introduction to Computers and demonstrated typing proficiency.

BCA 142 Spreadsheets 3.0

Spreadsheets provides the skills needed for solving business problems using Microsoft Excel software. Students prepare, format, enhance, and insert formulas in a spreadsheet as well as maintain and enhance workbooks which includes moving data within and between workbooks, creating and customizing charts, and working with Web pages. Advanced formatting techniques are used to enhance worksheets, to work with templates and workbooks, include linking and sharing, using advanced functions, and working with lists. (3/0)

BCA 149 Spreadsheets II 1.0

Spreadsheets II deals with maintaining workbooks, applying styles and comments, and using templates to create business documents such as invoices. Students create, edit, size, move, delete, and customize chart elements in Excel. Additional instruction includes enhancing the visual appeal to workbooks, saving as Web pages, and inserting hyperlinks. (1/0)

Prerequisite: Spreadsheets or Introduction to Computers.

BCA 152 Comprehensive Spreadsheets 3.0

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. (3/0)

Prerequisite: Introduction to Computers.

BCA 153 Spreadsheets III 1.0

Spreadsheets III uses advanced formatting techniques, applies custom and conditional formatting, and works with large worksheets. Working with and creating templates for business, linking worksheets and workbooks, and sharing workbooks are also covered. Students use advanced functions and analysis tools, and work with lists to store, manipulate, share, and export data. Recording and editing macros, auditing workbooks, collaborating with workgroups, and importing and exporting data are also covered. (1/0)

Prerequisite: Spreadsheets II.

BCA 155 Introduction to Web Design 3.0

Introduction to Web Design is an introductory web design course for non-computer majors. Students will participate in basic webpage and website design including updating of existing webpages and websites. Students will study the process to build their own website for free-lance and/or entrepreneurial purposes. Images, HTML code, and writing content for the web and copyright laws will also be covered. (3/0)

BCA 184 Comprehensive Web Page Design Software 3.0

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. (3/0)

BCA 212 Introduction to Computer Business Applications 3.0

Introduction to Computer Business Applications provides students an overview of computer hardware and software as business productivity tools. The course includes a hands-on introduction to the computer operating system, e-mail, internet, word processing, spreadsheet, database and presentation applications. (3/0)

BCA 250 Desktop Publishing 3.0

Desktop Publishing provides a hands-on introduction to the microcomputer hardware and software used to perform electronic page layout. Students create, modify, and manipulate fliers, brochures and newsletters with page layout and drawing programs. Students should have some prior knowledge or experience with a word processor and familiarity with the keyboard. (3/0)

Chemistry

CHM 122 Introduction to General Chemistry 4.0

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. (3/3)

Prerequisite: Math placement, or a grade of "C" or higher in Intermediate Algebra.

CHM 132 Introduction to Organic and Biochemistry 4.0

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. (3/3)

Prerequisite: 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

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. (3/4)

Prerequisites: 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: Math placement, or a grade of "C" or higher in Intermediate Algebra.

CHM 176 General Chemistry II 5.0

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. (3/4)

Prerequisite: A grade of "C" or higher in General Chemistry I.

CHM 263 Organic Chemistry I **5.0**
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. (3/4)
Prerequisite: General Chemistry II.

CHM 273 Organic Chemistry II **5.0**
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. (3/4)
Prerequisite: Organic Chemistry I.

Computer-Aided Drafting

CAD 129 CAD I **3.0**
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. (2/2)
Prerequisite/Co-Requisite: Introduction to PLM

CAD 139 Introduction to CAD/CAM **3.0**
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. (3/0)

CAD 197 CAD 3D-NX **4.0**
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. (3/2)
Prerequisite: CAD I.

CAD 203 Principles of Design **3.0**
Principles of Design emphasizes further development of geometric dimensioning and tolerancing techniques and the application of tolerances for functionality and manufacturability. Students use Solid Edge® to create solid models, detail, and assembly drawings suitable for manufacturing production. (2/2)
Prerequisite: CAD 3D-NX

CAD 222 Advanced CAD 3D-NX **3.0**
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. (3/0)
Prerequisite: CAD 3D-NX

CAD 236 Design Problems **6.0**
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. (3/6)
Prerequisite: Strength of Materials.

CAD 238 Design Communications **3.0**
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. (2/2)
Prerequisite: CAD 3D-NX.

CAD 933 Design Technology Internship **6.0**
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. (0/24)
Prerequisites: A grade of "C" or higher in all first-year Design Technology courses and Precalculus, and permission from the instructor.

Computer Networking

NET 142 Network Essentials **3.0**
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. (3/0)

NET 213 Cisco Networking **3.0**
Cisco Networking 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. By the end of the course, students will be able to build simple LANs, perform basic configurations for routers and switches, and implement IP addressing schemes. (3/0)

NET 225 Routing & Switching Essentials **3.0**
Routing and Switching Essentials describes the architecture, components, and operations of routers and switches in a small network. Students learn how to configure a router and a switch for basic functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with RIPv1, RIPv2, and single-area and multi-area OSPF, virtual LANS, and inter-VLAN routing in both IPv4 and IPv6 networks. (3/0)
Prerequisite: Cisco Networking.

NET 226 Scaling Networks **3.0**
Scaling Networks describes the architecture, components, and operations of routers and complex switches in a larger and more complex network. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement DHCP and DNS operations in a network. (3/0)
Prerequisite: Routing & Switching Essentials.

NET 227 Connecting Networks **3.0**
Connecting Networks discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students will also develop the knowledge and skills needed to implement IPSec and virtual private network operations in a complex network. (3/0)
Prerequisite: Scaling Networks.

- NET 313 Windows Server 3.0**
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. (3/0)
Prerequisite: Operating Systems.
- NET 343 Windows Directory Services 3.0**
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). (3/0)
Prerequisite: Windows Server.
- NET 363 Windows Directory Services Design 3.0**
Windows Directory Services Design provides the knowledge and skills necessary to design a directory services infrastructure based upon the needs of a large organization. The skills necessary to design security frameworks for small, medium and large networks are also covered. (3/0)
Prerequisite: Windows Directory Services.
- NET 402 LINUX Network Administration 3.0**
LINUX Network Administration involves a study of an operating system used on a variety of hardware platforms. Topics examine file manipulation, access commands and script language commands. Students learn fundamental command line features of the LINUX environment including file system navigation, file permissions, the vi text editor, command shells, and basic network use. This course covers the basic installation and administration of the LINUX operating system. (2/2)
- NET 412 LINUX System Administration 3.0**
LINUX System Administration introduces the techniques necessary to create and manage users, groups and computers that make up a LINUX network. Students will install and configure a LINUX system and will set up systems, applications and user configuration files. Network configuration files and integrating a LINUX network in a mixed environment are an integral part of the course. (2/2)
Prerequisite: LINUX Network Administration.
- NET 418 LINUX Administration 3.0**
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. (3/0)
Prerequisite: Operating Systems.
- NET 478 Information Storage and Management 3.0**
Information Storage and Management provides students with the background to learn how to manage advanced storage systems, protocols, and architectures, including Storage Area Networks (SAN), Network-Attached Storage (NAS), Fibre Channel Networks, Internet Protocol SANs (IPSAN), iSCSI, and Content-Addressable Storage (CAS). (3/0)
Prerequisite: PC Support I.
- NET 495 Virtual Infrastructure 3.0**
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. (3/0)
Prerequisite: Information Storage and Management.
- NET 612 Fundamentals of Network Security 3.0**
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. (3/0)
Prerequisite: Operating Systems.

- NET 730 Investigations 3.0**
Investigations prepares students in detecting and analyzing data stored or hidden on computer systems. Students will be introduced to the techniques and tools of computer forensic investigations. (3/0)
Prerequisites: Fundamentals of Network Security and PC Support II.
- NET 779 Desktop Application Support 3.0**
Desktop Application Support includes the installation and support of desktop applications on computers in a work environment. Students will gain additional experience through participating in a help desk. (2/2)
- NET 785 Fundamentals of Desktop Support 3.0**
Fundamentals of Desktop Support introduces the concepts of supporting computers and computer users as a career. Students improve their 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. (3/0)
- NET 790 PC Support I 3.0**
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. (3/0)
- NET 791 PC Support II 3.0**
PC Support II is the second in a sequence of two courses focusing on computer software. The course introduces software issues necessary for an entry-level computer technician. Students learn to troubleshoot, repair, upgrade, and maintain PC software. (2/2)
- NET 795 Desktop Support Practicum 1.0**
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. (0/4)
Co-requisite: Fundamentals of Desktop Support.
- NET 810 Computer Internship 1.0 - 8.0**
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. (0/4 32)
Prerequisite: Permission from the instructor.

Computer Programming

- CIS 121 Introduction to Programming Logic 3.0**
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. (3/0)
- CIS 127 Introduction to Programming 3.0**
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. (3/0)
- CIS 134 Web Design 3.0**
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. (3/0)
Prerequisite: Fundamentals of Web Programming.

CIS 139 Programming I 3.0

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. (3/0)

Prerequisite: Introduction to Programming or Java.

CIS 144 Programming II 3.0

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: Programming I.

CIS 151 Programming III 3.0

Programming III covers the development of mobile-based applications for different mobile devices, as well as the web technologies (HTML5, CSS3, and JavaScript) needed to create mobile web applications. Students will create and consume web services. (3/0)

Prerequisite: Programming II.

CIS 158 Web e-Business 3.0

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. (3/0)

Prerequisites: Programming II and Server Side Web Programming.

CIS 161 C++ 3.0

C++ builds on the basic C programming language to introduce the concepts of object-oriented programming. Students construct programs using classes, abstraction, inheritance, and polymorphism. Students must complete a set of programs. (3/0)

CIS 164 Advanced C++ 3.0

Advanced C++ continues C++ Programming. It employs object-oriented software engineering techniques to design and implement programs using arrays, structures, files, lists, matrices, trees, and objects to represent real-world situations. The techniques include dynamic memory allocation and recursion. (3/0)

Prerequisite: C++ Programming.

CIS 171 Java 3.0

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. (3/0)

CIS 175 Java II 3.0

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. (3/0)

Prerequisite: Java.

CIS 187 ASP.NET MVC with C# 3.0

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. (3/0)

Prerequisite: Programming II.

CIS 207 Fundamentals of Web Programming 3.0

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. (3/0)

CIS 213 Advanced Client Side Scripting 3.0

Advanced Client Side Scripting teaches current technologies for scripting the web client. Students will create scripts, dashboards and widgets. (3/0)

Prerequisite: Fundamentals of Web Programming.

CIS 215 Server Side Web Programming 3.0

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. (3/0)

Prerequisites: Advanced Client Side Scripting and Web Design.

CIS 227 Advanced Web Design 3.0

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. (3/0)

Prerequisites: Advanced Client Side Scripting and Web Design.

CIS 332 Database and SQL 3.0

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). (3/0)

Prerequisite: Introduction to Information Technology or Introduction to Computers.

CIS 402 Cobol 3.0

Cobol introduces the COBOL language through the study of elementary terminology, program format, and language syntax. Programming problems emphasize elementary input-output techniques involving data definition, data movement, beginning arithmetic, and branching verbs. The course includes an introduction to structured program design. (3/0)

Prerequisite: C++.

CIS 504 Structured Systems Analysis 3.0

Structured Systems Analysis studies the phases of investigation, analysis, design, development, implementation, and maintenance of systems. It includes the system development life cycle and the purposes of management presentations, programming specification, and documentation. Students develop techniques through case study applications. (3/0)

Prerequisite: Introduction to Information Technology or Network Essentials.

CIS 606 Visual BASIC.NET I 3.0

Visual BASIC.NET I introduces Windows and Web programming using Microsoft's .NET (dot net) framework. Students write introductory level programs involving variables, assignment, input, and output using a graphical user interface (GUI), calculation, repetition, and selection between alternatives using the .NET environment. This course includes the object-oriented concepts of encapsulation, single inheritance, and polymorphism. (3/0)

CIS 607 Visual BASIC.NET II 3.0

Visual BASIC.NET II presents Windows programming using distributed database and client-server methodologies. Students write programs involving network and applications, distributed objects, and class structures for the Windows operating system and enabled applications. (3/0)

Prerequisite: Visual BASIC.NET I.

CIS 780 Computer Projects 3.0 - 6.0

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. (2-4/2-4)

Prerequisite: Permission from the instructor.

Computer Science

CSC 110 Introduction to Computers 3.0

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. (3/0)

CSC 114 Introduction to Information Technology 3.0

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. (3/0)

CSC 121 Operating Systems 3.0

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. (3/0)

CSC 190 Game Programming 2-D 3.0

Game Programming 2-D provides hands-on experience to create simple two-dimensional games utilizing C++ and the Windows environment. Students will use current programmable graphic objects and sound to create several simple games. (3/0)

Prerequisite: Advanced C++.

CSC 192 Flash Animation 3.0

Flash Animation will provide hands-on experience necessary to create Flash animation for the World Wide Web and game creation. Students will create objects and animation scripts. Some programming is required. (3/0)

Prerequisite: Fundamentals of Web Programming.

CSC 194 Computer Game Creation 3.0

Computer Game Creation will provide hands-on experience necessary to create computer games utilizing game development tools that require no programming. Students will install and use various game development tools while working with pictures and animation. (3/0)

Construction Technology

CON 114 Residential Print Reading 3.0

Residential Print Reading presents an introduction to the fundamentals of drafting and blueprint reading applicable to residential construction. Students interpret and translate working drawings and specifications. (3/0)

CON 115 Commercial Print Reading 3.0

Commercial Print Reading provides advanced skills in the interpretation of blueprints and construction drawings. Students interpret and translate working drawings and specifications for commercial construction. (3/0)

CON 118 Introduction to Sustainable Construction 3.0

Introduction to Sustainable Construction provides students with a working knowledge of sustainable systems and their impact on the construction industry. Students study sustainable principles, materials, methods, and their impact on the environment. (3/0)

CON 119 Construction Materials and Inspection 3.0

Construction Materials and Inspection deals with 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. (3/0)

CON 170 Building Construction Techniques I 6.0

Building Construction Techniques I provides the practical application of selected construction techniques. It covers preparation and flat concrete work as well as fundamentals of block laying and brick laying techniques as they relate to basic construction. (0/18)

CON 171 Building Construction Techniques II 6.0

Building Construction Techniques II provides practical application of selected building techniques. Students learn construction techniques in floor, wall and ceiling systems, stair construction and interior finishing skills. (0/18)

CON 180 Principles of Building Construction I 3.0

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. (3/0)

CON 181 Principles of Building Construction II 3.0

Principles of Building Construction II provides fundamental theory of selected construction techniques. It explains floor systems, wall and ceiling framing, stair construction, and interior finishing techniques. (3/0)

CON 244 Related Trade Applications 3.0

Related Trade Applications presents an introduction to the principles of residential wiring, heating, air conditioning, and plumbing. This course addresses basic theory, related codes, techniques, and applications. (3/0)

CON 250 Principles of Commercial Construction I 3.0

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. (3/0)

CON 251 Commercial Construction Techniques I 6.0

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. (0/18)

CON 253 Principles of Commercial Construction II 3.0

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. (3/0)

CON 254 Commercial Construction Techniques II 6.0

Commercial Construction Techniques II provides practical applications of selected commercial construction techniques. Students learn construction techniques in superstructure construction, exterior finishes, and roofing components. (0/18)

CON 325 Estimating 3.0

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. (3/0)

CON 348 Supervision and Leadership in Building Construction 3.0

Supervision and Leadership in Building Construction provides skills needed by professional contractors/carpenters. Students participate in eight seminar-style projects conducted by industry professionals. (3/0)

CON 425 Internship 4.0

Internship allows students to obtain building trades skills, training at an off-campus construction site. Students practice and acquire fundamental techniques and additional skills. Program chair approval is required. (0/16)

Prerequisite: Building Construction Techniques II.

Criminal Justice

CRJ 100 Introduction to Criminal Justice 3.0

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. (3/0)

CRJ 111 Police and Society 3.0

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. (3/0)

CRJ 120 Introduction to Corrections 3.0

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. (3/0)

CRJ 130 Criminal Law 3.0

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 sodomy. Students also examine defenses against prosecution, such as insanity and entrapment. (3/0)

CRJ 133 Constitutional Criminal Procedure 3.0

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. (3/0)

CRJ 142 Criminalistics 3.0

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. (3/0)

Prerequisite: Introduction to Forensic Investigation.

CRJ 160 Introduction to Forensic Investigation 3.0

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. (3/0)

CRJ 240 Criminal Investigation 3.0

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. (3/0)

Prerequisite: Introduction to Criminal Justice.

CRJ 258 Ethical Issues in Criminal Justice 3.0

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. (3/0)

Prerequisite: Introduction to Criminal Justice.

CRJ 260 Medicolegal Death Investigation 3.0

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. (3/0)

Prerequisites: Introduction to Forensic Investigation and Criminalistics.

CRJ 290 Criminal Justice Cooperative Education 3.0

Criminal Justice Cooperative Education provides cooperative work experience related to criminal justice. Work experience hours are arranged. (0/4-24)

Prerequisite: Permission from the instructor.

CRJ 291 Forensic Investigation Cooperative Education 3.0

Forensic Investigation Cooperative Education provides students with work experience related to their career goals. Cooperative Education hours are arranged. (0/4-24)

Prerequisite: Permission from the instructor.

Culinary Arts, Restaurant and Hospitality Management

HCM 100 Sanitation and Safety 2.0

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. (2/0)

HCM 111 Principles of Baking I 2.0

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. (2/0)

HCM 112 Principles of Baking II 2.0

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. (2/0)

Prerequisites: Principles of Baking I and Sanitation and Safety.

HCM 113 Culinary Baking 1.0

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. (0/3)

HCM 121 Culinary Baking II 1.0

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. (0/3)

Prerequisites: Culinary Baking, Principles of Baking I, and Safety and Sanitation.

HCM 176 World Cuisine 2.0

World Cuisine studies various ethnic cuisines of the world, their cultures, and their histories. Emphasis is on current trends and applications as students gain hands on experience. (2/0)

- HCM 186 Culinary Foundations I** 3.0
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. (3/0)
- HCM 187 Culinary Foundations II** 3.0
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. (3/0)
Prerequisites: Culinary Foundations I and Sanitation and Safety.
- HCM 191 Quantity Food Production I Lab** 4.0
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. (0/12)
- HCM 192 Quantity Food Production II Lab** 4.0
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. (0/12)
Prerequisites: Quantity Food Production I Lab and Sanitation and Safety.
- HCM 197 Regional Wine History** 2.0
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 their respective food strategies. Students gain knowledge in fundamental wine opening and serving techniques, learn to classify wines according to type, and recognize their 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. (2/0)
- HCM 200 Dining Service** 2.0
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. (1/3)
- HCM 214 Culinary Media/Networking** 3.0
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. (3/0)
- HCM 216 Pastries** 1.0
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. (0/3)
- HCM 217 Artisan Breads** 1.0
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 their proficiency in meeting production deadlines with quality products. (0/3)
- HCM 218 Cakes** 1.0
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. (0/3)

- HCM 219 International Breads** 1.0
International Breads examines the evaluation of bread and yeast products with their adaptability in world cuisine. Students prepare an assortment of bread products from around the world, including flatbreads, classic French baguettes, and European rye. (0/3)

- HCM 220 Chocolate and Sugar** 1.0
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. (0/3)

- HCM 221 Cake Decorating** 1.0
Cake Decorating introduces students to advanced decorating techniques. Students refine their skills with a variety of icings including butter cream, royal icing, and fondant. (0/3)

- HCM 222 Convenience Foods** 1.0
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. (0/3)

- HCM 223 Laminated Doughs** 1.0
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. (0/3)

- HCM 230 Nutrition and Wellness** 3.0
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. (3/0)

- HCM 240 Menu Planning and Design** 2.0
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. (2/0)

- HCM 243 Soups and Sauces** 1.0
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. (1/0)

- HCM 244 Soups and Sauces Lab** 2.0
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. (0/6)

HCM 245 Design and Layout of Food Service Facilities 3.0
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. (3/0)

HCM 246 Garde Manger/Charcuterie 1.0
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. (1/0)

HCM 247 Garde Manger/Charcuterie Lab 2.0
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. (0/6)

HCM 248 A la Carte Cooking 2.0
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. (2/0)

HCM 249 A la Carte Cooking Lab 4.0
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. (0/12)

HCM 255 Purchasing 3.0
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. (3/0)

HCM 257 Advanced Baking I 3.0
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. (3/0)
Prerequisites: Principles of Baking I and Principles of Baking II.

HCM 258 Advanced Baking II 3.0
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. (3/0)
Prerequisite: Advanced Baking I.

HCM 267 Baking Science 2.0
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. (2/0)
Prerequisite: Principles of Baking I.

HCM 273 Baking Seminar 1.0
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. (1/0)

HCM 278 Cost Control 2.0
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. (1/2)

HCM 310 Hospitality Law 3.0
Hospitality Law introduces the legal considerations of hospitality property management. The course stresses how to keep legal pitfalls from becoming problems. (3/0)

HCM 330 Hospitality Personnel Management 3.0
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. (3/0)

HCM 343 Recipe Costing and Menu Pricing 2.0
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. (1/2)

HCM 512 Culinary Internship 2.0
Culinary Internship provides students with work experience related to their area of career interest within the hospitality industry. Work experience may be in baking, culinary arts, supervision, or related areas. Hours are arranged. (0/8)
Prerequisite: Permission from instructor.

HCM 517 Baking Internship 2.0
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. (0/8)
Prerequisite: Permission from the instructor.

HCM 525 Baking Capstone 1.0
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. (0/3)
Prerequisite: Permission from the instructor.

HCM 532 Culinary Capstone 2.0
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. (0/6)
Prerequisite: Permission from the instructor.

HCM 598 Hotel Front Office Management 3.0
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. (3/0)

Cultural Studies

CLS 183 Baseball and American Culture 3.0

Baseball and American Culture examines the game of baseball and its impact on the reflection of American society. Some of the topics covered include: the Negro Leagues and baseball's eventual integration, the business of baseball involving labor relations, promotions, ball park construction, the evolution of the game and its heroes, and comparison between minor and major league baseball. The course includes visits to major and minor league games and guest speakers. (3/0)

CLS 184 Rock and Roll and American Culture 3.0

A major aspect of the American experience since World War II has been the birth and evolution of rock and roll music. This class will focus on the connection between rock and roll music and American culture. We will examine the roots of rock and roll and its origins in folk music, country, and the blues. From its birth in the 1950s, the class will study how rock and roll has evolved and changed over the years as it reflects the ongoing changes of American culture. Some of the genres that rock and roll music has evolved into that will be covered include; doo-wop, surf music, the British invasion, folk rock, Motown, heavy metal, psychedelic rock, funk, glam rock, punk, disco, hip hop, grunge, and new wave. (3/0)

Dental Assistant

DEA 253 Dental Science I 4.0

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. (4/0)

DEA 263 Dental Science II 2.0

Dental Science II is a continuation of Dental Science I. Topics include pharmacology from a dental perspective, dental emergencies, anesthesia, and ethical foundations. (2/0)

DEA 312 Dental Radiography I 3.0

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. (2/2)

DEA 321 Dental Radiography II 2.0

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 their corrections. (1/2)

DEA 403 Dental Materials 3.0

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. (1/6)

DEA 502 Dental Assisting Principles 4.0

Dental Assisting Principles provides techniques in four-handed dentistry, knowledge of general dental armamentarium, OSHA compliance, infection control protocol, and legal intraoral functions. (3/4)

DEA 582 Dental Assisting Experience I 2.0

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. (0/6)

Prerequisites: Dental Assisting Principles and Dental Materials.

DEA 585 Dental Assisting Experience II 5.0

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. (0/15)

DEA 602 Dental Specialties 4.5

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. (4/2)

Prerequisite: Dental Assisting Principles.

DEA 706 Procedures for the Dental Office 2.5

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. (2/1.5)

DEA 933 Internship Seminar 1.0

Internship Seminar emphasizes group discussion and individual conferences on clinical experiences. The course includes preparation for the National Board examination. (1/0)

Prerequisite: Dental Assisting Experience I.

Dental Hygiene

DHY 114 Dental Hygiene Anatomical Sciences 4.0

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. (4/0)

Prerequisites: Human Anatomy and Physiology I and Human Anatomy and Physiology II.

DHY 118 Oral Histology and Embryology 1.0

Oral Histology and Embryology presents the fundamentals of oral histology and embryology of facial structure and dental tissues. (1/0)

Prerequisites: Human Anatomy and Physiology I and Human Anatomy and Physiology II.

DHY 132 Dental Pharmacology 3.0

Dental Pharmacology studies drugs and their 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. (3/0)

Prerequisites: Human Anatomy and Physiology I, Human Anatomy and Physiology II, and Introduction to Organic and Biochemistry.

DHY 141 General and Oral Pathology 3.0

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. (3/0)

Prerequisite: Dental Hygiene Anatomical Sciences.

DHY 153 Dental Emergencies 1.0

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. (1/0)

DHY 155 Radiology 2.0

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. (2/0)

DHY 157 Radiology Lab 1.0

Radiology lab experiences develop competence in exposing, processing, mounting, critically evaluating and interpreting dental radiographs. (0/3)

DHY 174 Principles of Dental Hygiene 5.0

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. (3/6)

DHY 183 Dental Hygiene I Theory 2.0

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. (2/0)

DHY 184 Clinical Dental Hygiene I 3.0

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. (0/12)

DHY 211 Periodontology 2.0

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. (2/0)

Prerequisite: Microbiology.

DHY 213 Periodontology II 1.0

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. (1/0)

Prerequisite: Periodontology.

DHY 226 Biomaterials for the Dental Hygienist 2.5

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. (2/1.5)

DHY 228 Clinical Preventive Dentistry 2.0

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. (2/0)

Prerequisite: Dental Hygiene Anatomical Science.

DHY 230 Oral Health Nutrition 2.0

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. (2/0)

Prerequisite: Introduction to Organic and Biochemistry, or General Chemistry I and II.

DHY 241 Dental Ethics 2.0

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. (2/0)

DHY 252 Community Dentistry 3.0

Community Dentistry (a two-semester course) 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, implement, and evaluate a community dental health project. (3/0)

DHY 255 Community Oral Health 2.0

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. (1/3)

Prerequisite: Community Dentistry.

DHY 275 Dental Hygiene II Theory 1.0

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. (1/0)

Prerequisite: Dental Hygiene I Theory.

DHY 286 Clinical Dental Hygiene II 2.0 - 4.0

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. (0/16)

Prerequisite: Clinical Dental Hygiene I.

DHY 288 Local Anesthesia and Pain Control 1.0

Local Anesthesia and Pain Control builds on the knowledge base of anatomy and physiology. Emphasis focuses on patient pain control, therapies and techniques. (1/0)

Prerequisite: Dental Hygiene Anatomical Science.

DHY 293 Dental Hygiene III Theory 2.0

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. (2/0)

Prerequisite: Dental Hygiene II Theory.

DHY 295 Clinical Dental Hygiene III 2.0 - 4.0

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. (0/16)

Prerequisite: Clinical Dental Hygiene II.

DHY 303 Dental Hygiene IV Theory 2.0

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. (2/0)

Prerequisite: Dental Hygiene III Theory.

DHY 304 Clinical Dental Hygiene IV 4.0
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. (0/16)
Prerequisite: Clinical Dental Hygiene III.

Diesel Technology

DSL 144 Electrical Systems 4.0
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. (4/0)

DSL 324 Introduction to Diesel 4.0
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. (4/0)

DSL 354 Engines I 4.0
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. (4/0)

DSL 364 Engines II 4.0
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. (4/0)

DSL 444 Fuel Systems 4.0
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. (4/0)

DSL 544 Transmissions/Drive Axle 4.0
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. (4/0)

DSL 654 Hydraulic/Air Brakes 4.0
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. (4/0)

DSL 674 Chassis/Driveline 4.0
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. (4/0)

DSL 742 Air Conditioning/Refrigeration 2.0
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. (2/0)

DSL 829 Preventative Maintenance 2.0
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. (2/0)

DSL 846 Diesel Lab I 6.0
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. (0/18)

DSL 856 Diesel Lab II 6.0
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. (0/18)

DSL 863 Diesel Lab III 3.0
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. (0/9)

DSL 876 Diesel Lab IV 6.0
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. (0/18)

DSL 881 Diesel Internship I 3.0
Diesel Internship I provides work experience related to diesel technology lab training. Internship hours are schedule on an arranged basis. (0/12)
Prerequisite: Permission from the instructor.

DSL 883 Diesel Internship II 6.0
Diesel Internship II provides work experience related to diesel technology lab training. Internship hours are scheduled on an arranged basis. (0/24)
Prerequisite: Permission from the instructor.

DSL 886 Diesel Lab V 6.0
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. (0/18)

DSL 893 Diesel Lab VI 3.0
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. (0/9)

Early Childhood Education

ECE 103 Introduction to Early Childhood Education 3.0
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. (3/0)

ECE 120 Communication with Families 2.0
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. (2/0)

ECE 125 School Age Care 2.0
School Age Care includes the needs that correspond with each developmental level of the child between the ages of six and twelve. Emphasis is on appropriate activities and programming. (2/0)

ECE 133 Child Health, Safety, and Nutrition 3.0
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. (3/0)

ECE 153 Early Childhood Curriculum I with Lab 4.0
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. (3/3)
Note: Criminal background check is required.

ECE 156 Early Childhood Curriculum II with Lab 4.0
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. (2/6)
Prerequisite: Early Childhood Curriculum I with Lab.
Note: Criminal background check is required.

ECE 170 Child Growth and Development 3.0
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. (3/0)

ECE 221 Infant/Toddler Care and Education 3.0
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. (3/0)
Prerequisite: Child Growth and Development.

ECE 244 Early Childhood Guidance with Lab 4.0
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. (3/3)
Note: Criminal background check is required.

ECE 258 Early Childhood Field Practicum 6.0
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. (1/20)
Prerequisites: A grade of "C" or higher in Early Childhood Field Experience and permission from the instructor.

ECE 268 Early Childhood Field Experience 4.0
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. (1/12)
Prerequisites: Child Health, Safety and Nutrition; Child Growth and Development; Early Childhood Curriculum I and II with Labs; Introduction to Early Childhood Education; Early Childhood Guidance with Lab; and Communication with Families.
Note: Criminal background check is required.

ECE 287 Exceptional Learner 3.0
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. (3/0)
Note: Co-numbered with EDU 245.

ECE 290 Early Childhood Program Administration 3.0
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. (3/0)

Economics

ECN 120 Principles of Macroeconomics 3.0
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. (3/0)

ECN 130 Principles of Microeconomics 3.0
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. (3/0)

Education

EDU 210 Foundations of Education 3.0
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. (3/0)

EDU 235 Children's Literature 3.0
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 story telling, and develop important skills related to literature selection for children. Presentation skills with children are also explored. (3/0)

EDU 240 Educational Psychology 3.0
Educational Psychology applies the principles of psychology to classroom contexts. Topics include child/adolescent development, learning, motivation, instructional techniques, and assessment/evaluation. (3/0)

Prerequisite: Child Growth & Development or Developmental Psychology.
Note: Co-numbered with PSY 281

EDU 245 Exceptional Learner 3.0
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. (3/0)

Note: Co-numbered with ECE 287.

Electrical Technology

ELE 106 Electrical Blueprint Reading 2.0
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. (2/0)

ELE 126 Basics of Wiring 2.0
Basics of Wiring provides students the knowledge of different types of non-metallic and metallic device boxes available, how to determine the appropriate box for a given application and the appropriate method for mounting device boxes. Students learn how to identify and select various types and sizes of raceways and fittings along with the different methods of installation. (0/4)

ELE 155 National Electrical Code I 2.0
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. (2/0)

ELE 156 National Electrical Code II 2.0
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. (2/0)

Prerequisite: National Electrical Code I.

ELE 179 Advanced Wiring Systems 5.0
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. (2/6)

Prerequisite: Basics of Wiring.

ELE 180 Electrical Lighting Systems 2.0
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. (1/2)

ELE 207 Residential Electrical Services 3.0
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. (2/2)

Electronic Engineering Technology

ELT 215 Motors and Controls 2.0
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. (1/2)

ELT 250 Programmable Logic Controllers 3.0
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. (3/0)

Prerequisite: A grade of "C" or higher in Motors and Controls.

Co-requisite: Programmable Logic Controllers Lab.

ELT 251 Programmable Logic Controllers Lab 2.0
Programmable Logic Controllers Lab gives students hands-on experience installing, wiring, programming, and troubleshooting PLC systems and related equipment. (0/4)

Prerequisite: A grade of "C" or higher in Motors and Controls.

Co-requisite: Programmable Logic Controllers.

ELT 252 Advanced Programmable Logic Controllers 3.0
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. (3/0)

Prerequisites: A grade of "C" or higher in Programmable Logic Controllers Lab and Programmable Logic Controllers.

Co-requisite: Advanced Programmable Logic Controllers Lab.

ELT 253 Advanced Programmable Logic Controllers Lab 2.0
Advanced Programmable Logic Controllers Lab gives students hands-on experience installing, wiring, 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. (0/4)

Prerequisites: A grade of "C" or higher in Programmable Logic Controllers and Programmable Logic Controllers Lab.

Co-requisite: Advanced Programmable Logic Controllers.

ELT 313 Digital Circuits I 4.0

Digital Circuits I provides in-depth coverage of the analysis of logic circuitry. Students explore gating circuits, combinational logic, counters, and registers. (3/2)

Prerequisites: A grade of "C" or higher in Circuit Analysis II and Circuit Analysis II Lab.

ELT 331 Circuit Analysis I 4.0

Circuit Analysis I introduces the principles of electric circuits. It includes the study of voltage, current, resistance, power, energy, magnetism, electro-magnetism, capacitors, inductors, and transformers. Students analyze these devices in series, parallel, series-parallel circuits as well as motors and generators, using AC and DC voltage. (4/0)

Co-requisite: Circuit Analysis I Lab.

ELT 332 Circuit Analysis I Lab 1.0

Circuit Analysis I Lab includes basic experiments in electric circuits. It includes series and parallel circuits, and basic instrumentation. Students conduct experiments involving Ohm's and Kirchoff's Laws and Thevenin's Theorem. Troubleshooting technique for basic electric circuits is also covered. (0/2)

Co-requisite: Circuit Analysis I.

ELT 346 Circuit Analysis II 3.0

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 systems, the analysis of logic circuitry, gating circuits, combinational logic, counters, and registers. Students develop skills in the analysis and troubleshooting of semiconductor and digital circuits. (3/0)

Prerequisites: A grade of "C" or higher in Circuit Analysis I and Circuit Analysis I Lab.

Co-requisite: Circuit Analysis II Lab.

ELT 347 Circuit Analysis II Lab 2.0

Circuit Analysis II Lab gives students hands-on experience building, analyzing, and troubleshooting semiconductor and digital circuits. (0/4)

Prerequisites: A grade of "C" or higher in Circuit Analysis I and Circuit Analysis I Lab.

Co-requisite: Circuit Analysis II.

ELT 432 Telecommunications 4.0

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. (4/0)

Co-requisite: Telecommunications Lab.

ELT 433 Telecommunications Lab 1.0

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. (0/2)

Co-requisite: Telecommunications.

ELT 445 Industrial Networking I 4.0

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. (4/0)

Prerequisite: Industrial Electronics I.

ELT 446 Industrial Networking I Lab 1.0

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. (0/2)

Co-requisite: Industrial Networking I.

ELT 523 Electronic Devices 4.0

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. (3/2)

Prerequisites: A grade of "C" or higher in Circuit Analysis II and Circuit Analysis II Lab.

ELT 850 Design Projects Lab 1.0

Design Projects Lab involves solving problems by working as a team on projects that require students to draw on knowledge and resources gained in their electronics coursework. Students manage a project from conception to completion. (0/2)

Prerequisite: Electronic Devices.

Engineering/Engineering Technology

EGR 100 Engineering Orientation 1.0

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. (1/0)

Prerequisite: Math placement, or a grade of "C" or higher in Intermediate Algebra.

EGR 160 Engineering I 3.0

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. (2/2)

Prerequisite: Math placement; or a grade of "C" or higher in College Algebra and Trigonometry; or a grade of "C" or higher in Precalculus.

EGR 165 Engineering II 3.0

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. (2/2)

Prerequisite: Math placement; or a grade of "C" or higher in College Algebra and Trigonometry; or a grade of "C" or higher in Precalculus.

EGR 400 PLTW - Introduction to Engineering Design 3.0

PLTW - Introduction to Engineering Design teaches students to use a problem-solving model to improve existing products and invent new ones. Using three-dimensional modeling software, students communicate the details of the products. Emphasis is placed on analyzing potential solutions and communicating ideas to others. (3/0)

Note: Co-numbered with EGT 400

EGR 410 PLTW - Principles of Engineering 3.0

PLTW - Principles of Engineering explores the wide variety of careers in engineering and technology as well as various technology systems and manufacturing processes. Students learn how engineers and technicians use math, science, technology in an engineering problem-solving process to benefit people. The course also addresses concerns about social and political consequences of technological change. (3/0)

Note: Co-numbered with EGT 410

EGR 420 PLTW - Digital Electronics 3.0

PLTW - Digital Electronics encompasses the application of electronic circuits and devices. Students use computer simulation software to design and test digital circuitry prior to the actual construction of circuits and devices. (3/0)

Note: Co-numbered with EGT 420

EGR 430 PLTW - Aerospace Engineering 3.0

PLTW - Aerospace Engineering introduces students to aeronautics, flight, engineering design, aerospace information systems, astronautics, rocketry, propulsion, space life sciences, principles of aeronautics, systems engineering and more. Students explore and solve problems through activity-based, project-based, and problem-based learning. (3/0)

Note: Co-numbered with EGT 430.

EGR 440 PLTW - Biotechnical Engineering 3.0

PLTW - Biotechnical Engineering exposes students to the diverse fields of bio-technology including bio-medical engineering and genetics, bio-process engineering, agricultural and environmental engineering. Lessons engage students in engineering design problems that can be accomplished in a high school setting. (3/0)

Note: Co-numbered with EGT 440.

EGR 450 PLTW - Computer Integrated Manufacturing 3.0

PLTW - Computer Integrated Manufacturing expands prior three dimensional modeling skills. Students use automation, control systems, sensing devices, computer programming and robotics to efficiently mass produce products. Trouble-shooting is emphasized throughout the course. (3/0)

Note: Co-numbered with EGT 450

EGR 460 PLTW - Civil Engineering and Architecture 3.0

PLTW - Civil Engineering and Architecture provides an overview of these engineering areas, emphasizing the inter-relationship and mutual dependence of both fields. Students use state-of-the-art software to solve real world problems and apply knowledge to hands-on projects. By the end of the course, students are able to give a complete presentation to the client including three-dimensional renderings of buildings and improvements, zoning and ordinance constraints, infrastructure requirements, and other essential project plans. (3/0)

Note: Co-numbered with EGT 460

EGR 470 PLTW - Engineering Design and Development 3.0

PLTW - Engineering Design and Development is a capstone course where teams of students spend the year solving problems of their own choosing. The teams apply principles developed in the four preceding PLTW core courses and are guided by a community mentor. They brainstorm possibilities, research current patents and regulations, construct a working model, test the model in real life situations (or simulation), document their designs, and present and defend the design to a panel of experts. (3/0)

Note: Co-numbered with EGT 470

EGT 113 Introduction to PLM 3.0

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. (3/0)

EGT 153 Design Statics 3.0

Design Statics presents an elementary, analytical and practical approach to the principles and physical concepts of the study of forces and their 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. (3/0)

Prerequisite: Precalculus.

EGT 155 Engineering Drawing Practices 3.0

Engineering Drawing Practices is the development of the technical knowledge and skills required for application and interpretation of technical draw-

ings from various industries. The course will provide students with the fundamentals of drafting and technical documentation generation according to the ASTM Y14.1 (Engineering Drawing Practice) standards. Students will have exposure to architectural, mechanical, and electrical drawings. (3/0)

EGT 167 Geometric Dimensioning and Tolerancing 3.0

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 (3/0)

Prerequisite: Engineering Drawing Practices.

EGT 171 Manufacturing Processes 3.0

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. (1/4)

EGT 176 Electric Power and Electronics 4.0

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. (3/2)

Prerequisite: Precalculus.

EGT 184 Strength of Materials 3.0

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. (2/2)

Prerequisite: Design Statics.

EGT 400 PLTW - Introduction to Engineering Design 3.0

PLTW - Introduction to Engineering Design teaches students to use a problem-solving model to improve existing products and invent new ones. Using three-dimensional modeling software, students communicate the details of the products. Emphasis is placed on analyzing potential solutions and communicating ideas to others. (3/0)

Note: Co-numbered with EGR 400

EGT 410 PLTW - Principles of Engineering 3.0

PLTW - Principles of Engineering explores the wide variety of careers in engineering and technology as well as various technology systems and manufacturing processes. Students learn how engineers and technicians use math, science, technology in an engineering problem-solving process to benefit people. The course also addresses concerns about social and political consequences of technological change. (3/0)

Note: Co-numbered with EGR 410

EGT 420 PLTW - Digital Electronics 3.0

PLTW - Digital Electronics encompasses the application of electronic circuits and devices. Students use computer simulation software to design and test digital circuitry prior to the actual construction of circuits and devices. (3/0)

Note: Co-numbered with EGR 420.

EGT 430 PLTW - Aerospace Engineering 3.0

PLTW - Aerospace Engineering introduces students to aeronautics, flight, engineering design, aerospace information systems, astronautics, rocketry, propulsion, space life sciences, principles of aeronautics, systems engineering and more. Students explore and solve problems through activity-based, project-based, and problem-based learning. (3/0)

Note: Co-numbered with EGR 430.

EGT 440 PLTW - Biotechnical Engineering 3.0
 PLTW - Biotechnical Engineering exposes students to the diverse fields of bio-technology including bio-medical engineering and genetics, bio-process engineering, agricultural and environmental engineering. Lessons engage students in engineering design problems that can be accomplished in a high school setting. (3/0)

Note: Co-numbered with EGR 440.

EGT 450 PLTW - Computer Integrated Manufacturing 3.0
 PLTW - Computer Integrated Manufacturing expands prior three dimensional modeling skills. Students use automation, control systems, sensing devices, computer programming and robotics to efficiently mass produce products. Trouble-shooting is emphasized throughout the course. (3/0)

Note: Co-numbered with EGR 450.

EGT 460 PLTW - Civil Engineering and Architecture 3.0
 PLTW - Civil Engineering and Architecture provides an overview of these engineering areas, emphasizing the inter-relationship and mutual dependence of both fields. Students use state-of-the-art software to solve real world problems and apply knowledge to hands-on projects. By the end of the course, students are able to give a complete presentation to the client including three-dimensional renderings of buildings and improvements, zoning and ordinance constraints, infrastructure requirements, and other essential project plans. (3/0)

Note: Co-numbered with EGR 460.

EGT 470 PLTW - Engineering Design and Development 3.0
 PLTW - Engineering Design and Development is a capstone course where teams of students spend the year solving problems of their own choosing. The teams apply principles developed in the four preceding PLTW core courses and are guided by a community mentor. They brainstorm possibilities, research current patents and regulations, construct a working model, test the model in real life situations (or simulation), document their designs, and present and defend the design to a panel of experts. (3/0)

Note: Co-numbered with EGR 470

English As a Second Language (ESL)

ESL 054 English as a Second Language I 3.0
 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. (3/0)

Prerequisite: English placement.

Note: College Preparatory courses cannot be used to fulfill degree requirements.

ESL 061 English as a Second Language II 3.0
 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. (3/0)

Prerequisite: English as a Second Language I, or English placement.

Note: College preparatory courses cannot be used to fulfill degree requirements.

English Composition/Communication

ENG 084 College Preparatory Writing 3.0

College Preparatory Writing is a developmental writing course providing students with grammar and composition strategies necessary for college-level writing. The content of the course moves from paragraph development to the five-paragraph essay in a personal or expository genre. The course includes a review of grammar, style, and tone. Essays are structured around various rhetorical modes. The course provides readings to ensure critical thinking abilities and developed writing. (3/0)

Note: College preparatory courses cannot be used to fulfill degree requirements.

ENG 105 Composition I 3.0

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. (3/0)

Prerequisite: A grade of "C" or higher in College Preparatory Writing, or writing placement.

ENG 106 Composition II 3.0

Composition II follows Composition I with advanced readings and practice in academic discourse. In this course, students learn to construct rhetorically sound arguments. The course emphasizes academic research and responsible use of sources. (3/0)

Prerequisite: A grade of "C" or higher in Composition I.

ENG 110 Writing For The Workplace 3.0

Writing for the Workplace prepares students for the various types of written communication required by professional employers. In this class, students learn how to write informal and formal documents and reports in the design and style of career-related communication. This course also includes a review of grammar and usage skills, as well as emphasizes effective language use in real-world applications. (3/0)

Prerequisite: A grade of "C" or higher in College Preparatory Writing II or Writing placement.

Environmental Science

ENV 102 Introduction to Sustainability 3.0

Introduction to Sustainability will provide students a working knowledge of sustainable systems and their 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. (3/0)

ENV 111 Environmental Science 4.0

Environmental Science is designed for students interested in ecology. Topics include: ecological principles and the study of ecosystems; population dynamics; water, air, soil, food, waste and energy resources; and sustaining bio-diversity of species and ecosystems. Laboratory work complements each topic of study. (3/3)

Note: Students must provide their own transportation for off-campus field trips.

Fire Science Technology

FIR 101 Introduction to Fire Protection Technology 3.0
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. (3/0)

FIR 131 Codes and Inspection 3.0
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. (3/0)

FIR 145 Strategy and Tactics 3.0
Strategy and Tactics demonstrates the effects of fire on structural components and analyzes the strategic areas of concentration in a fire situation. (3/0)

FIR 148 Hydraulics and Pumping Applications 3.0
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. (3/0)

FIR 152 Fire Protection Systems 3.0
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. (3/0)

FIR 157 Fire Protection Equipment 3.0
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. (3/0)

FIR 235 Fire Investigation I 3.0
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. (3/0)

FIR 270 Survey of Construction 3.0
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. (3/0)

FIR 320 Essentials of Firefighter I 4.0
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. (4/0)

FIR 321 Essentials of Firefighter II 2.0
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. (2/0)

Prerequisite: Essentials of Firefighter I.

Foreign Language

FLS 141 Elementary Spanish I 4.0
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. (4/0)
Note: Meets diversity requirement for graduation.

FLS 142 Elementary Spanish II 4.0
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. (4/0)
Prerequisite: Elementary Spanish I or demonstrated proficiency.
Note: Meets diversity requirement for graduation.

FLS 241 Intermediate Spanish I 4.0
Intermediate Spanish I develops increasingly complex oral and written comprehension and fluency in the Spanish language. Students will review and learn new Spanish grammar, as well as utilize selected, authentic readings and compositions in Spanish. (4/0)
Prerequisite: Elementary Spanish II or demonstrated proficiency.
Note: Meets diversity requirement for graduation.

FLS 242 Intermediate Spanish II 4.0
Intermediate Spanish II provides a course to develop an increasingly complex oral and written comprehension of the Spanish language, while further developing their fluency in writing, speaking, listening, and reading the language. (4/0)
Prerequisite: Intermediate Spanish I.
Note: Meets diversity requirement for graduation.

Geography

GEO 121 World Regional Geography 3.0
World Regional Geography surveys nations and continents, emphasizing important physical characteristics of the major regions of the world. Attention centers on their economic, political, and cultural development as well as consequent contemporary relationships with each other. (3/0)
Note: Meets diversity requirement for graduation.

Graphic Communications

GRA 104 Introduction to Graphic Communications 3.0
Introduction to Graphic Communications will change how the students see. Visual literacy is key to design. Students will have a better understanding of the design process, the history that has brought us to where we are today, as well as the technical production theory from idea to the finished product through hands-on activities, tours, and demonstrations. (2/2)

GRA 116 Digital Preflight Production 3.0
Digital Preflight Production provides necessary skills in preflighting electronic files, inspecting film, file formats, and trapping issues. Students are introduced to a variety of proofing options. (3/0)

GRA 121 Digital Drawing 3.0
Digital Drawing provides basic instruction in the creation of graphics used for publishing along with the web. Students are introduced to illustration software. The intent of this course is to present the industry's current software package for digital illustration. (2/2)

GRA 137 Digital Design 3.0
Digital Design provides basic instruction in the software and enhances skills learned from previous courses or software used in relationship to publishing and the web. The intent of this course is to present the industry's current software package for digital design. (2/2)

GRA 140 Digital Imaging 3.0

Digital Imaging provides students with basic instruction of the software used for editing digital images. Digital image capture and composition are addressed in relationship to print and digital publishing. The intent of this course is to present the industry's current software package for digital image editing. (2/2)

GRA 141 Digital Imaging II 3.0

Digital Imaging II is a continuation of Digital Imaging. Emphasis is placed on advanced imaging techniques, color theory, camera raw images, and the effects of the digital age on our society.

Prerequisite: Digital Imaging.

GRA 148 Visual Web Design 3.0

Visual Web Design will allow students to identify the main objective of a website while learning basic design principles when designing for the web and digital publishing. Utilizing creative software, as well as color and basic design principles, students will be able to create a website that is aesthetically visually appealing, functional, and dynamic. (2/2)

GRA 154 Advanced Web Design 3.0

Advanced Web Design provides an opportunity to go beyond the mechanics of a web site and focus on design issues and the basics of the most current software used in designing web pages. (2/2)

GRA 165 Digital 3-D 3.0

Digital 3-D provides basic instruction in the most popular software used to create 3-D graphics. Emphasis is directed towards web publications and television graphics. The intent of this course is to present the industry's current software package for digital 3-D. (2/2)

GRA 173 Typography 3.0

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. (2/2)

GRA 908 Cooperative Education 1.0 - 3.0

Cooperative Education provides students work experience related to their field of study. Coop hours are scheduled on an arranged basis. (0/4-12)

Prerequisite: Permission from the instructor.

GRA 949 Special Topics 1.0 - 3.0

Special Topics emphasizes and enhances skills learned from previous courses, not limited to graphic communications, to produce a publication, whether it be for print or web. The emphasis is to work with industry and the college to produce a final product. (0/2-6)

Health Science

HSC 113 Medical Terminology 2.0

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. (2/0)

HSC 128 Anatomy and Physiology for Allied Health Programs 3.0

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 their functions are covered in detail, allowing the student to understand how the human body works as a whole. (3/0)

HSC 164 Sterile Processing Techniques 5.0

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. (4/3/0)

HSC 167 Sterile Processing Instrumentation 5.0

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. (4/3/0)

HSC 172 Nurse Aide 3.0

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. (2/1/2)

HSC 272 Certified Personal Trainer 3.0

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. (3/0)

History

HIS 110 Western Civilization: Ancient to Early Modern 3.0

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. (3/0)

HIS 111 Western Civilization: Early Modern to Present 3.0

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. (3/0)

HIS 151 U.S. History to 1877 3.0

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. (3/0)

HIS 152 U.S. History Since 1877 3.0

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. (3/0)

HIS 251 U.S. History 1945 to Present 3.0

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. (3/0)

HIS 253 American Indian History and Culture 3.0

American Indian History and Culture focuses on aboriginal cultures of North America from their 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. (3/0)

Note: Meets diversity requirement for graduation.

HIS 257 African American History 3.0

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. (3/0)

Note: Meets diversity requirement for graduation.

HIS 281 Local History 3.0

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. (3/0)

Humanities

HUM 122 American Film 3.0

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. (3/0)

HUM 287 Leadership Development Studies 3.0

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. (3/0)

Human Services

HSV 109 Introduction to Human Services 3.0

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. (3/0)

HSV 115 Agency and Community Resources 3.0

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. (3/0)

Prerequisite: Fundamentals of Case Management.

HSV 131 Fundamentals of Case Management 3.0

Fundamentals of Case Management focuses on collecting data from initial intake through discharge planning regarding a client's individual needs and their 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 their clients and service providers. (3/0)

Prerequisite: Composition I.

HSV 140 Social Work and Social Welfare 3.0

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. (3/0)

HSV 180 Ethics for Human Service Professionals 1.0

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. (1/0)

HSV 190 Youth Care Issues 3.0

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. (3/0)

HSV 225 Counseling Techniques 3.0

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. (3/0)

HSV 226 Fundamentals of Family Counseling 3.0

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 their own families of origin through genograms and other experiential exercises. The course concludes with each student conducting a live family interview. (3/0)

HSV 228 Group Counseling Techniques 3.0
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 their group counseling skills. (3/0)
Prerequisite: Counseling Techniques.

HSV 259 Introduction to Chemical Dependency 3.0
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. (3/0)

HSV 275 Human Services Capstone 1.0
Human Services Capstone is a class where students will demonstrate their understanding of being a human services worker. Students will focus on their motives for being a human services worker and evaluate their readiness to either enter the job market and/or transfer to a four-year institution. (1/0)
Prerequisite: Permission from the instructor.
Co-requisite: Human Services Internship.

HSV 802 Internship 2.0 - 6.0
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. (0/8-24)
Prerequisites: Must have 12 credit hours of Human Services courses and permission from the instructor.

HVAC/R Technology

HCR 103 Introduction to HVAC/R and Safety 3.0
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. (2/2)

HCR 121 Forced Air Heating Systems 2.0
Forced Air Heating Systems covers the application of energy sources and equipment as they apply to heating, ventilation, air humidification, and filtration systems. (1/2)

HCR 188 Electricity for HVAC/R 4.0
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. (3/2)

HCR 201 Applied Practices I: Repair and Service 4.0
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. (2/4)

HCR 208 Boilers and Hydronic Systems 4.0
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 traps and recognize the common piping configurations. (2/4)

HCR 250 Electronic Controls 3.0
Electronic Controls presents and advanced study of electrical controls and

their applications in HVAC/R systems. Students become knowledgeable in control application. (2/2)

HCR 301 Applied Practices II: Advanced Repair and Service 3.0
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. (1/4)
Prerequisite: Applied Practices I: Repair and Service.

HCR 348 Soldering, Piping, and Fitting 3.0
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. (2/2)

HCR 401 HVAC/R Capstone 4.0
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. (2/4)
Prerequisite: Applied Practices II: Advanced Repair and Service.

HCR 402 HVAC/R Internship 4.0
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 their internship. (0/8)
Prerequisite: Applied Practices II: Advanced Repair and Service.

HCR 448 Applied Practices III: Installation 3.0
Applied Practices III: Installation provides a hands-on experience in installing heating and cooling equipment. Students become proficient in the installation of multiple systems. (1/4)
Prerequisite: Applied Practices II: Advanced Repair and Service.

HCR 458 Alternative Energy Sources 2.0
Alternative Energy Sources presents alternative energy sources and equipment as they apply to heating, ventilation, air-cooling and refrigeration systems. (2/1)

Industrial Engineering Technology

IND 109 Equipment Safety and Operation 3.0
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. (2/2)

IND 117 Industrial Engineering Technology Orientation 3.0
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. (3/0)

IND 187 Predictive Maintenance 2.0
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. (1/2)

IND 191 Preventative Maintenance 2.0
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. (1/2)

IND 930 Industrial Internship 4.0
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. (0/16)

Journalism

JOU 110 Introduction to Mass Media 3.0
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. (3/0)

JOU 211 Ethics in the Media 3.0
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. (3/0)

Note: Co-numbered with PHI 211

Laser Electro-Optics Technology

LEO 230 Fundamentals of Light and Lasers 5.0
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. (3/4)

LEO 340 Laser Systems and Applications I 5.0
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 their active medium, output wavelength, and applications. (3/4)

Prerequisite: Fundamentals of Light and Lasers.

LEO 360 Lasers in Manufacturing 3.0
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. (3/0)

LEO 450 Laser Systems and Applications II 5.0
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 their active medium, output wavelength, and applications. (3/4)

Prerequisite: Laser Systems and Applications I.

Literature

LIT 110 American Literature to Mid 1800s 3.0
American Literature to Mid 1800s examines the themes, philosophies, and styles of authors from the early period of American development through the nineteenth century. Students apply several methods of literary analysis to interpret the literature of this time period. (3/0)

LIT 111 American Literature since Mid 1800s 3.0
American Literature since Mid 1800s examines the themes, philosophies and styles of authors from mid-nineteenth century to modern times. Students

apply several methods of literary analysis to interpret the literature of this time period. (3/0)

LIT 130 African American Literature 3.0
African American Literature examines the literary, artistic, and socio-political traditions of the black experience in America. A variety of fiction and nonfiction works are analyzed with emphases on slave narratives, turn-of-the-century political writings, the Harlem Renaissance, the Black Arts Movement, and contemporary cultural texts. (3/0)

Note: Meets diversity requirement for graduation.

LIT 134 Multicultural Literature 3.0
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. (3/0)

Note: Meets diversity requirement for graduation.

LIT 140 British Literature I 3.0
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. (3/0)

LIT 141 British Literature II 3.0
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. (3/0)

LIT 160 Short Story/Novel 3.0
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. (3/0)

LIT 169 Science Fiction and Fantasy Literature 3.0
Science Fiction and Fantasy Literature offers an introduction to some of the ground-breaking works in the fields of Fantasy and Science Fiction writing, as well as some modern adaptations of these genres. Students apply several methods of literary analysis to interpret the works. (3/0)

LIT 170 Poetry/Drama 3.0
Poetry/Drama offers an introduction to some of the finest plays and poems of the western world. This course focuses on both the writing techniques unique to these genres and the subject matter of individual works. Students apply several methods of literary analysis to interpret the works. (3/0)

LIT 190 Women Writers 3.0
Women Writers examines the important contributions women have made to the various literary genres: poetry, short story, essay, drama, and the novel. Students assess inherent problems arising not only from gender, but also from race and class differences in various cultures and centuries. Students apply several methods of literary analysis to interpret the literature written by women. (3/0)

Note: Meets diversity requirement for graduation.

Management and Human Resources

MGT 101 Principles of Management 3.0
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. (3/0)

MGT 130 Principles of Supervision 3.0
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. (3/0)

MGT 138 Employee Evaluation and Training Techniques 3.0
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. (3/0)

MGT 165 Principles of Quality 3.0
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. (3/0)

MGT 170 Human Resource Management 3.0
Human Resource Management details how to create a positive working environment through proper recruitment, selection, training, development, and evaluation. (3/0)

MGT 175 Introduction to Law for Managers and Supervisors 3.0
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. (3/0)

MGT 180 Management and Labor Relations 3.0
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. (3/0)

MGT 190 Employee Compensation and Benefits Management 3.0
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. (3/0)

MGT 195 Workplace Empowerment 3.0
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. (3/0)
Note: Meets diversity requirement for graduation.

MGT 230 Operations Management 3.0
Operations Management provides basic knowledge of those business activities required to produce products efficiently and profitably. It explores basic manufacturing concepts, interrelationships of all manufacturing functions, and the effect of the external environment on the business. (3/0)

MGT 270 Operations Production Management 3.0
Operations Production Management introduces students to the science and art of ensuring goods and services are created and delivered to the customer in the most efficient and effective manner. Students learn to analyze costs while incorporating value-added service, quality, profitability, practice, and procedure. (3/0)

MGT 900 Documentation and Evaluation of Experiential Learning 3.0

Documentation and Evaluation of Experiential Learning provides the writing and research skills essential for compiling a personal career portfolio. Students identify transferable learning experiences and prepare descriptions and documentation of learning. Students examine and assess personal, educational, and occupational goals in conjunction with the changing world of work. Students in the Applied Business: Experiential Learning/Portfolio Option must complete this course for prior learning assessment and awarding of experiential learning credit. This program accommodates the awarding of college credit for non-credit educational experiences. The number of credit hours that may be awarded is subject to college policy. One to 30 credit hours may be awarded. Credit applies only to the Applied Business: Experiential Learning/Portfolio Option. (3/0)

Prerequisite: Permission from the instructor.

MGT 932 Internship 1.0 - 8.0

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. (0/4-32)

Prerequisite: Permission from the instructor.

Manufacturing

MFG 121 Machine Trade Printreading I 2.0

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. (2/0)

MFG 145 Light Machining for Maintenance Trades 4.0

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. (2/4)

MFG 156 Introduction to CNC Machining 3.0

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. (2/2)

MFG 190 Metallurgy 2.0

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. (1/2)

Prerequisite: Basic Machine Theory.

MFG 211 Basic Machine Theory 2.0

Basic Machine Theory presents basic machining processes and concepts necessary to set up and operate machine shop equipment. (2/0)

MFG 222 Machine Operations I 4.0

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. (2/4)

MFG 228 Machine Operations II 4.0

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. (2/4)

Prerequisite: Machine Operations I.

MFG 291 CNC Mill Operator (NIMS) 2.0
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. (1/2)

MFG 334 CNC Lathe Program and Setup 2.0
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. (1/2)

MFG 359 CNC Programming and Operations 4.0
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. (2/4)
Prerequisite: Introduction to CNC Machining.

MFG 420 Jig and Fixture Design 2.0
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 their uses in modern machine tools. (1/2)

Marketing

APP 150 Clothing Selection 3.0
Clothing Selection analyzes the social and psychological aspects of dress. Students learn to choose clothing to suit their life-style, personality, figure, and wardrobe plan. Emphasis centers on developing the positive aspects of their personalities, developing good grooming habits, and learning business etiquette. (3/0)

APP 210 Apparel Textiles 3.0
Apparel Textiles identifies the natural and man-made fabrics used in the manufacture of textiles. Students also develop the ability to identify and determine the important characteristics of textiles by means of structural analysis using actual textile materials. (3/0)

MKT 110 Principles of Marketing 3.0
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. (3/0)

MKT 140 Principles of Selling 3.0
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. (3/0)

MKT 150 Principles of Advertising 3.0
Principles of Advertising explores the communication element of the marketing mix. It covers topics of advertising, personal selling, publicity/public relations, and direct marketing. (3/0)

MKT 154 Visual Merchandising 3.0
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. (3/0)

MKT 163 Merchandising 3.0
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. (3/0)

MKT 165 Retail Management 3.0
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. (3/0)

MKT 184 Customer Service 3.0
Customer Service develops the necessary skills required to be successful as a frontline service provider. (3/0)

MKT 185 Marketing Internship I 2.0
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. (0/8)

MKT 189 Marketing Internship II 2.0
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. (0/8)

MKT 190 International Marketing 3.0
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. (3/0)
Note: Meets diversity requirement for graduation.

MKT 191 Seminar I: Career Options 1.0
Seminar I: Career Options discusses students work experience and provides an opportunity to explore career area options through guest speakers representing various careers. (1/0)

MKT 193 Seminar II: Applications in Management 1.0
Seminar II: Applications in Management focuses on realistic situations in five basic retailing components: merchandising, sales promotion, personnel, finance, and control and operations. (1/0)

MKT 198 Sports Marketing 3.0
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. (3/0)
Prerequisite: Principles of Marketing.

MKT 300 Sports Marketing Internship 1.0 - 8.0
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. (0/4-32)
Prerequisite: Permission from the instructor.

Mathematics

MAT 057 Statistics Success 2.0
Statistics Success will concentrate on the development of study skills, math skills, and statistical concepts. Designed to support students for success in Statistics. (2/0)
Co-requisite: Statistics
Note: College preparatory courses cannot be used to fulfill degree requirements.

MAT 068 College Preparatory Math 3.0

College Preparatory Math provides students with the knowledge necessary for success in Intermediate Algebra. Students will master objectives over integers, fractions, decimals, percent and proportions, and basic algebra. (3/0)
Note: College preparatory courses cannot be used to fulfill degree requirements.

MAT 102 Intermediate Algebra 4.0

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. (4/0)

Prerequisite: Math placement, or a grade of "C" or higher in College Preparatory Math.

MAT 121 College Algebra 4.0

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. (4/0)

Prerequisite: Math placement; or a grade of "C" or higher in Intermediate Algebra.

Note: *Students cannot receive credit for Precalculus as well as College Algebra and/or Trigonometry.*

MAT 129 Precalculus 5.0

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. (5/0)

Prerequisite: Math placement; or a grade of "B" or higher in Intermediate Algebra.

Note: *Students cannot receive credit for Precalculus as well as College Algebra and/or Trigonometry.*

MAT 130 Trigonometry 3.0

Trigonometry includes trigonometric functions, graphs, identities, solving triangles, vectors, trigonometric equations, complex numbers, and polar coordinates. (3/0)

Prerequisite: Math placement; or grade of "C" or higher in Intermediate Algebra.

Note: *Students cannot receive credit for Precalculus as well as College Algebra and/or Trigonometry.*

MAT 157 Statistics 4.0

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. (4/0)

Prerequisite/Co-requisite: Statistics Success or Math placement.

MAT 211 Calculus I 5.0

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. (5/0)

Prerequisite: Math placement; or a grade of "C" or higher in College Algebra and Trigonometry; or a grade of "C" or higher in Precalculus.

MAT 217 Calculus II 5.0

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. (5/0)

Prerequisite: A grade of "C" or higher in Calculus I.

MAT 220 Calculus III 5.0

Calculus III completes the calculus sequence, emphasizing multi variable calculus and includes coverage of vector functions, partial derivatives, multiple integrals, and differential equations. (5/0)

Prerequisite: A grade of "C" or higher in Calculus II.

MAT 225 Differential Equations 3.0

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. (3/0)

Prerequisite: A grade of "C" or higher in Calculus II.

MAT 227 Elementary Differential Equations with Laplace 4.0

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. (4/0)

Prerequisite: A grade of "C" or higher in Calculus II.

MAT 711 Business and Financial Mathematics 3.0

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. (3/0)

Note: *This course does not count toward the A.A. and A.S. science and mathematics requirement.*

MAT 743 Technical Math 3.0

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. (3/0)

MAT 750 Technical Mathematics II 5.0

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. (5/0)

Prerequisite: Technical Mathematics, Circuit Analysis I, Math placement or a grade of "C" or higher in College Prep Math.

MAT 751 Technical Mathematics III 5.0

Technical Mathematics III deals with the trigonometric functions, oblique triangles, advanced algebra, statistics, introductory analytic geometry, and calculus. Emphasis centers on applications for the needs of the student's particular program. (5/0)

Prerequisite: Technical Mathematics II or Math placement.

MAT 752 Technical Mathematics IV 2.0

Technical Mathematics IV presents the LaPlace transform as utilized in electronic circuits and analogous disciplines. (2/0)

Prerequisite: Technical Mathematics III.

MAT 908 Cooperative Education 1.0 - 6.0

Cooperative Education provides cooperative work experience related to mathematics. Work experience hours are arranged. (0/4-24)

Prerequisite: Permission from the instructor.

Media Studies

MMS 105 Audio Production 3.0
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. (1/4)

MMS 107 Sports Field Production 3.0
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. (1/4)
Prerequisite: Introduction to Media Production.

MMS 108 Sports Production - Audio 3.0
Sports Production – Audio is designed to allow students hands-on practical experience in the production of audio for sporting events. Students apply skills learned in previous courses to produce sports packages for radio broadcast purposes. (1/4)
Prerequisite: Audio Production.

MMS 109 Advanced Sports Production 3.0
Advanced Sports Production is an upper-level production course allowing students to produce long-form video or audio projects. Students utilize skills from previous production courses, and create productions from the idea phase through the post production phase. Leadership skills are emphasized. (1/4)
Prerequisites: Sports Field Production and Sports Production - Audio.

MMS 113 Introduction to Media Production 3.0
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 CBTv-17 and to upload to the Web. (1/4)

MMS 114 Media Production II 3.0
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 CBTv-17 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. (1/4)

MMS 123 Electronic Media Performance 3.0
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. (2/2)

MMS 134 Media Writing 3.0
Media Writing is meant to introduce the student to narrative techniques as they relate to audio/visual images. These relationships will emphasize storytelling concepts and treatments with considerable emphasis on the scripting process. Examples from news, short features and documentaries will be used to illustrate the various techniques used today. Various forms of media content including news stories, photo essays and short features will be developed using the two-column audio/video narrative format. (3/0)
Prerequisite: A grade of "C" or higher in Composition I.

MMS 135 Introduction to Copy Writing 3.0
Introduction to Copy Writing provides the knowledge necessary to critique and write various forms of continuity used in the broadcast industry. Students examine present commercial copy and appraise its value to the consumer

and the merchant. In addition, students write a variety of copy, selling products, services, and promotional events. (3/0)

MMS 146 Sports Information and Copywriting 3.0
Sports Information and Copywriting allows students to develop an understanding and hands-on skills in areas such as press releases, gathering and reporting statistics, assembling and presenting team information. Students will work with teams to hone the skills needed in sports information venues. (3/0)

MMS 150 Electronic News Writing 3.0
Electronic News Writing introduces students to the techniques and stylistics for writing and reporting for the electronic mass audiences, including radio, television and cable. Students will learn the processes involved in interviewing techniques, gathering and writing news. Students also learn what constitutes news judgment and learn how to develop newscasts. Ethical and legal issues involved with news writing and reporting are also considered. (2/2)
Prerequisite: A grade of "C" or higher in Composition I.

MMS 151 Fall Sports Announcing 3.0
Fall 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 fall semester, including football, basketball, hockey, soccer and volleyball. (3/0)
Prerequisite: Electronic Media Performance.

MMS 152 Spring Sports Announcing 3.0
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. (3/0)
Prerequisite: Electronic Media Performance.

MMS 153 Summer Sports Announcing 3.0
Summer 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 summer semester, including football, baseball, and softball. (3/0)
Prerequisite: Electronic Media Performance.

MMS 190 Broadcast Promotions 3.0
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, CBTv-17 and the Reiver Sports Network. (1/4)

MMS 202 Social Media Marketing 3.0
Social Media Marketing introduces students to marketing via social media platforms. 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. (3/0)

MMS 204 New Media Production 3.0
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. (2/2)

MMS 205 Advanced Audio Production 3.0
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. (1/4)
Prerequisite: Audio Production.

- MMS 216 Social Media Capstone 4.0**
Social Media Capstone requires students to produce and maintain a rich social media campaign using social media marketing strategies and social media production techniques. (2/4)
- MMS 223 Advanced Radio Performance 3.0**
Advanced Radio Performance is designed to facilitate individual growth as on-air radio talent. Students learn advanced skills including, but not limited to, vocal performance, show preparation, use of phones, interviewing, remote performance, character development, and overall operating procedures. Students air check daily and are critiqued on individual levels of progress. (1/4)
Prerequisite: Electronic Media Performance.
- MMS 231 Advanced Video Production I 3.0**
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. (1/4)
Prerequisite: Introduction to Media Production.
- MMS 232 Advanced Video Production II 3.0**
Advanced Video Production II advances students' knowledge of non-linear editing techniques and applications associated with computers and industry software. Practical tutorials will focus on integrating 2D and 3-D motion graphics, multitrack audio applications and outputting final products into multiple formats. This course will require the student to produce professional level media projects for sure within the college or for the college's cable channel. In the end these projects will provide the student with a portfolio of production pieces for their individual job searches. (1/4)
Prerequisite: A grade of "C" or higher in Advanced Video Production I.
- MMS 260 Electronic Media Sales and Management 3.0**
Electronic Media Sales and Management examines sales techniques used in the broadcast industry. Students cold call, develop sales plans, and sell for KIWR and CBTV-17. Sales training introduces students to the career opportunities available to account executives. Students also learn account and personnel management procedures. (3/0)
- MMS 261 Programming for the Electronic Media 3.0**
Programming for the Electronic Media is a survey course designed to teach various aspects of programming techniques and theories with radio, television, and cable. This course enlightens students in areas concerning selection and placement of programs, understanding demographics and how programming is affected by the target audience demos, FCC regulations pertaining to programming, and implementation of programming. (3/0)
- MMS 290 Radio Cooperative Education 1.0 - 6.0**
Radio Cooperative Education involves students in the Media Studies program, with an emphasis in radio broadcasting, working directly in the radio industry. Students work under the direct supervision of the media studies program chair, and the supervisors and staff at the work site. (0/4-24)
Prerequisite: Audio Production.
- MMS 291 Video Cooperative Education 1.0 - 6.0**
Video Cooperative Education entails students in the media studies program, with an emphasis in video/television broadcasting, working directly in the television, cable, or corporate/industrial video industry. Students work under the supervision of the media studies program chair, and the supervisors and staff at the work site. (0/4-24)
Prerequisite: Introduction to Media Production.
- MMS 296 Video Practicum I 1.0**
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 their writing and production skills to assist in producing media programs that will be aired on the cable channel or made available to individual programs within the college. (0/4)
- MMS 297 Video Practicum II 1.0**
Video Practicum II allows advanced students to work with station personnel and faculty to research, plan and execute programs to be aired on the cable channel 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 their writing and production skills to direct media programs. (0/4)
Prerequisite: A grade of "C" or higher in Video Practicum I.
- MMS 301 Video Practicum III 2.0**
Video Practicum III allows students practical hands-on experience in producing media content that will be aired on the cable channel 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. (0/4)
Prerequisite: Video Practicum II.
- MMS 306 Sports Media Practicum I 1.0**
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. (0/4)
- MMS 307 Sports Media Practicum II 1.0**
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. (0/4)
Prerequisite: A grade of "C" or higher in Sports Media Practicum I.
- MMS 308 Sports Media Practicum III 1.0**
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. (0/4)
Prerequisite: A grade of "C" or higher in Sports Media Practicum II.
- MMS 309 Sports Media Practicum IV 1.0**
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. (0/4)
Prerequisite: A grade of "C" or higher in Sports Media Practicum III.
- MMS 340 Radio Practicum I 1.0**
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. (0/4)
- MMS 341 Radio Practicum II 1.0**
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. (0/4)
Prerequisite: A grade of "C" or higher in Radio Practicum I.
- MMS 342 Radio Practicum III 1.0**
Radio Practicum III is designed for those students who wish to continue learning on-air techniques and other station procedures on KIWR. 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. (0/4)
Prerequisite: A grade of "C" or higher in Radio Practicum II.

MMS 343 Radio Practicum IV 1.0
Radio Practicum IV is designed for those students who wish to continue learning on-air techniques and other station procedures on KIWR. Students will synthesize learning from previous practicum courses to produce a marketable on-air sound. Students will also incorporate promotional content, show prep and formatics to create professional quality on-air performance. 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. (0/4)
Prerequisite: A grade of "C" or higher in Radio Practicum III.

MMS 350 Media Sales Practicum 1.0
Media Sales Practicum is designed to give students practical experience in media sales. The course emphasizes relationship building and the creation of a usable client list. Students will synthesize learning from previous sales course to sell and to build their own sales portfolio. Students will sell for KIWR, and have the opportunity to sell for CBTV-17 and the RSN. (0/4)
Prerequisite: Electronic Media Sales and Management.

MMS 930 Sports Media Internship 3.0
Sports Media Internship is designed to allow students hands-on practical experience in video, audio, and print media with a sports emphasis, according to students' needs. Students apply skills learned in previous coursework. (0/12)
Prerequisite: Permission from the program chair.

MMS 932 Media Studies Internship 3.0
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 their instructor and the supervisors and staff at the work site. (0/9)
Prerequisite: Only students in the Media Studies program have permission to enroll in this course.

Medical Assistant

MAP 123 Administrative Medical Office Procedures 3.0
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. (2/2)

MAP 131 Advanced Medical Office Procedures 4.0
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. (3/2)

MAP 215 Medical Laboratory Techniques 4.0
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. (3/2)
Prerequisites: Anatomy and Physiology for Allied Health Programs and Clinical Procedures I.

MAP 353 Clinical Procedures I 4.0
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. (2/4)

MAP 358 Clinical Procedures II 5.0
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, gynecology, cardiology, ear, nose and throat, orthopedics, radiology, and minor surgery. Basic nutrition is introduced. (3/4)

Prerequisite: Clinical Procedures I.

MAP 514 Basics of Pharmacology 3.0
Basics of Pharmacology introduces the student to the basics of drug therapies as they relate to illness. The course includes dosage calculations and administration. (2/2)

MAP 533 Diseases and Disorders 2.0
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. (2/0)

MAP 601 Medical Assistant Seminar 1.0
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. (1/0)
Co-requisite: Medical Assistant Externship.

MAP 612 Medical Assistant Externship 3.0
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. (0/12)

Military and ROTC

MIL 100 Foundations of the U.S. Air Force I 1.0
Survey course designed to introduce students to the United States Air Force and Air Force Reserve Officer Training Corps. Featured topics include background, mission, and organization of the Air Force and functions of U.S. strategic forces. Emphasis placed on development of written and oral communication. Leadership Laboratory (MIL 107) is mandatory for AFROTC cadets and complements this course by providing cadets with followership experiences. (1/0)
Co-requisite: Leadership Laboratory.
Note: This course is offered in partnership with the University of Nebraska at Omaha.

MIL 101 Foundations of the U.S. Air Force II 1.0
Survey course designed to introduce students to the United States Air Force and Air Force Reserve Officer Training Corps. Featured topics include background, mission, and organization of the Air Force and functions of U.S. strategic forces. Emphasizes development of written and oral communication. Leadership Laboratory (MIL 107) is mandatory for AFROTC cadets and complements this course by providing cadets with followership experiences. (1/0)
Co-requisite: Leadership Laboratory.
Note: This course is offered in partnership with the University of Nebraska at Omaha.

MIL 107 Leadership Laboratory 0.0
Leadership Laboratory courses (LLABs) augment the AFROTC 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 conducted within the framework of an organized cadet corps with a progression of experiences designed to develop leadership potential. (0/2)
Note: 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

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. (2/0)

Co-requisite: Leadership Laboratory.

Note: *This course is offered in partnership with Creighton University.*

MIL 120 Introduction to Critical Thinking and the Army II 2.0

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 is 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. (2/0)

Prerequisite: Introduction to Critical Thinking and the Army I.

Note: *This course is offered in partnership with Creighton University.*

MIL 124 Leadership Laboratory 0.0

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. (0/2)

Co-requisite: Introduction to Critical Thinking and the Army I or Introduction to Critical Thinking and the Army II.

Note: *This course is offered in partnership with Creighton University.*

MIL 200 The Evolution of USAF Air and Space Power I 1.0

Survey course designed to trace the historical development of air power and its uses starting before the Wright brothers and extending through the Korean War. Concentrates on the advent of the air age, the airplane at war (1914-1918), the interwar years, air power in World War II, the Berlin Airlift, air power in the Korean War, and the evolution of air power concepts and doctrine. Emphasizes student participation and presentations to enhance communication skills. Leadership Laboratory (MIL 107) is mandatory for AFROTC cadets and complements this course by providing cadets with followership experiences. (1/0)

Prerequisites: Foundations of the U.S. Air Force I and Foundations of the U.S. Air Force II.

Co-requisite: Leadership Laboratory.

Note: *This course is offered in partnership with the University of Nebraska at Omaha.*

MIL 201 The Evolution of USAF Air and Space Power II 1.0

Survey course designed to trace the historical development of air power and its uses starting after the Korean War and continuing through its present role in international policies. Concentrates on air and space power experiences from the Vietnam conflict and operations Desert Shield and Desert Storm. Emphasizes student participation and presentations to enhance communication skills. Leadership Laboratory (MIL 107) is mandatory for AFROTC cadets and complements this course by providing cadets with followership experiences. (1/0)

Prerequisites: Foundations of the U.S. Air Force I and Foundations of the U.S. Air Force II.

Co-requisite: Leadership Laboratory.

Note: *This course is offered in partnership with the University of Nebraska at Omaha.*

MIL 216 Leadership Laboratory II 0.0

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. (0/2)

Note: *This course is offered in partnership with Creighton University.*

MIL 221 Basic Individual Leadership Techniques 2.0

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. (2/0)

Note: *This course is offered in partnership with Creighton University.*

MIL 222 Advanced Individual Leadership Techniques 2.0

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. (2/0)

Prerequisite: Basic Individual Leadership Techniques.

Note: *This course is offered in partnership with Creighton University.*

Music

MUA 133 Applied Music Composition 2.0

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. (1/2)

Prerequisite: Permission of Instructor.

Note: *Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music may be counted toward a degree.*

MUA 173 Applied Woodwinds 2.0

Applied Music 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. (1.5/1)

Note: *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

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. (.5/1.5)

Prerequisite: Permission from the instructor.

Note: *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

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. (1.5/1)

Note: *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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Voice I.

Note: *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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Voice II.

Note: *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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Voice III.

Note: *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

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. (1.5/1)

Note: *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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Piano I.

Note: *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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Piano II.

Note: *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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Piano III.

Note: *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

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. (1.5/1)

Note: *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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Bassoon I.

Note: *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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Bassoon II.

Note: *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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Bassoon III.

Note: *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

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. (1.5/1)

Note: *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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Guitar I.

Note: *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

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: A grade of "C" or higher in Applied Guitar II.

Note: *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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Guitar III.

Note: *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

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. (1.5/1)

Note: *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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Clarinet III.

Note: 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

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. (1.5/1)

Note: 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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Oboe I.

Note: 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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Oboe II.

Note: 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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Oboe III.

Note: 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

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. (1.5/1)

Note: 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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Flute I.

Note: 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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Flute II.

Note: 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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Flute III.

Note: 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

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. (1.5/1)

Note: 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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Tuba I.

Note: 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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Tuba II.

Note: 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

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. (1.5/1)

Prerequisite: A grade of "C" or higher in Applied Tuba III.

Note: 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

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. (1.5/1)

Note: 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
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. (1.5/1)
Prerequisite: A grade of "C" or higher in Applied Percussion III.
Note: Does not meet humanities requirement for graduation; a total of sixteen credits in Applied Music courses may be counted toward a degree.

MUS 100 Music Appreciation 3.0
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. (3/0)

MUS 102 Music Fundamentals 3.0
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. (3/0)

MUS 109 Jazz Combo I 1.0
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. (0/3)
Prerequisite: Must audition.
Note: 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
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. (0/3)
Prerequisite: A grade of "C" or higher in Jazz Combo I.
Note: 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
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. (0/3)
Prerequisite: Must audition.
Note: 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
Concert Choir I, through rehearsal and performance, provides a large vocal ensemble experience. This course requires various performances outside of class. (0/3)
Prerequisite: Must audition.
Note: 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
Concert Band I, through rehearsal and performance, provides a large instrumental ensemble experience. This course requires various performances outside of class. (0/3)
Prerequisite: Must audition.
Note: 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
Concert Choir II, through rehearsal and performance, provides a large vocal ensemble experience. This course requires various performances outside of class. (0/3)
Prerequisite: A grade of "C" or higher in Concert Choir I.
Note: 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
Concert Choir III, through rehearsal and performance, provides a large vocal ensemble experience. This course requires various performances outside of class. (0/3)
Prerequisite: A grade of "C" or higher in Concert Choir II.
Note: 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
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. (0/3)
Prerequisite: A grade of "C" or higher in Instrumental Jazz Ensemble I.
Note: 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
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. (0/3)
Prerequisite: A grade of "C" or higher in Instrumental Jazz Ensemble II.
Note: 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
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. (0/3)
Prerequisite: A grade of "C" or higher in Instrumental Jazz Ensemble III.
Note: 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
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. (1/0)

MUS 186 Class Piano II 1.0
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. (1/0)
Prerequisite: Class Piano I.

MUS 187 Class Piano III 1.0
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. (1/0)
Prerequisite: Class Piano II.

MUS 188 Class Piano IV 1.0

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. (1/0)

Prerequisite: Class Piano III.

MUS 204 History of Rock and Roll 3.0

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. (3/0)

Note: *Meets diversity requirement for graduation.*

MUS 213 Men's Ensemble I 1.0

Men's Ensemble I, through rehearsal and performance, provides a small vocal ensemble experience. This course requires various performances outside of class. (0/2)

Prerequisite: Must audition.

Co-requisite: Concert Choir or Chamber Choir.

Note: *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

Men's Ensemble II, through rehearsal and performance, provides a small vocal ensemble experience. This course requires various performances outside of class. (0/2)

Prerequisite: A grade of "C" or higher in Men's Ensemble I.

Co-requisite: Concert Choir or Chamber Choir.

Note: *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

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. (0/3)

Prerequisite: A grade of "C" or higher in Jazz Combo II.

Note: *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

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. (0/3)

Prerequisite: A grade of "C" or higher in Jazz Combo III.

Note: *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

Men's Ensemble III, through rehearsal and performance, provides a small vocal ensemble experience. This course requires various performances outside of class. (0/2)

Prerequisite: A grade of "C" or higher in Men's Ensemble II.

Co-requisite: Concert Choir or Chamber Choir.

Note: *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

Concert Choir IV, through rehearsal and performance, provides a large vocal ensemble experience. This course requires various performances outside of class. (0/3)

Prerequisite: A grade of "C" or higher in Concert Choir III.

Note: *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

Concert Band II, through rehearsal and performance, provides a large instrumental ensemble experience. This course requires various performances outside of class. (0/3)

Prerequisite: A grade of "C" or higher in Concert Band I.

Note: *Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.*

MUS 247 Choreography I 1.0

Choreography I provides detailed instruction in dance steps and body movement to enhance choral performance. Students learn choreography to complete a musical show. (0/2)

Prerequisite: Must audition.

Co-requisite: Show Choir I.

Note: *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

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. (0/2)

Prerequisite: A grade of "C" or higher in Men's Ensemble III.

Co-requisite: Must be enrolled in another Ensemble Music course.

Note: *Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music may be counted toward a degree.*

MUS 264 Choreography II 1.0

Choreography II provides detailed instruction in dance steps and body movement to enhance choral performance at an intermediate level. Students learn choreography to complete a musical show. (0/2)

Prerequisite: A grade of "C" or higher in Choreography I.

Co-requisite: Show Choir III.

Note: *Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.*

MUS 277 Jazz Lab Band 1.0

The Jazz Lab Band will introduce the student to a working band atmosphere and give them an opportunity for performances. Course content includes learning the standard dance band repertoire. A total of four credits may be counted toward a degree. (0/3)

Prerequisite: Must audition.

Note: *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

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. (3/0)

Note: *Co-numbered with DRA 305.*

MUS 306 Digital Audio Production I 3.0
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. (3/0)

MUS 307 Digital Audio Production II 3.0
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. (3/0)
Prerequisite: A grade of "C" or higher in Digital Audio Production I.

MUS 310 Recording Project I 1.0
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 their current skill level. Students assist in producing a two to four track album. (0/2)
Prerequisite: A grade of "C" or higher in Digital Audio Production I.

MUS 311 Recording Project II 1.0
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 their current skill level. Students assist in producing a two to four track album. (0/2)
Prerequisite: A grade of "C" or higher in Recording Project I.

MUS 312 Recording Project III 1.0
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 their current skill level. Students assist in producing a two to four track album. (0/2)
Prerequisite: A grade of "C" or higher in Recording Project II.

MUS 313 Recording Project IV 1.0
Recording Project IV provides students with the opportunity to be involved in the complete cycle of an audio recording project. Students in Recording Project IV learn to organize and mix a project recording session and assume the role of studio musician and perform additional tasks according to their current skill level. Students assist in producing a two to four track album. (0/2)
Prerequisite: A grade of "C" or higher in Recording Project III.

MUS 320 Technical Music Practicum I 1.0
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. (0/2)
Co-requisite: Introduction to Audio.

MUS 321 Technical Music Practicum II 1.0
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. (0/2)
Prerequisite: A grade of "C" or higher in Technical Music Practicum I.

MUS 322 Technical Music Practicum III 1.0
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. (0/2)
Prerequisite: A grade of "C" or higher in Technical Music Practicum II.

MUS 323 Technical Music Practicum IV 1.0
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. (0/2)
Prerequisite: A grade of "C" or higher in Technical Music Practicum III.

MUS 325 Mix Listening I 3.0
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. (3/0)
Prerequisites: A grade of "C" or higher in Introduction to Audio and Digital Audio Production I.

MUS 326 Mix Listening II 3.0
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 their 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. (3/0)
Prerequisite: A grade of "C" or higher in Mix Listening I.

MUS 328 Virtual Instrument and Processing Plug-Ins 3.0
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. (2/2)
Prerequisite: A grade of "C" or higher in Digital Audio Production I.

MUS 330 Audio Mixing I 3.0
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. (3/0)
Prerequisite: A grade of "C" or higher in Mix Listening I or Digital Audio Production II.

MUS 331 Audio Mixing II 3.0

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. (3/0)

Prerequisite: A grade of "C" or higher in Audio Mixing I.

MUS 333 Popular Music Analysis 3.0

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 their approach to mixing an album so that it may reach its full artistic potential. (3/0)

Prerequisite: A grade of "C" or higher in Mix Listening I.

MUS 335 Audio Mastering 3.0

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. (3/0)

Prerequisite: A grade of "C" or higher in Audio Mixing I.

MUS 350 Percussion Ensemble I 1.0

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. (0/2)

Prerequisite: Must audition.

Note: 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

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. (0/2)

Prerequisite: A grade of "C" or higher in Percussion Ensemble I.

Note: 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

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. (0/2)

Prerequisite: A grade of "C" or higher in Percussion Ensemble II.

Note: 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

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 per-

cussion techniques and concepts. Open to all students. (0/2)

Prerequisite: A grade of "C" or higher in Percussion Ensemble III.

Note: 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

Women's Ensemble I, through rehearsal and performance, provides a small vocal ensemble experience. This course requires various performances outside of class. (0/2)

Prerequisite: Must audition.

Co-requisite: Concert Choir or Chamber Choir.

Note: 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

Women's Ensemble II, through rehearsal and performance, provides a small vocal ensemble experience. This course requires various performances outside of class. (0/2)

Prerequisite: A grade of "C" or higher in Women's Ensemble I.

Co-requisite: Concert Choir or Chamber Choir.

Note: 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

Women's Ensemble III, through rehearsal and performance, provides a small vocal ensemble experience. This course requires various performances outside of class. (0/2)

Prerequisite: A grade of "C" or higher in Women's Ensemble II.

Co-requisite: Concert Choir or Chamber Choir.

Note: 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

Women's Ensemble IV, through rehearsal and performance, provides a small vocal ensemble experience. This course requires various performances outside of class. (0/2)

Prerequisite: A grade of "C" or higher in Women's Ensemble III.

Co-requisite: Concert Choir or Chamber Choir.

Note: 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

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. (0/5)

Prerequisite: Must audition.

Note: 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

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. (0/5)

Prerequisite: A grade of "C" or higher in Marching Band I.

Note: 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

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. (0/3)

Prerequisite: Must audition.

Note: 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

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. (0/3)

Prerequisite: A grade of "C" or higher in Winter Guard I.

Note: 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

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. Students must commit to two semesters (one academic year). (0/3)

Prerequisite: Must Audition.

Co-requisites: Concert Choir I, and Choreography I.

Note: 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

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). (0/3)

Prerequisite: A grade of "C" or higher in Show Choir I.

Co-requisite: Concert Choir or Chamber Choir.

Note: 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

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. Students must commit to two semesters (one academic year). (0/3)

Prerequisite: A grade of "C" or higher in Show Choir II.

Co-requisites: Concert Choir or Chamber Choir, and Choreography II.

Note: 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

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). (0/3)

Prerequisite: A grade of "C" or higher in Show Choir III.

Co-requisite: Concert Choir or Chamber Choir.

Note: 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 3.0

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 com-

ound meters, as well as scales, key signatures, and diatonic chords in major and minor keys. (3/0)

Prerequisite: Must audition.

Co-requisite: Ear Training and Sight Singing I.

Note: This course is for Music and Technical Music majors only.

MUS 401 Music in Theory and Practice II 3.0

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. (3/0)

Prerequisite: A grade of "C" or higher in Music in Theory and Practice I.

Co-requisite: Ear and Training and Sight Singing II.

MUS 402 Music in Theory and Practice III 3.0

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. (3/0)

Prerequisite: A grade of "C" or higher in Music in Theory and Practice II.

Co-requisite: Ear Training and Sight Singing III.

MUS 403 Music in Theory and Practice IV 3.0

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. (3/0)

Prerequisite: A grade of "C" or higher in Music in Theory and Practice III.

Co-requisite: Ear Training and Sight Singing IV.

MUS 410 Ear Training and Sight Singing I 1.0

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. (1/0)

Co-requisite: Music in Theory and Practice I.

MUS 411 Ear Training and Sight Singing II 1.0

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. (1/0)

Prerequisite: A grade of "C" or higher in Ear Training and Sight Singing I.

Co-requisite: Music in Theory and Practice II.

MUS 412 Ear Training and Sight Singing III 1.0

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. (1/0)

Prerequisite: A grade of "C" or higher in Ear Training and Sight Singing II.

Co-requisite: Music in Theory and Practice III.

MUS 413 Ear Training and Sight Singing IV 1.0

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. (1/0)

Prerequisite: A grade of "C" or higher in Ear Training and Sight Singing III.

Co-requisite: Music in Theory and Practice IV.

- MUS 430** **Woodwind Ensemble I** 1.0
Woodwind Ensemble I, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class. (0/2)
Prerequisite: Must Audition.
Note: *Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.*
- MUS 431** **Woodwind Ensemble II** 1.0
Woodwind Ensemble II, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class. (0/2)
Prerequisite: A grade of "C" or higher in Woodwind Ensemble I.
Note: *Does not meet humanities requirement for graduation; a total of eight credits in Ensemble Music courses may be counted toward a degree.*
- MUS 432** **Woodwind Ensemble III** 1.0
Woodwind Ensemble III, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class. (0/2)
Prerequisite: A grade of "C" or higher in Woodwind Ensemble II.
Note: *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
Woodwind Ensemble IV, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class. (0/2)
Prerequisite: A grade of "C" or higher in Woodwind Ensemble II.
Note: *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
Brass Ensemble I, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class. (0/2)
Prerequisite: Must Audition.
Note: *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
Brass Ensemble II, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class. (0/2)
Prerequisite: A grade of "C" or higher in Brass Ensemble I.
Note: *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
Brass Ensemble III, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class. (0/2)
Prerequisite: A grade of "C" or higher in Brass Ensemble II.
Note: *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
Brass Ensemble IV, through rehearsal and performance, provides a small instrumental ensemble experience. This course requires various performances outside of class. (0/2)
Prerequisite: A grade of "C" or higher in Brass Ensemble III.
Note: *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
Chamber Choir I, through rehearsal and performance, provides a small vocal ensemble experience covering advanced repertoire. This course requires various performances outside of class. (0/3)
Prerequisite: Must Audition.
Note: *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
Chamber Choir II, through rehearsal and performance, provides a small vocal ensemble experience covering advanced repertoire. This course requires various performances outside of class. (0/3)
Prerequisite: A grade of "C" or higher in Chamber Choir I.
Note: *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
Chamber Choir III, through rehearsal and performance, provides a small vocal ensemble experience covering advanced repertoire. This course requires various performances outside of class. (0/3)
Prerequisite: A grade of "C" or higher in Chamber Choir II.
Note: *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
Chamber Choir IV, through rehearsal and performance, provides a small vocal ensemble experience covering advanced repertoire. This course requires various performances outside of class. (0/3)
Prerequisite: A grade of "C" or higher in Chamber Choir III.
Note: *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
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. (0/2)
Prerequisite: Must audition.
Note: *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
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. (0/2)
Prerequisite: A grade of "C" or higher in Fall Pep Band I.
Note: *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
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. (0/2)
Prerequisite: Must audition.
Note: *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

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. (0/2)

Prerequisite: A grade of "C" or higher in Spring Pep Band I.

Note: Does not meet humanities requirement for graduation; a total of eight credits in ensemble music courses may be counted toward a degree.

MUS 935 Technical Music Internship 3.0

Technical Music 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. (0/12)

Prerequisite: Permission from the instructor.

Nursing

ADN 106 Success in Nursing 1.0

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. (1/0/0)

ADN 131 Bridging LPN to ADN, Theory and Laboratory 2.0

Bridging LPN to ADN, Theory and Laboratory introduces the LPN to the philosophy and organizing framework of the Iowa Western nursing program. The learner is exposed to the concepts of health patterns, nursing process, and nursing roles. The laboratory component focuses on the enhancement of nursing skills. (1.5/1.5)

Prerequisite: Current licensure as practical nurse.

ADN 132 Professional Topics III 1.0

Professional Topics III introduces the learner to the roles and responsibilities of the associate degree nurse. This course compares and contrasts functions of nurses educated at different levels and discusses the legal responsibilities of the registered nurse. (1/0)

Prerequisites: Practical Nursing license, or a grade of "C" or higher in all first-semester Practical Nursing program courses and application for NCLEX-PN.

ADN 133 Health Assessment Across the Life Span 1.5

Health Assessment Across the Life Span provides the learner with the knowledge and skills to perform a health assessment and develop nursing diagnoses. The course includes interviewing techniques, health history-taking, physical, cultural, psychosocial, and mental status assessments in clients across the life span. (1/1.5)

Prerequisite: Current standing as ADN student.

Prerequisite/Co-requisite: Introduction to Psychology.

ADN 171 Concepts of Nursing I 5.0

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. (5/0/0)

Prerequisite: A grade of "C" or higher in Pharmacology Applications, Trends and Issues, and Success in Nursing.

ADN 180 Advanced Concepts of Nursing 2.0

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. (2/0)

Prerequisite: A grade of "C" or higher in Maternal Child Nursing II, Concepts of Nursing I, and Concepts of Nursing Clinic.

ADN 213 Pharmacology Applications 4.0

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. (3.5/0.5/0)

ADN 222 Pharmacology 3.0

Pharmacology expands the learner's knowledge of drug classification, therapeutic actions, side effects, and drug interactions. The course assists the learner to understand the role of pharmacological agents in relation to health needs and stresses health teaching. (3/0)

Prerequisites: Practical Nursing license, or a grade of "C" or higher in all first-semester Practical Nursing program courses and application for NCLEX-PN.

ADN 292 Advanced Mental Health Nursing 2.0

Advanced Mental Health Nursing examines advanced psychiatric mental health nursing concepts. Students gain an understanding of their role in creating a therapeutic environment. Emphasis is placed on utilizing the nursing process to provide care for clients with psychiatric disorders. (2/0/0)

Prerequisite: A grade of "C" or higher in Maternal Child Nursing II, Concepts of Nursing I, and Concepts of Nursing Clinic.

ADN 320 Professional Topics IV 1.0

Professional Topics IV explores the education, employment, political, and societal aspects of professional nursing. It introduces research in nursing. (1/0)

Prerequisites: Nursing Care Through the Lifespan III and Professional Topics III.

Co-requisite: Nursing Care Through the Lifespan IV.

ADN 330 Professional Topics V 1.0

Professional Topics V applies best practice aspects of patient care from theory in Professional Topics III and IV as students develop an evidenced-based project identifying cultural, financial, therapeutic communication skills, patient management, ethical and legal components. (1/0)

Prerequisites: Nursing Care through the Lifespan IV and Professional Topics IV.

Co-requisite: Nursing Care through the Lifespan V.

ADN 421 Maternal Child Nursing II 3.0

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. (2.75/0.25/0)

Prerequisites: A grade of "C" or higher in Pharmacology Applications, Trends and Issues, and Success in Nursing.

ADN 499 Passage to Professional Practice 1.0

Passage to Professional Practice will prepare the student to enter professional practice. Personal wellness and preparation for licensure will be covered. (1/0/0)

Prerequisite: A grade of "C" or higher in Maternal Child Nursing II, Concepts of Nursing I, and Concepts of Nursing Clinic.

ADN 631 Nursing Care Through the Life Span III 4.0

Nursing Care Through the Life Span III provides content organized under selected health patterns. The learner focuses on identifying variables within the environment that impact the delivery of nursing care to meet the health needs of clients in variable health care settings. In clinical, the learner assumes the roles of the provider of care, communicator, teacher, manager of care, and member of the profession. The clinical focuses on delivery of care to clients across the life span with variable normal and abnormal responses to health and illness. (2/6)

Prerequisites: Practical Nursing license, or a grade of "C" or higher in all first-semester Practical Nursing program courses and application for NCLEX-PN.

ADN 632 Nursing Care Through the Life Span IV 8.5

Nursing Care Through the Life Span IV consists of selected health patterns. In both theory and clinical, the learner focuses on applying foundational assessment skills while integrating the nursing process and theory concepts during the planning and implementation of care to groups of assigned clients while functioning in the roles of the provider of care, communicator, teacher, manager of care, and member of the profession. The learner provides care to groups of assigned clients across the life span in variable health care settings with the ultimate goal of health maintenance and/or health restoration. In clinical, the learner assumes the roles of the provider of care, communicator, teacher, manager of care, and member of the profession. (4/13.5)

Prerequisites: Nursing Care Through the Life Span III and licensed practical nurse.

Prerequisites/Co-requisites: Microbiology and Nutrition.

ADN 633 Nursing Care Through the Life Span V 10.0

Nursing Care Through the Life Span V provides selected health patterns. The learner focuses on the refinement and analysis of assessment data while utilizing related concepts to formulate, implement, and evaluate nursing decisions related to the health care needs of groups of clients and significant others across the life span. In clinical, the learner analyzes data, plans, modifies, and evaluates care while functioning in the roles of the provider of care, communicator, teacher, manager of care, and member of the profession. The learner assists the individual(s) to achieve an optimal level of health that integrates principles of health maintenance, health restoration, and/or health promotion. (5/15)

Prerequisites: Nursing Care Through the Life Span IV, Health Assessment Across the Life Span, Microbiology, and Pharmacology.

Co-requisites: Introduction to Sociology and Microbiology.

ADN 740 Concepts of Nursing Clinic 3.0

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. (0/3/0)

Prerequisite: A grade of "C" or higher in Pharmacology Applications, Trends and Issues, and Success in Nursing.

ADN 760 Advanced Concepts of Nursing Clinical 4.0

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. (0/0/4)

Prerequisite: A grade of "C" or higher in Maternal Child Nursing II, Concepts of Nursing I, and Concepts of Nursing Clinic.

ADN 831 Trends and Issues 3.0

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. (3/0/0)

PNN 167 Foundations of Nursing 5.0

Foundations of Nursing focuses on the tasks a beginning nurse is responsible for, along with the scientific rationale for each task. Beginning nursing skills are integrated from classroom to clinical laboratory. Critical thinking will be incorporated into task completion. This course introduces the student to the first of a two-part nursing course sequence completed in the first semester of nursing. (4.5/5)

PNN 168 Practical Nursing I 5.0

Practical Nursing I allows the practical nursing students to implement nursing care through the lifespan while focusing on musculoskeletal, mental health, sensory, cardiovascular, respiratory, obstetrical, and communicable conditions. This is the second of a two-part nursing course sequence completed in the first semester of nursing. (3/6)

Prerequisites: A grade of "C" or higher in Foundations of Nursing and Introduction to Math and Medications.

PNN 177 Practical Nursing II 4.5

Practical Nursing II allows the practical nursing student to implement nursing care for individuals through the lifespan while focusing on the theoretical concepts of obstetrical and mental health nursing, cancer, and the gastrointestinal and reproductive body systems. This is the first of a two-part nursing course sequence completed in the second semester of nursing. (2.5/6)

Prerequisite: A grade of "C" or higher in all first-semester nursing courses.

PNN 178 Practical Nursing III 4.5

Practical Nursing III allows the practical nursing student to implement nursing care for individuals through the lifespan while focusing on the genitourinary, respiratory, neurological and cardiovascular body systems. This is the second of a two-part nursing course sequence completed in the second semester of nursing. (2.5/6)

Prerequisite: A grade of "C" or higher in Practical Nursing II.

PNN 201 Introduction to Math and Medications 1.0

Introduction to Math and Medications introduces the concepts of medication administration. It includes legal implications and mathematical computations specific to pharmacology. (1/0)

PNN 205 Practical Nursing Pharmacology 1.0

Practical Nursing Pharmacology assists the student in identification of drugs by classification, therapeutic action, and adverse effects for clients across the life span. General nursing interventions related to drug classification are emphasized. (1/0)

Prerequisite: A grade of "C" or higher in all first-semester nursing courses.

PNN 228 Foundations of Nursing I 6.0

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. (5.75/0/0.75)

PNN 229 Foundations of Nursing II 4.0

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. (4/0/0)

Prerequisite: A grade of "C" or higher in Foundations of Nursing I, Health Assessment Across the Lifespan, and Foundations of Nursing Clinic I.

PNN 282 Pharmacology II 2.0

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. (2/0/0)

Prerequisite: A grade of "C" or higher in Foundations of Nursing I, Health Assessment Across the Lifespan, and Foundations of Nursing Clinical I.

PNN 290 Health Assessment Across the Lifespan 2.0

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. (1.25/1.5/0)

PNN 321 Professional Topics I 1.0

Professional Topics I introduces the learner to the art of nursing. The learner examines the concepts of health patterns, nursing process, and nursing roles utilized in the care of clients with common health needs across the life span. Legal and ethical roles are emphasized. (1/0)

Prerequisites: Composition I and Public Speaking.

PNN 322 Professional Topics II 1.0

Professional Topics II emphasizes the management concepts, communication skills, legal, and ethical responsibilities the learner incorporates into the role of the graduate practical nurse. (1/0)

Prerequisite: A grade of "C" or higher in all first-semester nursing courses.

PNN 446 Nursing Care of the Growing Family 4.0

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. (3.5/1/0)

Prerequisite: A grade of "C" or higher in Foundations of Nursing I, Health Assessment Across the Lifespan, and Foundations of Nursing Clinical I.

PNN 721 Foundations of Nursing Clinical I 2.0

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. (0/0/6)

PNN 723 Foundations of Nursing Clinical II 2.0

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. (0/0/2)

Prerequisite: A grade of "C" or higher in Foundations of Nursing I, Health Assessment Across the Lifespan, and Foundations of Nursing Clinic I.

Paralegal and Legal Studies

PRL 101 Paralegal Studies Orientation 3.0

Paralegal Studies Orientation surveys the paralegal profession with special emphasis on the major roles and responsibilities of the legal assistant. The course explores the knowledge base required to be a legal assistant and considers the history of the profession. (3/0)

PRL 115 Legal Research and Writing 4.0

Legal Research and Writing explores methods and techniques regarding issue recognition, finding sources of the law, applying the law to specific situations, and creating documentary work products. Students utilize computer-aided legal research. Course work includes basic legal documents as well as completion of major research and writing projects. (4/0)

Prerequisite: Composition I.

PRL 126 Evidence 3.0

Evidence covers the basic concepts of relevancy, competency, materiality, privilege, hearsay, and the difference between direct and circumstantial evidence. It also examines pretrial and trial techniques and meeting the burden of proof in both civil and criminal cases. (3/0)

Prerequisite: Permission from the instructor.

PRL 131 Torts and Litigation I 3.0

Torts and Litigation I introduces the basic laws relating to personal and property damage. Topics include intentional tort, negligence, and strict liability. Principles of trial practice including case evaluation, basic discovery methods, and basic pleadings are emphasized. (3/0)

PRL 161 Family Law 3.0

Family Law considers domestic relationships: marriage, annulment, divorce, adoption, child custody, abuse, and the growing concern of care for elderly relatives. (3/0)

PRL 168 Property/Probate 3.0

Property/Probate encompasses real and personal property subject matter including the acquisition, transfer and destruction of such property. This course provides an overview of common property issues including common transfers such as sale and disposition at death. (3/0)

Prerequisite: Paralegal Studies Orientation.

PRL 281 Legal Ethics 2.0

Legal Ethics examines the roles and duties of the paralegal within the limitations of the Code of Professional Responsibility. The course covers client interviewing and note taking techniques in order to avoid the unauthorized practice of law. Emphasis centers on the preservation of client confidentiality and the recognition of conflicts of interest. (2/0)

Prerequisite: Paralegal Studies Orientation.

PRL 933 Internship 3.0

Internship provides direct work-related experience in various legal environments. Students apply skills acquired in the program to everyday responsibilities encountered by legal assistants. The internship is directly supervised by attorneys in conjunction with the instructor. (0/12)

Prerequisites: Paralegal Studies Orientation; Legal Research and Writing; and permission from the instructor.

Prerequisite/Co-requisite: Legal Ethics.

Philosophy

PHI 101 Introduction to Philosophy 3.0

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 their understanding of these problems and their 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. (3/0)

PHI 105 Introduction to Ethics 3.0

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. (3/0)

PHI 111 Basic Reasoning 3.0

Basic Reasoning is designed to assist students in developing reasoning and critical thinking skills. Students will learn to identify and analyze ideas and arguments, use inductive and deductive reasoning, and practice evaluating reasoning found in variety of contexts including media, internet, and culture. (3/0)

PHI 142 Ethics in Business 3.0

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. (3/0)

PHI 211 Ethics in the Media 3.0

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, copy-right, 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. (3/0)

Note: Co-numbered with JOU 211

Physical Education and Wellness

PEA 162 Speed and Conditioning I 1.0

Speed and Conditioning I is an activity course that will focus on the coordination of muscular movements for sport-specific performance. (0/2)

Prerequisite: Permission from the instructor.

PEA 177 Speed and Conditioning II 1.0

Speed and Conditioning II is an activity course that will focus on the speed of muscular movements for sport-specific performance. (0/2)

Prerequisite: Speed and Conditioning I.

PEA 187 Weight Training I 1.0

Weight Training I provides basic fundamental instruction in the performance of weight training exercises focusing on safety. (0/2)

PEA 287 Weight Training II 1.0

Weight Training II provides advanced fundamental instruction in the performance of weight training exercises with emphasis on singular muscle movement. (0/2)

Prerequisite: Weight Training I.

PEC 101 Introduction to Coaching 3.0

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. (3/0)

PEC 161 Sports Officiating 3.0

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. (3/0)

PEC 230 Introduction to Sports Medicine 3.0

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. (3/0)

PEC 231 Theory and Principles of Recreational Sport 3.0

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. (3/0)

PEH 102 Health 3.0

Health provides an overview of selected areas related to promoting one's physical well-being and general health. It surveys the role of healthy lifestyles in the physical, emotional, sexual, and spiritual dimensions of humans. (3/0)

PEH 130 CPR and First Aid in the Workplace 1.0

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. (1/0)

PEH 142 First Aid 3.0

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. (3/0)

PEH 170 Principles of Weight Training 3.0

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. (2/2)

PEH 908 Cooperative Education 1.0 - 6.0

Cooperative Education provides work experience related to physical education. Work experience hours are arranged. (0/4-24)

Prerequisite: Permission from the program chair.

PET 230 Care and Prevention of Athletic Injuries 3.0

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. (3/0)

Prerequisite: Introduction to Sports Medicine.

PET 240 Taping and Bracing 2.0

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. (2/0)

PEV 105 Varsity Sports Participation I 1.0

Varsity Sports Participation I gives credit for knowledge and skills gained through varsity sports participation. (0/2)

Prerequisite: Permission from the instructor.

PEV 109 Varsity Sports Participation II 1.0

Varsity Sports Participation II gives credit for advanced knowledge gained through varsity sports participation. (0/2)

Prerequisite: Varsity Sports Participation I.

PEV 185 Progressive Resistance Training I 1.0
 Progressive Resistance Training I introduces students with no prior background to sport specific resistance training. (0/2)
Prerequisite: Permission from the instructor.

PEV 187 Progressive Resistance Training II 1.0
 Progressive Resistance Training II continues exposure to students with moderate background in sport specific resistance training. (0/2)
Prerequisite: Progressive Resistance Training I.

Physical Science

PHS 142 Principles of Astronomy 3.0
 Principles of Astronomy is the study of the universe. It covers life in space, history of the planets, stellar structures, the universe, and current theories on astrophysical phenomena. (3/0)

PHS 143 Principles of Astronomy Lab 1.0
 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. (0/2)

Prerequisites/Co-requisites: A grade of "C" or higher or concurrent enrollment in Principles of Astronomy, and one of the following: Math placement, or a grade of "C" or higher in College Prep Math.

PHS 160 Introduction to Oceanography 3.0
 Introduction to Oceanography gives an overview of the interwoven natural history of today's oceans from the origins and geology of ocean basins, through the nature of marine waters, the motion of waves, movement of currents, and the global ocean-atmospheric system. Waves, tsunamis, tides, coasts, beaches, and beach processes as well as some environmental issues and living creatures that dwell in the oceans are discussed. (3/0)

PHS 165 Introduction to Meteorology 3.0
 Introduction to Meteorology provides modern studies of the atmosphere and atmospheric phenomena. Course examines atmospheric composition characteristics, fronts, and air masses. It includes weather charts, weather forecasts, clouds, storms, air pollution, and weather modification. (3/0)

PHS 172 Physical Geology 4.0
 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. (3/2)

PHS 187 Introduction to Earth Science 4.0
 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. (3/2)

Physical Therapist Assistant

PTA 102 Introduction to Physical Therapist Assistant 3.0
 Introduction to Physical Therapist Assistant provides an overview of the physical therapy profession, educational requirements, projected future needs and responsibilities, and the American Physical Therapy Association. Students are introduced to licensure requirements, ethical considerations, and professional communication needs. (3/0/0)

PTA 105 Basic Skills for the Physical Therapist Assistant 3.0
 Basic Skills for the Physical Therapist Assistant introduces the student to basic patient care interventions. Interventions include, but are not limited to, patient handling techniques, transfers, gait training, wheelchair management, and asepsis techniques. (2/3/0)

PTA 107 Documentation for Physical Therapist Assistant 1.0
 Documentation for Physical Therapist Assistant Documentation for Physical Therapist Assistant illustrates current documentation formats and guidelines used in healthcare. Students are introduced to the physical therapy process and legal and ethical considerations for documentation. Other topics include understanding the plan of care and physical therapist assistant's role in providing interventions as directed by the physical therapist. (1/0/0)
Prerequisite: Introduction to Physical Therapist Assistant

PTA 120 Kinesiology 3.0
 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. (2/2/0)
Prerequisite: A grade of "C" or higher in Human Anatomy and Physiology I.

PTA 181 Therapeutic Modality 3.0
 Therapeutic Modality provides an in-depth overview of the theoretical and practical application of various physical agents and modalities utilized in physical therapy. Students learn to recognize common indications, contraindications, and special precautions for the safe and appropriate application of thermal, mechanical, electromagnetic and hydrodynamic therapeutic procedures. (2/3/0)
Prerequisite: Basic Skills for the Physical Therapist Assistant.

PTA 215 Orthopedic Issues 4.0
 Orthopedic Issues provides a review of normal skeletal anatomy. Students explore and discuss body joints as they relate to stability, appropriate motion, and reasons for dysfunctions. Treatment regime options for basic orthopedic surgeries, injuries or dysfunctions are investigated. (3/3/0)
Prerequisites: Therapeutic Modality, Pathophysiology, and Therapeutic Exercise I.

PTA 222 Therapeutic Exercise I 3.0
 Therapeutic Exercise I introduces the student to the principles of exercise and physical activity. Acute and chronic physiological responses and adaptations as they relate to exercise training and progression are explored. Also included is the study and application of endurance, stretching, and strengthening programs. (2/3/0)
Prerequisites: Introduction to Physical Therapist Assistant, Basic Skills for the Physical Therapist Assistant.
Prerequisite/Co-requisite: Kinesiology.

PTA 227 Therapeutic Exercise II 3.0
 Therapeutic Exercise II includes classroom and laboratory instruction on the principles and rehabilitation of special patient populations. Topics include prevention, management, and therapeutic progression of specific medical conditions. (2/2/0)
Prerequisites: Therapeutic Exercise I and Pathophysiology.

PTA 248 Neurology 4.0
Neurology provides an overview of the human nervous system, including the anatomy, neurodevelopment, and function across the life span. The course investigates theories of motor control and learning in the application and progression of therapeutic interventions. Laboratory experiences explore patient handling and mobility training along with sensory and motor data collection techniques. (3/3/0)

Prerequisites: Basic Skills for the Physical Therapist Assistant, Pathophysiology, and Therapeutic Exercise I.

PTA 280 Seminar 1.0
Seminar presents topics to assist students in the transition into the workforce as entry level physical therapist assistants. Students will apply knowledge from previous coursework and clinical experience by completing a case study presentation to peers and faculty. (1/0/0)

Co-requisite: Physical Therapist Assistant Clinical IV.

PTA 310 Clinical I 1.0
Clinical I introduces the application of concepts and skills learned in previous PTA course work to hands-on patient care within the plan of care established by the physical therapist in selected clinical settings. It includes orientation to the clinical area, observation of clinical procedures and limited practice with basic procedures. (0/0/3)

Prerequisite: Introduction to Physical Therapist Assistant and Basic Skills for the Physical Therapist Assistant.

Note: *This course is offered on a pass/no pass basis only.*

PTA 385 Physical Therapist Assistant Clinical II 3.0
Physical Therapist Assistant Clinical II provides the student opportunities to implement patient care within the plan of care established by the physical therapist in selected clinical settings by applying concepts and skills learned in previous PTA coursework. (0/0/9)

Prerequisite: Clinical I.

Note: *This course is offered on a pass/no pass basis only.*

PTA 412 Physical Therapist Assistant Clinical III 4.0
Physical Therapist Assistant Clinical III challenges the student to apply previously learned clinical skills and develop proficiency in more complicated concepts and advanced skills through direct patient care in a clinical experience. (0/0/15)

Prerequisite: Physical Therapist Assistant Clinical II.

Note: *This course is offered on a pass/no pass basis only.*

PTA 414 Physical Therapist Assistant Clinical IV 5.0
Physical Therapist Assistant Clinical IV incorporates all clinical skills and provides direct patient care in a complex clinical experience. Students utilize previously learned concepts and work with complex cases to further enhance clinical competencies. (0/0/18)

Prerequisite: Physical Therapist Assistant Clinical III.

Note: *This course is offered on a pass/no pass basis only.*

Physics

PHY 156 General Physics I 4.0
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. (4/0)

Prerequisite: Math placement; or a grade of "C" or higher in Intermediate Algebra.

PHY 157 General Physics I Lab 1.0
General Physics I Lab is a one-semester laboratory course for students enrolled in General Physics I. Topics include mechanics, wave motion, and sound. (0/2)

Prerequisite/Co-requisite: General Physics I.

PHY 210 Classical Physics I 4.0
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. (4/0)

Prerequisite/Co-requisite: Calculus II.

PHY 211 Classical Physics I Lab 1.0
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. (0/2)

Prerequisite/Co-requisite: Classical Physics I.

PHY 220 Classical Physics II 4.0
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. (4/0)

Prerequisite: Calculus II.

PHY 221 Classical Physics II Lab 1.0
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. (0/2)

Prerequisite/Co-requisite: Classical Physics II.

PHY 715 Technical Physics I 5.0
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. (3/4)

Political Science

POL 111 American National Government 3.0
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. (3/0)

POL 112 American State and Local Government 3.0
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. (3/0)

POL 121 International Relations 3.0
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. (3/0)

Note: *Meets diversity requirement for graduation.*

POL 201 The U.S. Constitution 3.0
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. (3/0)

Psychology

PSY 111 Introduction to Psychology 3.0

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. (3/0)

PSY 113 Personality and Adjustment 3.0

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 their personalities and what motivates them to behaviors. This course allows students an opportunity to become more aware of themselves and their own personalities as a normal process of growth. (3/0)

PSY 121 Developmental Psychology 3.0

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. (3/0)

PSY 210 Sport and Exercise Psychology 3.0

Sport and Exercise Psychology is the scientific study of people and their behavior in a sport and exercise context. Principles and guidelines are identified to help gain benefits from sport and exercise activities. (3/0)

PSY 224 Adolescent Psychology 3.0

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. (3/0)
Prerequisite: Introduction to Psychology or permission from the instructor.

PSY 241 Abnormal Psychology 3.0

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. (3/0)

Prerequisite: Introduction to Psychology.

PSY 251 Social Psychology 3.0

Social Psychology explores the impact of the social environment on individual functioning. Humans are social animals born into ongoing social worlds which shape their thoughts, feelings and personalities. Social Psychology scientifically examines such topics as attitude change, prejudice, conformity, obedience, aggression, and attraction. (3/0)

Prerequisite: Introduction to Psychology or Introduction to Sociology.

PSY 261 Human Sexuality 3.0

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 their views and values concerning sexual behavior. (3/0)

Prerequisite: Students must have taken one of the following three courses: Introduction to Psychology, Introduction to Sociology, or Marriage and Family.

PSY 281 Educational Psychology 3.0

Educational Psychology applies the principles of psychology to classroom contexts. Topics include child/adolescent development, learning, motivation, instructional techniques, and assessment/evaluation. (3/0)

Prerequisite: Child Growth and Development or Developmental Psychology.

Note: Co-numbered with EDU 240

PSY 293 Issues in Psychology 3.0

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 (3/0)

Prerequisite: Introduction to Psychology.

Religion

REL 101 Survey of World Religions 3.0

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. (3/0)

Note: Meets diversity requirement for graduation.

Robotics

ATR 113 Industrial Robotics 3.0

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 an structure, decision making, motion and peripheral control, and vision systems. (3/0)

Co-requisite: Industrial Robotics Lab.

ATR 114 Industrial Robotics Lab 2.0

Industrial Robotics Lab provides students hands-on experience with the start-up, operation, and programming of industrial robots, including the use of vision systems. (0/4)

Co-requisite: Industrial Robotics.

ATR 119 Engineering Graphics and Design 3.0

Engineering Graphics and Design integrates skills in engineering graphing, computer modeling, and engineering design. Students learn to read blueprints, develop techniques for visualizing, analyzing, and communicating 3-D geometries, and use applications of the design process to create written and oral reports. (3/0)

ATR 124 Application Planning and Layout 3.0

Application Planning and Layout covers the specifics of how a robotic application/automated manufacturing cell is designed. Topics include robotic placement within the cell, types of robot(s) used within the cell, safety devices, electrical interfacing of controls, programming flow charting, timeline development, fixture design and robot tooling design. (3/0)

Prerequisite: A Grade of "C" or higher in Industrial Robotics.

ATR 133 Fluid Power Systems 2.0

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. (2/0)

ATR 140 Applied Robotics Lab I 6.0

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. (3/6)

Prerequisite: A grade of "C" or higher in Industrial Robotics.

ATR 147 Applied Robotics Lab II 6.0

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. (3/6)

Prerequisites: A grade of "C" or higher in Fluid Power Systems and Applied Robotics Lab I.

ATR 152 Robot Controller Maintenance 2.0

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. (1/2)

Prerequisites: A grade of "C" or higher in Fluid Power Systems and Applied Robotics Lab I.

ATR 165 Advanced Robot Controller Programming 2.0

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. (2/0)

Prerequisites: A grade of "C" or higher in Fluid Power Systems and Applied Robotics Lab I.

Co-requisite: Applied Robotics Lab II.

ATR 170 Robotics/Automated Systems Internship 3.0

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. (0/12)

Prerequisite: Permission of the instructor.

Sociology

SOC 110 Introduction to Sociology 3.0

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). (3/0)

SOC 115 Social Problems 3.0

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. (3/0)

SOC 120 Marriage and Family 3.0

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. (3/0)

SOC 198 The Middle East 3.0

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. (3/0)

Note: Meets diversity requirement for graduation.

SOC 200 Minority Group Relations 3.0

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 their 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. (3/0)

Note: Meets diversity requirement for graduation.

SOC 210 Men, Women and Society 3.0

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. (3/0)

Note: Meets diversity requirement for graduation.

SOC 230 Juvenile Delinquency 3.0

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. (3/0)

SOC 235 Gangs 3.0

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. (3/0)

Prerequisite: Introduction to Sociology, Introduction to Criminal Justice, Criminology, or Juvenile Delinquency.

SOC 240 Criminology 3.0

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. (3/0)

SOC 250 Sociology of Deviance 3.0

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. (3/0)

SOC 908 Cooperative Education 1.0 - 6.0

Cooperative Education provides cooperative work experience related to social science courses. Work experience hours are arranged. (0/4-24)

Prerequisite: Permission from the instructor.

Special Topics

SPT 0 Special Topics 0.0

Special Topics expands the curriculum by allowing students to enroll for up to three semester credits in a specific course or program area. Subject matter may be an in-depth extension of the particular area and is developed by the teaching faculty to meet unique interests and needs of the student. Students may apply up to, but no more than, three semester credit hours of Special Topics courses toward their general education requirements. (1-3/0)

Prerequisite: Minimum of three semester credit hours in the specific course or program area or permission from the instructor.

Speech

SPC 112 Public Speaking 3.0

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. (3/0)

SPC 120 Intercultural Communications 3.0

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. (3/0)

Note: Meets diversity requirement for graduation.

SPC 122 Interpersonal Communication 3.0

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. (3/0)

SPC 160 Voice and Diction 3.0

Voice and Diction explores the structure and working of the human vocal mechanism. Students will learn how to sure and control the voice for effective delivery of oral communications in the workplace, the performing arts and English as a Second Language. Emphasis will be on proper production and articulation of vowels, consonants and diphthongs, vocal quality and expressiveness, and proper breathing for vocal production. (3/0)

Student Development

SDV 108 The College Experience 1.0

The 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 their 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. (1/0)

SDV 114 Strategies for Academic Success 3.0

Strategies for Academic Success is meant to facilitate and promote academic success. The student is exposed to learning strategies focused on the classroom (test taking, note taking, time management, etc.) and beyond (changing habits, personal responsibility, etc.). The student is introduced to tools which will help him/her grow academically, personally, and professionally. This course is a wonderful opportunity to assist with transition to college and provides numerous strategies to create success in and out of the classroom. It is recommended the course be taken the first semester of the freshman year. (3/0)

SDV 130 Career Exploration 1.0

Career Exploration guides students through the career development process, and assists them in making academic choices that support their career choices. Special emphasis is placed on developing an action plan, including an educational plan, for achieving career goals. (1/0)

SDV 140 College Success Skills for English Language Learners 3.0

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. (3/0)

SDV 165 Transfer Planning 1.0

Transfer Planning provides students with the information, resources, and tools necessary to plan a successful transition from Iowa Western to a four-year college or university. Special emphasis is placed on developing individual transfer plans. (1/0)

Surgical Technology

SUR 130 Introduction to Surgical Technology 2.0

Introduction to Surgical Technology introduces the broad field of surgical technology. This introductory course has five basic sections: (1) General Introductory Information, (2) Perioperative Patient Care (3) Introduction to Patient Care (4) Special Patient Populations and (5) Physical Environment and Safety Standards. The course is a prerequisite for the clinical training sequence of courses. (1.5/1.5)

Prerequisites: Ethics, Legal Issues and Professionalism in Surgical Technology; Pharmacology for the Surgical Technologist; and Human Anatomy & Physiology I.

SUR 135 Ethics, Legal Issues and Professionalism in Surgical Technology 2.0

Ethics, Legal Issues and Professionalism in Surgical Technology introduces the characteristics of professionalism, surgical conscience and problem solving as they relate to ethical and legal decision making in surgical technology. (2/0)

SUR 141 Introduction to Basic Surgical Principles 6.0

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. (4/6)

Prerequisites: Ethics, Legal Issues and Professionalism in Surgical Technology; and Human Anatomy and Physiology I.

SUR 215 Basic Surgical Principles 6.0

Basic Surgical Principles continues the concepts of Introduction to Surgical Technology and Introduction to Basic Surgical Principles. Emphasis is placed on preoperative events (PACU, discharge planning, emergency situations, death and dying, organ transplant and procurement). Students will examine health and wellness in relation to internal and external sources of stress. Students will learn the basic knowledge of biomedical science. (4/6)

Prerequisites: Introduction to Surgical Technology, Introduction to Basic Surgical Principles, and Human Anatomy and Physiology I.

SUR 221 Surgical Technology 10.0

Surgical Technology provides clinical experience with related theory for a variety of perioperative assignments to build on existing skills. Students focus on maintaining the integrity, safety, and efficiency of the sterile and non-sterile fields throughout various surgical procedures. The surgical specialties of general, gastrointestinal, genitourinary, gynecology, ENT, plastic, ophthalmology, maxillofacial, orthopedic, and pediatric modifications thereof are studied. Emphasis is on related surgical anatomy, pathology, and procedures, thereby enhancing theoretical knowledge of patient care. (6/12)

Prerequisites: Introduction to Surgical Technology, Introduction to Basic Surgical Principles, and Human Anatomy and Physiology I.

SUR 320 Advanced Surgical Technology 7.0
Advanced Surgical Technology provides clinical experience with related theory in the surgical specialties of neurology, cardiothoracic, trauma, and peripheral vascular. Emphasis is on related surgical anatomy, pathology, and procedures, thereby enhancing theoretical knowledge of patient care, instrumentation, supplies, and equipment. The course provides individualized experience in advanced practice, education, circulating, and managerial skills. Emphasis is on greater technical skills, critical thinking, speed, efficiency, interpersonal communication, and autonomy in the operative setting. Students should be able to prepare, assist with distribution, and dismantle basic surgical cases in the scrub role. (2/15)
Prerequisites: Basic Surgical Principles, Surgical Technology, Human Anatomy and Physiology II.

SUR 420 Pharmacology for the Surgical Technologist 2.0
Pharmacology for the Surgical Technologist introduces pharmacological concepts and medication administration in the surgical arena. This course incorporates principles of measurement and basic arithmetic review, terminology, care and handling of medications and solutions, as well as drugs used in anesthesia. This course requires students to master mathematical principles relating to the field of surgical technology. (2/0)

Sustainable Energy Resources

SER 118 Introduction to Sustainable Construction 3.0
Introduction to Sustainable Construction provides students with a working knowledge of sustainable systems and their impact on the construction industry. Students study sustainable principles, materials, methods, and their impact on the environment. (3/0)

SER 120 Introduction to Renewable Energy 3.0
Introduction to Renewable Energy provides students with a survey of the wind, solar and alternative fuel industries. Students study the development, construction, and operation of wind farms, solar farms and alternative fuels systems. (3/0)

SER 121 Introduction to Biomass Energy Resources 3.0
Introduction to Biomass Energy Resources is designed to provide a basic understanding of biomass as an energy resource. Topics covered include the history of biomass energy usage; the location, magnitude, and availability of biomass energy resources; biomass energy technologies; and the economic and environmental issues associated with using biomass energy resources. (2/2)

SER 130 Introduction to Solar Energy 3.0
Introduction to Solar Energy provides students with an overview of the solar energy industry. Students will study development, construction, and operation of solar panels with emphasis on operation and maintenance. Students will examine both photovoltaic and thermal panels in detail and develop a familiarity with standard procedures. (2/2)

SER 135 Introduction to Alternative Fuels 3.0
Introduction to Alternative Fuels provides students with an overview of the alternative fuel industry and the production processes employed in that industry. Students study the development, construction, and operation of ethanol, bio-diesel and natural gas industries. (2/2)

SER 145 Geothermal Systems 3.0
Geothermal Systems provides students with an introduction to the practical applications of geothermal concepts. Students study energy production and environmental control systems. (2/2)

SER 160 Electricity III 3.0
Electricity III builds on the concepts studied in electricity I and II. Students will study digital device operation and use their understanding of component operation to analyze and troubleshoot devices and systems used in power

generation and conversion. Computer simulations and hands on exercises will be used to develop and deepen understanding of system and device operation. (2/2)

Prerequisite: Electricity II.

SER 165 Advanced Programmable Logic Controllers 3.0
Advanced Programmable Logic Controllers builds on the programmable device control concepts studied in Intro to Programmable Logic Controllers. Students will develop skills in the use of different types of programmable controllers and input/output devices to accomplish various tasks, with a focus on renewable energy system applications. There will be extensive hands on activities wherein students will demonstrate wiring, programming, and troubleshooting skills. (2/2)
Prerequisite: Introduction to Programmable Logic Controllers

SER 170 Advanced Solar Energy: Thermal 3.0
Advanced Solar Energy: Thermal provides students with knowledge and experience in the use of solar energy to produce heat. Students study low, medium, and high temperature collectors and applications for each. (2/2)
Prerequisite: Introduction to Solar Energy.

SER 175 Advanced Solar Energy: Photovoltaic 4.0
Advanced Solar Energy: Photovoltaic provides students with knowledge and experience in the use of solar energy to produce electricity. Students study the production and workings of solar cells and how solar cells are used to produce electricity in small-and large-scale applications. (3/2)
Prerequisite: Introduction to Solar Energy.

SER 180 Renewable Energy Business Practices 3.0
Renewable Energy Business Practices provides an overview of the renewable energy business from an entrepreneurial, financial, regulatory, and ethical perspective. Students will develop an understanding of general business practices as they pertain to the renewable energy environment. (3/0)

SER 190 Advanced Sustainable Energy 3.0
Advanced Sustainable Energy requires students to design and construct basic sustainable energy projects using approved processes to demonstrate the ability to analyze problems, make decisions, and use economical and practical processes. This course concentrates on the study of materials and methods, including the adhering to specifications, fabrication of equipment, troubleshooting, and completion of special projects. (2/2)

SER 195 Advanced Sustainable Energy II 3.0
Advanced Sustainable Energy II requires students to design and construct advanced sustainable energy projects using approved processes to demonstrate the ability to analyze problems, make decisions, and use economical and practical processes. This course concentrates on the study of materials and methods, fabrication of equipment, troubleshooting, and completion of special projects. (2/2)

SER 805 Sustainable Energy Internship 2.0
The Sustainable Energy Internship provides an opportunity for students to gain work experience in a field related to renewable energy. (0/8)
Prerequisite: Permission from the instructor.

SER 905 Sustainable Energy Project 2.0
The Sustainable Energy Project provides an opportunity for students to work as part of a team to research, plan, and develop a virtual renewable energy project from beginning to end. The students will be provided with circumstances and variables that will mimic those encountered in actual project development. (0/6)

Theatre

DRA 101 Introduction to Theatre 3.0

Introduction to Theatre helps the student develop an awareness of and an appreciation for theatrical arts and its impact on western civilization. This course traces the history of plays and the major theatrical developments with regards to genre, architecture, design, and production aspects over the course of 2,500 years. (3/0)

DRA 125 Introduction to Play Analysis 3.0

Introduction to Play Analysis focuses on the reading, discussion, interpretation, and analysis of dramatic texts. It is the aim of this course to provide a concentrated study of beginning play analysis through discussion and written analysis. Students will gain an understanding of the important role that dramatic analysis plays when mounting a production in the theatre. (3/0)

DRA 126 Movement for the Actor 3.0

Movement for the Actor is designed to help the actor develop physical movement skills that can be applied to theatrical performance. (3/0)

Prerequisite: Acting II.

DRA 130 Acting I 3.0

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. (3/0)

DRA 132 Acting II 3.0

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 their collaborative skills on scene-building and ensemble work. (3/0)

Prerequisite: Acting I or permission of the instructor.

DRA 140 Business of Theater 2.0

Business of Theater focuses on presenting students with the practical, day-to-day skills and information needed to be successful in theatrical careers.

Prerequisite: Acting II.

DRA 154 Theater Production 3.0

Theater Production requires students to work as a designer, or as the head of stage crew on a theatrical production. Students work with the director, technical director and various designers, attend and participate in production meetings and rehearsals, and supervise one of the production crews. Each assignment is negotiated between the faculty and the student, and is based on the student's experience, abilities, and interests. In addition, each student conceptualizes a design to present. (3/0)

DRA 165 Stagecraft 3.0

Stagecraft will introduce the students to the principles and techniques used in the construction of stage scenery and properties. Students will learn to read technical drawings and demonstrate an understanding of the various methods and techniques used in scenic construction. They will learn the basic safety rules for scene shops and about the proper care and handling of power and hand tools. Students will acquire and apply their knowledge of the organizational and operational aspects of theatrical productions. (3/0)

DRA 167 Drafting for the Theatre 3.0

Drafting for the Theatre gives students an introduction to the principles and techniques of rendering and drafting for the performing arts. Exercises will include plan view, section view, painter's elevations, and models. This course emphasizes the creation of standard working drawings for the entertainment industry. (3/0)

DRA 178 Stage Costume 3.0

Stage Costume is an introduction to the history and creation of theatrical apparel. Students experience the designing and construction of costumes by hand and machine sewing. Students also learn to select costumes by using existing inventories. (3/0)

DRA 179 Stage Make-Up 3.0

Stage Make-Up is the study of the function, design, and application of theatrical makeup and hair. Students study the theory and history of makeup and hair styling for the theatre, as well as for television and film. (3/0)

DRA 180 Theatre Lab I 1.0

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. (0/3)

DRA 181 Theatre Lab II 1.0

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. (0/3)

Prerequisite: Theatre Lab I.

DRA 220 The American Musical 3.0

The American Musical explores the evolution of the American musical from its roots in British music halls, in opera and operetta, African American jazz and pop music, to the contemporary Broadway stage as well as screen. Students will explore this popular art form and its culture, traditions and identity. (3/0)

DRA 280 Theatre Lab III 1.0

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. (0/3)

Prerequisite: Theatre Lab II.

DRA 281 Theatre Lab IV 1.0

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. (0/3)

Prerequisite: Theatre Lab III.

DRA 305 Introduction to Audio 3.0

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. (3/0)

Note: Co-numbered with MUS 305

DRA 930 Devised Theatre Projects 3.0

Devised Theatre Projects allows students to examine social theories and needs in the current cultural climate and introduces methods to devise a theatrical performance based on those needs. Final projects include a public performance or workshop which addresses those needs. (3/0)

Prerequisite: Introduction to Play Analysis.

Veterinary Technology

AGV 100 Introduction to Veterinary Technology 2.0

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. (2/0)

AGV 104 Veterinary Technology Anatomy and Physiology I 3.0

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. (2/3)

AGV 108 Veterinary Technology Anatomy and Physiology II 3.0

Veterinary Technology Anatomy and Physiology II provides instruction in anatomy and physiology of domestic animals. The course focus is on cardiovascular, neurological, integumentary, and digestion systems. Lab activities focus on feline dissection. (2/3)

Prerequisite: A grade of "C" or higher in all first-semester veterinary technology courses.

AGV 110 Principles of Veterinary Technology I 3.0

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. (2/3)

AGV 115 Principles of Veterinary Technology II 3.0

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. (2/3)

Prerequisite: A grade of "C" or higher in all first-semester veterinary technology courses.

AGV 120 Veterinary Medical Terminology 1.0

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. (1/0)

AGV 122 Principles of Sanitation 3.0

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. (2/3)

AGV 135 Clinical Pathology Lab Techniques I 3.0

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. (2/3)

Prerequisite: A grade of "C" or higher in all first-semester veterinary technology courses.

AGV 136 Clinical Pathology Lab Techniques II 4.0

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. (3/3)

Prerequisite: A grade of "C" or higher in all first-year veterinary technology courses.

AGV 140 Veterinary Pharmacology 3.0

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. (3/0)

Prerequisite: A grade of "C" or higher in all first-semester veterinary technology courses.

AGV 142 Mathematics for Veterinary Technicians 3.0

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. (3/0)

Prerequisite: A grade of "C" or higher in all second-semester veterinary technology courses.

AGV 145 Animal Nutrition 3.0

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. (3/0)

Prerequisite: A grade of "C" or higher in all second-semester veterinary technology courses.

AGV 147 Large Animal Care 4.0

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. (2/4)

Prerequisite: A grade of "C" or higher in all first-year veterinary technology courses.

AGV 149 Avian, Exotic and Lab Animal Care 3.0

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 anesthesiology of birds, exotic, and laboratory animals. (2/2)

Prerequisite: A grade of "C" or higher in all third-semester veterinary technology courses.

AGV 150 Office Procedures for Veterinary Technicians 3.0

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. (3/0)

Prerequisite: A grade of "C" or higher in all first-year veterinary technology courses.

AGV 170 Veterinary Anesthesiology 3.0

Veterinary Anesthesiology provides lecture and laboratory instruction in skills veterinary technicians utilize in a clinical setting. Topics include anesthesiology, pain management and fluid therapy. (2/3)

Prerequisite: A grade of "C" or higher in all first-year Veterinary Technology courses.

AGV 182 Diagnostic Imaging 3.0

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. (2/3)

Prerequisite: A grade of "C" or higher in all third-semester Veterinary Technology courses.

AGV 185 Veterinary Surgical Assisting 3.0

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. (2/3)

Prerequisite: A grade of "C" or higher in all third-semester Veterinary Technology courses.

AGV 205 Kennel Management and Animal Care I 1.0

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. (0/4)

AGV 207 Kennel Management and Animal Care II 1.0

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. (0/4)

Prerequisite: A grade of "C" or higher in all first-semester veterinary technology courses.

AGV 209 Kennel Management and Animal Care III 1.0

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. (0/4)

Prerequisite: A grade of "C" or higher in all first-year veterinary technology courses.

AGV 211 Kennel Management and Animal Care IV 1.0

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. (0/4)

Prerequisite: A grade of "C" or higher in all third-semester veterinary technology courses.

AGV 805 Veterinary Technology Internship I 2.0

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. (0/8)

Prerequisite: A grade of "C" or higher in all second-semester veterinary technology courses.

AGV 806 Veterinary Technology Internship II 3.0

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. (0/12)

Prerequisite: A grade of "C" or higher in all third-semester veterinary technology courses.

Welding

WEL 117 General Welding 2.0

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. (1/2)

WEL 149 Arc Welding 3.0

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. Welding safety practices are also stressed. (3/0)

WEL 192 Gas Tungsten Arc Welding 4.0

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. (1/6)

WEL 228 Introduction to Welding, Safety, and Health of Workers 1.0

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. (1/0)

WEL 233 Print Reading and Welding Symbol Interpretations 3.0

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. (3/0)

WEL 256 Gas Metal Arc Welding 4.5

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. (1/7)

WEL 259 Oxy-Acetylene Arc Welding 1.0

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. (0/2)

Wind Energy and Turbine Technology

WTT 103 Introduction to Wind Energy 3.0

Introduction to Wind Energy provides students an overview of the wind energy industry. The development, construction, and operation of wind farms will be studied, with emphasis on the operation and maintenance of wind turbines. Students will examine wind turbines in detail and develop a familiarity with standard procedures, tools, and subsystems that comprise the wind turbine. (2/2)

WTT 143 Mechanical Power Transmission 3.0

Mechanical Power Transmission is designed to give students an overview of the terminology, theory of operation, and specific devices involved in the movement of energy. Belts, chains, gears, shafts, hydraulics, and pneumatics are examined. Emphasis is on systems used in wind energy. (2/2)

WTT 202 Advanced Wind Energy 4.0

Advanced Wind Energy seeks to broaden the scope and depth of student understanding of wind turbine operation and the wind energy industry. Students will study site preparation and construction, turbine component specifications and manufacturing, operation and maintenance programs, and data acquisition and assessment. (3/2)