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General Information

Start Here. Go Anywhere!
With global vision and innovative curriculum, Kirkwood is redefining the role of the community college. At Kirkwood, you really can start here and go anywhere!

Our Mission
Consistent with the philosophy held by the college and in accordance with the charge given it by the State of Iowa as an institution of higher education and in concert with other agencies:

Kirkwood Community College

- Identifies community needs
- Provides accessible, quality education and training
- Promotes opportunities for lifelong learning

Our Vision
Invent, develop and deliver learning solutions for the 21st century.

Our Beliefs

- Trust and honesty
- Mutual respect and support
- Open communication
- Dedication to the people we serve

Equal Employment Opportunity
Kirkwood Community College declares and affirms to its students, employees and to the public that it does not discriminate on the basis of sex, race, color, creed, religion, national origin, age, sexual orientation, gender, gender identity, physical attributes, physical or mental ability, marital status, veteran status, genetic information, or socioeconomic status in its educational programs, activities, admission procedures or employment practices. The college affirms its commitment to comply with all applicable federal, state, and local laws, regulations and orders. Kirkwood’s EEO Officer is Executive Director of Human Resources Michael Roberts. Contact information: Michael.Roberts@kirkwood.edu or (319)398-7797.

REVISED NOVEMBER 2014
(Minor revisions to Student Complaint Policy page 41, Student Conduct Code page 41, Sexual Misconduct Involving Students page 33, and Academic Appeals Policy page 24)
Kirkwood Locations

Cedar Rapids Main Campus
6301 Kirkwood Boulevard SW
Cedar Rapids, IA 52404
319-398-5411 or 800-332-2055
ask@kirkwood.edu

The main campus of Kirkwood Community College is located in Cedar Rapids, Iowa, a metropolitan area of approximately 150,000 residents. U.S. Highways 30, 151, 218 and Interstate 380 run through the city. Kirkwood sits just south of the Highway 30 and I-380 interchange.

Iowa City Campus
1816 Lower Muscatine Road
Iowa City, IA 52240
319-887-3658
Kirkwood Community College’s Iowa City Campus brings academic excellence, first class facilities and a convenient location together to serve its growing student population.

The Iowa City Campus is one of the fastest-growing campuses in Iowa. And even though more than 3,500 students attend there, the center hasn’t lost the friendliness and student focus for which Kirkwood is known.

Services include those listed for center locations, as well as academic and transfer advising, personal counseling, financial aid advising, a cashier for tuition payment and a full-service bookstore.

Center Locations
Kirkwood centers are located in Benton, Cedar, Iowa, Johnson, Jones, Linn and Washington counties. Kirkwood centers offer college credit courses, continuing education classes and high school completion programs to students of all ages. Students can complete all the required courses to earn Associate of Arts degrees through local Kirkwood centers. Classes at each center are delivered by traditional face-to-face classroom instruction, Distance Learning and interactive video classrooms.

The centers offer the same services as those available to students at the main campus in Cedar Rapids:

- Advisors who assist students with course schedules.
- COMPASS testing for math and English placement.
- Counseling workshops for anyone thinking about college or career changes.
- Wireless computer access with software required for college credit courses.
- Tutoring for students in college credit classes.

Benton County
Benton County Center
111 West Third Street
Vinton, IA 52349
319-472-2318
Tippie-Mansfield Center
1214 Ninth Avenue
Belle Plaine, IA 52208
319-444-2549

Cedar County
Cedar County Center
1410 Cedar Street
Tipton, IA 52772
563-886-3101
Cedar County Resource Center
401 West Ninth Street
Tipton, IA 52772
563-886-3451 ext. 5791

Iowa County
Iowa County Center
200 West Street
Williamsburg, IA 52361
319-668-2461

Johnson County
Iowa City Campus
1816 Lower Muscatine Road
Iowa City, IA 52240
319-887-3658

Jones County
Jones County Regional Center
220 Welter Drive
Monticello, IA 52310
319-465-2302

Linn County
Linn County Regional Center
1770 Boyson Road
Hiawatha, IA 52233
319-398-1052

Washington County
Washington County Regional Center
2192 Lexington Blvd
Washington, IA 52353
319-653-4655
**Programs of Study**

For the most up-to-date list of programs offered at Kirkwood, go to: www.kirkwood.edu/programs

**Career Programs**
Get a great start here with certificate, diploma or degree programs designed to provide the training and expertise you need to begin your new career in as little as one year. Listed below are Applied Science career programs.

- Administrative Assistant
- Advanced Manufacturing Engineering Technologies
- Agricultural Geospatial Technology
- Agriculture Business
- Agriculture Production Management
- Apparel Merchandising and Design
- Architectural Technology
- Automation and Instrumentation Technologies
- Automotive Collision Repair
- Automotive Technology
- Baking and Pastry Arts
- Biotechnology
- Business Administration: Accounting
- Business Administration: Financial Services
- Business Administration: Management
- Business Administration: Marketing
- CAD/Mechanical Engineering Technologies
- Carpentry
- CNC Machining Technology
- Computer Software Development
- Computer Support Specialist
- Construction Management
- Criminal Justice
- Culinary Arts
- Dental Assisting
- Dental Hygiene
- Dental Technology
- Diagnostic Assistant (Radiologic Technology)
- Diesel Ag Technology
- Diesel Truck Technology
- Early Childhood Education
- Electroneurodiagnostic Technology
- Electronics Engineering Technology
- Energy Production and Distribution Technologies
- Entry-level Firefighter
- Floral Careers
- Geographic Information Systems (GIS)
- Golf Course and Athletic Turfgrass
- Graphic Communication Technology
- Health Information Technology
- Horse Science Technology
- Hotel Management
- Human Services
- Humane Officer Training
- HVAC Installer
- Industrial Maintenance Technology
- Interior Design
- Landscape Construction and Design
- Masonry Construction
- Medical Assisting
- Medical Laboratory Technology
- Medical Transcription
- Network and System Administration
- Nursing Practical, Associate Degree (RN)
- Occupational Therapy Assistant
- Paralegal
- Paramedic
- Parks and Natural Resources
- Pet Grooming
- Pharmacy Technician
- Physical Therapist Assistant
- Plumbing Technology
- Respiratory Therapist
- Restaurant Management
- Skilled Trades
- Surgical Technology
- Telecommunication Technology
- Veterinary Assistant
- Veterinary Technician
- Water Environmental Technology
- Web Technologies

- Welding

**Liberal Arts Degrees**
If you plan to continue your education after Kirkwood, you can take the necessary electives and core courses you need through our Liberal Arts program before your transfer.

The following career interest areas are Liberal Arts transfer options. Depending upon your transfer institution and your career interest area, you may earn an Associate of Arts or an Associate of Science degree in Liberal Arts, or you may take only the credits you need to transfer.

**Liberal Arts - Associate of Arts (A.A.) degree**
We can help you transfer your A.A. degree and major in many areas, including:

- Art
- Business
- Criminal Justice
- Communication Media/Public Relations
- Early Childhood Education
- Education Careers
- English
- Human Services
- Music
- Theatre

**Liberal Arts - Associate of Science (A.S.) degree**
We can help you transfer your A.S. degree and major in many areas, including:

- Agriculture
- Biology
- Chemistry
- Computer Science
- Engineering
- Environmental Science
- Horticulture
- Mathematics
- Natural Resources
Programs of Study

Physics
Pre-Chiropractic
Pre-Dentistry
Pre-Medicine
Pre-Nursing BSN
Pre-Pharmacy
Pre-Physical Therapy
Pre-Veterinary Medicine

Reverse Transfer Option
Reverse Transfer is an option for students who do not finish their associate degree before they transfer to an Iowa public university. When a student applies to the university, he/she may indicate their interest in applying future credits earned at the university toward the completion of his/her associate degree. By doing so, the student agrees to have his/her university contact information and transcript sent back to Kirkwood the first three terms of enrollment at the university. Kirkwood then evaluates this coursework to determine if degree requirements are met. More information is available at www.transferiniowa.org/reverse_credit_transfer.php.

Certificates
Certificate programs are designed for entry-level employment and may provide specialization in specific areas. Courses are usually taken from diploma and degree programs, and may be completed within 12 to 18 semester hours.

ACE Industry
Basic Equine Studies
Biotechnology
Construction Estimator
Construction Supervision
Early Childhood Education
Emergency Medical Technician (EMT)
Entrepreneurship
Entry-level Firefighter
Equine Health
Fire Science
Geographic Information Systems (GIS)
Global Perspectives in Business
Human Resources
Java Programming
Network and System Administration
Network Security
.NET Programming
Paraeducator Certification**
Project Management
Retail Marketing
Sales
Shielded Metal Arc Welding
Social Media Marketing
Technical Accounting
Web Development
Web Design

**For Paraeducator certification, apply to Liberal Arts - Associate of Arts (A.A.)

Online Degrees
Earn any of these degrees online. The Associate of Arts or Associate of Applied Science degree you earn is equivalent to a traditional classroom degree. Enter the workforce or transfer to a four-year school, the choice is yours.

Business Administration: Management
Liberal Arts
Water Environmental Technology
Degrees and Core Requirements

Associate of Arts (A.A.)
Associate of Science (A.S.)

A.A. and A.S. degrees are generally considered "transfer level" degrees. Most students earning these degrees transfer to a four-year college or university and continue their studies. Requirements will differ between colleges, so students should work closely with their transfer institutions and Kirkwood advisors to choose classes that meet their needs.

Associate of Applied Science (A.A.S.)

Students who earn A.A.S. degrees typically enter the workforce, however; some Applied Science and Technology programs also have transfer agreements with four-year institutions. Students work with an advisor to determine which degree program best suits their goals.

Diploma Certificate

Diploma and certificate programs normally take nine to 12 months to complete and provide entry-level skills to begin a chosen career. Those in the workforce who already have two- or four-year degrees may also seek certificates to advance their careers. Diploma and certificate programs generally do not transfer, but it is best to check with an advisor.

A.A. and A.S. Degree Requirements

The adjacent table provides degree requirements for students pursuing a two-year transfer program at Kirkwood. Additional requirements of the three programs include:

- Earn a minimum of 62 semester hours of credit.
- Complete 16 semester hours in residence at Kirkwood.
- Maintain a minimum cumulative grade point average of 2.0.
- Students seeking an A.A. degree must complete one approved diversity course.

Electives

Electives are transferable courses required for completing all three degrees. They go beyond core and general education requirements in providing an opportunity to pursue subjects of special interest.

Electives can be chosen from:

- All courses with "Arts & Sciences Elective Code A" in the course description (transfer courses).
- Up to 16 credit hours of courses with "Arts & Sciences Elective Code B" in the course description (technical courses).

A.A.S. Degree Requirements

To receive an Associate of Applied Science degree, the following requirements must be completed:

- Earn 62-86 semester hours of credit in the courses required for the specific Applied Science program.
- Earn 16 semester hours in residence at Kirkwood in the program for which the degree is sought.
- Maintain a minimum cumulative grade point average of 2.0.
- Complete a minimum of 15 semester credit hours of course work in the following basic learning core:
  
  | Communication | 2 courses |
  | Humanities | 1 course |
  | Social Science | 1 course |
  | Mathematics/Science | 1 course |

All basic core learning requirements can be satisfied from courses with Arts & Sciences Elective Code B in the course description (technical courses) or Arts & Sciences Elective Code A in the course description (transfer courses).

Degree Requirements

<table>
<thead>
<tr>
<th></th>
<th>Associate of Arts (A.A.)</th>
<th>Associate of Science (A.S.)</th>
<th>Associate of Applied Science (A.A.S.)</th>
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<td>Social Science</td>
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Degrees and Core Requirements

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<td>62</td>
<td>62-86</td>
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</tbody>
</table>

**Diploma Requirements**

- Earn 30-48 semester hours of credit in the courses required for the specific Applied Science program (for Arts & Sciences diploma programs, check the appropriate department for specific requirements).
- Earn eight semester hours in residence at Kirkwood in the program for which the diploma is sought.
- Maintain a minimum cumulative grade point average of 2.0.

**Certificate Requirements**

- Earn 12-29 semester hours of credit in courses required for the specific Applied Science program (for Arts & Sciences certificate programs, check the appropriate department for specific requirements).
- Earn six semester hours in residence at Kirkwood in the program for which the certificate is sought.
- Maintain a minimum cumulative grade point average of 2.0.
Admissions, Tuition and Financial Aid

Admissions Services
Iowa Hall
319-398-5517 or 800-363-2220
info@kirkwood.edu

Kirkwood is proud to maintain an open admission policy, which means enrollment is open to all people with or without a high school diploma.

Applying for Admission

1. Ways to Apply
The fastest way to apply is at www.kirkwood.edu/apply.

Applications may also be faxed to 319-398-4928 or mailed to:
One Stop Office
202 Kirkwood Hall
Kirkwood Community College
P.O. Box 2068
Cedar Rapids, IA 52406-2068

There is no application fee. Select one program area to receive more information about completing the admission process.

Some programs require a program conference. At the program conference, students meet with the program instructors to learn more about the expectations of the program. This is an important step because some programs fill quickly. Program advisors contact students with more information once applications are received.

2. Placement Exams
All new students registering for more than six credit hours are required to take the COMPASS test prior to registration, unless they meet one of the following exemptions: (Allow at least two weeks for these exemptions to be evaluated.)

- Earned a Bachelor’s degree from an accredited college.
- Successfully completed (C or better) college-level math and writing classes at a regionally accredited college.
- Completed the COMPASS test or ACT and sent the official record of scores to Kirkwood. Math scores are considered valid for two years while reading and writing scores are valid for three years.

Call the Test Center at 319-398-5456 for more information and to find a location closest to you.

3. Financial Aid
Submit the Free Application for Federal Student Aid (FAFSA) as soon as possible after January 1. Start early – the financial aid process can take three to five months. Go to www.fafsa.gov.

4. Scholarships
Most Kirkwood scholarship applications are accepted from October 1 through March 31. Close to $3 million in scholarship awards is available to all Kirkwood students. Apply at www.kirkwood.edu/scholarships.

5. Housing
Contact the Housing office at 319-398-7647 or www.kirkwood.edu/housing. You can tour available housing during our TGIF (To Get Information Fast) campus visits.

6. Transcripts
Transfer or returning adult students who want credit for previous course work must provide the One Stop office with an official transcript from each college or university attended.

Admission to the college does not guarantee acceptance into all programs.

Generally, admission to programs is granted on a continuous basis as applicants complete the required admission procedures. Applicants should apply as soon as they have decided to seek admission. Students can submit applications one year prior to program start dates. (Check the entry time in the program descriptions in this catalog.)

Applications are accepted up to the day of registration in many college programs. However, students should complete their applications well in advance of the semester they plan to enter to gain the maximum pre-enrollment assistance from college staff. Those with college degrees can send their transcripts to the One Stop office to be used for advising purposes.

College Credit While in High School
College-ready high school students have the opportunity to earn both high school and college credit through an agreement between the local high school district and Kirkwood Community College. With recommendation and approval from the high school district, students who have satisfied the prerequisite course work may enroll in individual classes or a sequence of career emphasis classes. Courses are available within the high school setting, Kirkwood distance learning and online classes or classes held at one of Kirkwood’s campus locations throughout the seven-county service area. Students wishing to earn credit, independent of high school, should contact Kirkwood’s Dean of Students office.

International Programs
Cedar Rapids Main Campus
1154 Linn Hall
319-398-5579

Kirkwood’s International Programs department is the home of global services. Students come to Kirkwood from more than 100 different countries around the world. This global village on our campus enriches the total learning environment. Students learn how to encounter differences with tolerance, as well as appreciate the rich complexity of our global economy. Students develop a mutual respect and understanding of everyone’s interconnectedness throughout the year by participating in special activities as well as Study Abroad programs. The following resources are available:

- International student advising
- International recruiting and prospective student services
Students who do not plan to take credit classes who want to obtain the basic English language skills and knowledge necessary for employment and self-sufficiency should contact the Kirkwood Resource Center at 319-784-1510.

**International Students**
1154 Linn Hall
319-398-5579

An international student is a person who has entered the United States with an F-1 or J-1 visa. In addition to demonstrating English language proficiency, international students wanting to enroll in credit classes or programs must be 18 years of age or older and submit:
1. International application found at www.kirkwood.edu/intlapply.
2. Official secondary school and college transcripts.
3. Official evidence of adequate financial resources.
4. Health records.

The international student advisor is available in the International Programs office and is the primary designated school official for all international students.

**Residence Qualifications**
319-398-7600

Students enrolling at Kirkwood are classified as residents or nonresidents of Iowa, or as international students, for admission and tuition purposes by the college’s One Stop office.

The college definition requires 90 consecutive days of residency within the state for a U.S. citizen or permanent resident (green card) prior to the start of enrollment. Students who come to the state of Iowa for the purpose of attending college will remain at nonresident status. Residency status is established at the start of the student’s program and does not change until completion of the program.

**Tuition Rates**
The Kirkwood Board of Trustees established current tuition charges in May 2014. There are additional charges for some materials and private music lessons. Online course tuition is charged at resident rate. Tuition is due two weeks before the term starts.

**Iowa Residents**
- $145 per credit hour, per semester.
- Tuition for an average, full-time schedule (15 credit hours) is $2,175 per semester.

**Nonresidents**
- $175 per credit hour, per semester.
- Tuition for an average, full-time schedule (15 credit hours) is $2,625 per semester.

**International Students**
- $290 per credit hour, per semester.
- Tuition for an average, full-time schedule (12 credit hours) is $3,480 per semester.
- Mandatory international student health insurance for one year is as follows:
  - Student only $105.61 per month and $1,267.32 per year
  - Student and child $116.77 per month and $1,401.24 per year
  - Student and spouse $370.28 per month and $4,443.36 per year

**Installment Payments**
319-398-5679

The Kirkwood Payment Plan is designed to help students meet educational expenses without debt. It is not a loan program, therefore students have no debt, there are no interest or finance charges assessed, and there is no credit check. The cost to enter the interest-free monthly payment plan is a $25 per semester nonrefundable enrollment fee. Students may budget tuition and fees with an automatic bank payment (ACH) or credit card.
Refund of Tuition
See policy in Academic and Student Policies section.

Financial Aid
Cedar Rapids Main Campus
202 Kirkwood Hall
319-398-7600
finaid@kirkwood.edu

Iowa City Campus
112 Credit Center
319-887-3658

Financial aid consists of grants, loans, scholarships and work-study.

The Kirkwood One Stop office helps qualified students receive financial assistance, enabling them to pursue their academic goals.

To receive the maximum consideration for financial aid, students should apply as soon after January 1 as possible. Application for financial aid must be made each year.

Eligibility Requirements
All students seeking financial aid must:

1. Be enrolled and accepted in a diploma or degree credit program.
2. Be seeking a degree related to the educational objective.
3. Be a citizen of the United States or an eligible non-citizen.
4. Have completed a high school diploma or GED.
5. Not be in default for any previous education loans or owe a grant overpayment.
6. Be making satisfactory academic progress according to Kirkwood’s published policy.
7. Attend the classes for which they are registered.

How to Apply for Financial Aid
To apply for financial aid, follow these steps:

1. Submit the Free Application for Federal Student Aid (FAFSA) at www.fafsa.gov as soon as possible after January 1.

2. Approximately three to five days after you submit your FAFSA online, the U.S. Department of Education (ED) will email your Student Aid Report (SAR). At this time, you can track your financial aid status at Kirkwood by logging into EagleNet and choosing "Financial Aid Checklist" from the Students menu.

3. The One Stop office may request additional documents, such as tax forms. The second item on the checklist, "Complete Additional Requirements," refers to missing information Kirkwood needs to complete your financial aid file. If the item is red, click on "My Kirkwood Documents" to determine what is missing. Use the "FA Documentation Help" link to understand what documentation is needed. Once the documentation has been received and processed, that checklist item will turn green.

4. If the third item on the list, "Financial Aid Awards Complete," is green, you know your award has been created. If this item is still red, allow 24 hours for processing, as we award students every weekday.

5. If your award contains loans and you want to accept them, you must click on "Activate My Loan." This will change the checklist item "Stafford Loan Activated," to green after processing.

6. The next two checklist steps, "Complete Entrance Counseling" and "Sign Your Promissory Note," are the final two parts of the loan activation process. You can complete these two steps at www.studentloans.gov. These steps take two to three days to process, so be sure to allow time for this item to change to green after you've completed these steps.

7. Once funds are released to your account to pay tuition, "Funds Made Available" will turn green. Choose the "My Bill by Term" link to view the disbursement.

Types of Grants and Loans
- Pell Grant – Everyone who completes a FAFSA is considered for the need based grant.
- Supplemental Educational Opportunity Grant – For students with the greatest financial need.
- College Work-study – Hourly wages earned while working at the college. Work hours are arranged with consideration of the student’s class schedule.
- Iowa Vocational-Technical Grant – For vocational-technical students who are Iowa residents.
- Kibbie Grant–For Iowa students who are in certain job shortage programs.
- Iowa Grant – Based on financial need with priority given to those most in need, who are Iowa residents.
- Federal Direct Stafford Loan – All students are eligible for low, fixed interest rate loans. Payment is deferred while student is enrolled at least half time.
- Parent Loan for Undergraduate Students (PLUS) – Loan available for parents of dependent students. Payment may be deferred while student is enrolled at least half time.

Scholarships
Kirkwood awards close to $3 million in scholarships to students each year. Applications for most scholarships open October 1 and close March 31. Apply at www.kirkwood.edu/scholarships.

American Opportunity Tax Credit
The American Opportunity Tax Credit is available to eligible students during their first four years of college or post-secondary education. The tax credit provides tax relief for qualified higher education expenses, such as tuition, fees, books and course materials. The credit covers 100 percent of the first $2,000 and 25 percent of the second $2,000 during the qualified period. 40 percent of it is refundable. To be eligible, a student must be enrolled in a degree, certificate or other program leading to a recognized educational credential and be enrolled at least halftime. Students listed as a depend-
ent on another person’s tax return are not eligible for this credit.
Visit the Internal Revenue Service http://www.irs.gov/ website for complete information on current tax law.

**College Work-Study**
Cedar Rapids Main Campus
1st floor Iowa Hall
319-398-4934

Iowa City Campus
Room 148
319-887-3947

Through College Work-Study, students can work at a part-time job and earn money for educational or personal expenses. For additional information visit www.kirkwood.edu/workstudy.
Counselors are available for students who need help with academic concerns, career plans or personal matters. A counselor or intake coordinator is available on an appointment or drop-in basis to provide general Kirkwood information or refer students to the appropriate staff member, agency or counselor. The following assistance and services are available:

- Personal counseling
- Student advocacy
- Career and educational planning
- College/university transfer information
- Resource library
- Course and curriculum information
- Personal development classes (Career Decision-making, Job-seeking Skills, other credit classes)

The office also provides a resource library of brochures and articles for students to browse. Topics range from depression to midlife career changes and how to prepare for exams.

Career Services assists students, alumni and community members seeking and/or preparing for employment

- Post resumés and search current opportunities on our jobs website, www.kirkwood.edu/jobs

Use our resource library, with extensive Internet sites bookmarked for research

Come to job fairs and on-campus recruitment events

Receive personalized career search assistance

Use career-related programs and workshops that are available during day and evening hours

Career Directions workshops

Free job searching workshops in resumé writing, applications, correspondence writing, interviewing, mock interviewing and job searching via the Web

Job Club open lab

Individual and group support

Myers-Briggs Type Indicator Assessment

Choices Planner Online Assessment

Resumé critiquing

Assistance from local employers

Advising and Transfer Center assists students, alumni and community members seeking and/or preparing for employment

- Assist with developing academic plans.
- Clarify course requirements.
- Refer students to support services, if needed.

Students who are planning to transfer to four-year institutions can receive assistance in the Advising and Transfer Center. The center serves as a liaison between Kirkwood and four-year colleges and universities. Whether it is a viewbook, application or schedule of upcoming four-year college visits, the Advising and Transfer Center can provide many pieces of information to interested students.

EagleNet is your online access to Kirkwood resources and registration information. EagleNet allows you to:

- Check your grades
- Register for classes
- Drop classes
- Get your class schedule
- Check your tuition bill
- Check your financial aid status; and more

For a complete list of EagleNet features and functions, go to
www.kirkwood.edu/eaglenet and click on EagleNet for Students.

Your EagleNet user ID is sometimes called your "k" number. Your k number is the letter k and a sequence of seven numbers (example: k0003750). Your k number and password are kept confidential. If you forget your k number, go to the One Stop office, 2nd floor, Kirkwood Hall and provide photo identification.

Project START
Cedar Rapids Main Campus
108 Iowa Hall
319-398-4934

Project START (Supported Training and Retraining) helps students overcome barriers they may encounter while reaching their academic and career goals. We can help students by providing financial assistance, helping with study skills and test taking, monitoring class progress, arranging special assistance, and serving as an advocate with instructors and other college personnel.

START assistance is available for a maximum of two or three consecutive semesters. Referrals are accepted on an ongoing basis from community agencies and Kirkwood counselors, instructors and staff. Students must apply and be accepted into the program.

Project START began as a cooperative effort between Kirkwood and the Hall-Perrine Foundation and receives continued funding from the Kirkwood Foundation.

Student Advocacy
Cedar Rapids Main Campus
108 Iowa Hall
319-398-5540

Students, faculty, staff, service providers and visitors who are involved with any aspect of the college's mission are members of the Kirkwood learning community. As such, we share certain rights and responsibilities to each other and the learning process, among them the right to a positive educational climate and the responsibility to uphold the values that create and sustain this climate including:

- Valuing diversity.
- Respecting and managing resources.
- Promoting opportunities for educational growth and development.
- Encouraging a spirit of ethical judgment.
- Learning to engage in a sustained and independent search for truth.
- Maintaining an orderly, civil and safe campus environment.

If you have concerns about these areas, contact the dean of students, 108 Iowa Hall, 319-398-5540.

Learning Services
Cedar Rapids Main Campus
2063 Cedar Hall
319-398-5574
www.kirkwood.edu/learningservices

Learning Services offers a variety of services to assist students achieve success. Testing and Tutoring Services are housed in Learning Services as well as Disability Accommodation Services. We also provide TRiO Student Support Services and VITAL, two programs specifically designed to assist students in the transition to the academic rigor and social changes of a college environment.

Test Centers
Cedar Rapids Main Campus
2055 Cedar Hall
319-398-5456

Iowa City Campus
243 Credit Center
319-887-3642

Linn Regional Center
Room 320
319-398-1052
www.kirkwood.edu/testcenter

A wide variety of testing services are provided to prospective students, current students, graduates and the community at large. Prospective students participate in COMPASS (computer adaptive) assessment testing to help determine their readiness for college-level classes. Once prospective students complete COMPASS, advisors help them interpret the results. Current students use the center for department make-up exams and Distance Learning exams.

English Language Acquisition (ELA) tests are given to incoming students whose native language is not English. The Emergency Medical Services testing, retake examinations and a variety of other tests are provided as a service to community members.

Disability Accommodation Services
Cedar Rapids Main Campus
2063 Cedar Hall
319-398-5574

The Learning Services department offers support for students with disabilities. These services are available to qualified students at no cost. Using a case management team approach to assist students, Disability Accommodation Services arranges reasonable accommodations for students. For more information stop in 2063 Cedar Hall or call 319-398-5574 (TTY 398-5451)

TRiO Student Support Services
Cedar Rapids Main Campus
2063 Cedar Hall
319-398-5574
www.kirkwood.edu/sss

TRiO Student Support Services (SSS) is a program specifically designed to assist students in the transition to higher education and the college environment. SSS Staff and programming support Kirkwood Students achieve their academic goals, such as obtaining an Associates Degree and/or transferring to a four year post-secondary institution. Students work with an individual counselor on the primary SSS program supports including but not limited to: goal and solution based counseling, financial aid process assistance, math and writing support, and transfer decision making and connecting.

TRiO refers to six programs (originally only three) funded under the Higher Education Act of 1965. SSS is one of
the six TRiO Programs, created under President Johnson's War on Poverty, similar to federal financial aid. While federal financial aid helps students overcome financial barriers, TRiO Programs help students overcome class, social and cultural barriers in higher education.

To be eligible for Student Support Services a student must meet one of the following eligibility criteria and be citizen or national of the United States:

1. First generation student (neither parent has graduated with a bachelor's degree)
2. Low income
3. Physical or mental disability.

Tutoring Services
Cedar Rapids Main Campus
2071 Cedar Hall
319-398-5425
www.kirkwood.edu/tutoring

Iowa City Campus
112 Credit Center
319-887-3658

Tutoring services are available by request for any student enrolled in a credit course at Kirkwood. There is no charge to the learner, and tutoring is available every term, day and evening.

Many tutors are Kirkwood students who are paid by the college for their services. Students interested in being tutors may apply through the Tutoring Services office.

VITAL
Cedar Rapids Main Campus
2042/2044 Cedar Hall
319-398-5574
www.kirkwood.edu/VITAL

VITAL provides vocational, training and support services to students who were enrolled in special education programs in high school and are now enrolled in Applied Science and Technology programs at Kirkwood. The Vocational Individualized Training and Learning (VITAL) program is jointly administered by Kirkwood, Grant Wood Area Education Agency and local high schools.

Other Educational Opportunities

College 101
Cedar Rapids Main Campus
108 Iowa Hall
319-398-5540

College 101 is a three-credit-hour course offered to first-time Kirkwood students, aimed at developing the skills needed to be successful. Some of the course topics include:
- Adjusting/transiting to college.
- Learning college-level study skills.
- Planning career pathways.
- Connecting to the college culture.
- Developing a plan of study.
- Advancing personal growth.
- Continuing education after Kirkwood.

Linked Courses
Linked courses are pairs, or clusters, of courses a student takes with the same group of other students. Usually, these courses are scheduled back-to-back, and the faculty members teaching them weave syllabi, reading and writing assignments so concepts, ideas, practices and approaches are enriched in each course.

Service Learning
1008 Cedar Hall
319-398-4911

Students can combine community service with classroom learning in a number of Kirkwood courses. A faculty member may assign community service work as a course requirement. The individual faculty member and the coordinator of Student Learning jointly coordinate the Service Learning project with an appropriate outside service agency. Students engage in service to address genuine community needs. The service is directly related to their academic course work. Students will also engage in structured reflections, which may take many different forms: journals, portfolios, interviews, oral, and/or written reports.

Honors Program
Kirkwood’s Honors program challenges students to be the best in their chosen fields by working closely with Kirkwood faculty members within the discipline and completing special honors projects.

Phi Theta Kappa
Phi Theta Kappa is the only internationally-recognized honor society for students attending two-year colleges. Kirkwood’s local chapters are Alpha Eta Rho, for main campus students, and Beta Lambda Tau, for students at the Iowa City Campus.

Both organizations give achievement-minded Kirkwood students the opportunity to network with and energize one another, participate in service projects within the community and be part of a highly-esteemed group on campus.

Members of Alpha Eta Rho or Beta Lambda Tau must complete 12 credit hours at Kirkwood and have a 3.5 or greater cumulative GPA.

Honors Program Credits
The Kirkwood Foundation pays for honors program credits. Eligible students may receive up to four free honors credits.

Students eligible to participate in the Honors program should contact the Honors program faculty chair. In order to register for one-credit honors projects, students must submit a copy of their learning contract and have it signed by the director. Students then need to submit the completed add slip to the One Stop office and send copies of the honors project learning contracts to the designated recipients.

Study Abroad
Students earn college credits while embarking on once-in-a-lifetime adventures through Kirkwood’s Study Abroad programs. They greatly expand their horizons by stepping outside the conventional college environment, meeting and traveling with other college students, and fully experiencing world cultures.

Financial aid can be applied to Study Abroad programs and scholarships are also available. For more information.
emergency, have no delimiting date as long as they remain in their reserve component.

To be eligible for veterans educational benefits, students must:

1. Be eligible under one of the benefit programs of the Department of Veterans Affairs;
2. Be pursuing courses at least as half-time students to receive monthly benefits;
3. Maintain a 2.0 grade point average for graduation or show satisfactory progress each term while on academic probation;
4. Pursue one program at a time;
5. Take only courses applicable to stated, current program.

Veterans Education Outreach Program (VEOP)
Recognizing students who receive veterans educational benefits periodically need special services, the college has established the VEOP. The Veterans Services Coordinator/School Certifying Official:

- Coordinates veterans’ services with other campus services such as admissions, financial aid, counseling or placement.
- Maintains communication with military Reserve and National Guard units, as well as local members of the active military, to identify and serve people eligible for benefits and entitlements.

- Serves as the principal contact person and advocate for eligible students attending or seeking to attend Kirkwood. This may include facilitating admission, evaluating military credits, developing and monitoring degree programs, or serving as an information-referral source.

Further questions should be directed to the Veterans Services Coordinator/School Certifying Official.

Vocational Rehabilitation
Cedar Rapids Main Campus
123 Iowa Hall
319-398-4925
www.ivrs.iowa.gov

The Vocational Rehabilitation office works with Iowans with disabilities to:

- Find employment or expand skills to increase employment possibilities.
- Gain accessibility to school or work and increase independence.
- Find financial support through counseling and guidance.
- Assist students to determine a viable vocational direction.

Library Services
Cedar Rapids Main Campus
Benton Hall
319-398-5697
Toll free: 1-866-452-8504

Iowa City Campus
111 Credit Center
319-887-3613
Toll free 1-866-452-8504
www.kirkwood.edu/library
library@kirkwood.edu

Kirkwood’s Cedar Rapids and Iowa City libraries are open to all students, staff, faculty and area residents. The librarians are experts in helping you conduct college-level research by defining what information you need, finding material, evaluating sources, organizing your research, and communicating your findings clearly and ethically. If the information you need is not available in our physical libraries, electronic databases, or ebook collections, we will order it for you from another library through the Inter Library Loan program.
If you are working from home, are a distance education student or attend class at one of the Kirkwood centers, the same library services are available to you. The library website provides a full array of resources and services that you would find inside the libraries, along with instant messaging reference and handouts on creating citations and finding reliable websites. Librarians are available by phone to help you with your research and can send library materials to Kirkwood centers for your use.

**Information Resources & Technology**

In addition to quality books, journals and DVDs to use in your research, we have many online databases of magazine, journal, news and reference articles that you can access from any campus computer or your home computer. If you prefer working from a library table or relaxing in a stuffed chair as you write, you may check out a laptop for use within the library or bring your laptop to connect with the campus wireless network. Wireless Internet access is available in both libraries, and all library laptops have Microsoft Office.

**Facilities**

The Cedar Rapids main campus library is located in Benton Hall. You will find many places to study on the first and second floors, comfortable seating, study carrels and natural lighting. The second floor is designated as a quiet study area and has several group study rooms.

The Iowa City Campus library provides the same services but on a smaller scale. Study space, comfortable seating, individual carrels and a group study room are available. You will find the library in the Credit Center Building in the middle of the first floor.

**Information Literacy SDV-119**

This is a one credit-hour class taught by librarians who introduce students to the library research process. Students learn to systematically and efficiently locate, evaluate and use information through hands-on practice. Students will learn skills essential for any college student, but the class is especially helpful for students planning to transfer to a four-year college.

**Writing Centers**

Cedar Rapids Main Campus
3067 Cedar Hall
319-398-5411 ext. 5055

Iowa City Campus
134 Credit Center
319-887-3658

Linn County Regional Center
320 Linn Regional
319-398-1052

Students go to the Writing Center when they need objective readers for paragraphs, essays, research papers, journals, book reports, resumés and other writing-related activities. The writing center staff does not proofread work, but helps students improve their writing.

Writing Center hours are posted each semester. Students may stop by at any time; however, it is wise to call ahead for an appointment.

The Center for Online Writing provides the same services as the Writing Center, except that no appointment is needed, and all help is transmitted via email and email attachments. Access the Center for Online Writing from the link on the Writing Center page at www.kirkwood.edu/writingcenter.

**Distance Learning**

**Distance Learning Online**

Cedar Rapids Main Campus
319-398-4958

Classes offer students the flexibility to learn outside the traditional classroom. Most courses start on specific dates in August, September, January, February or May and meet for 16 weeks or 12 weeks. Other variable date and flexible delivery courses can be found on the distance learning website or in EagleNet. A qualified teacher, who is available to answer questions, respond to assignments and grade exams, designs each course. Courses are offered in an online format, and many will have weekly assignments. All courses meet the goals and objectives of the same courses offered in the traditional classroom and transfer to other institutions in the same way.

Distance Learning courses are delivered online, which provides an enriching and engaging environment for learning. There are a variety of resources available to help students succeed online, including a student help desk and online tutoring.

Kirkwood Community College is registered as a private institution with the Minnesota Office of Higher Education pursuant to Minnesota Statutes, sections 136A.61 to 136A.71. Registration is not an endorsement of the institution. Credits earned at the institution may not transfer to all other institutions.

For more information about Distance Learning go to www.kirkwood.edu/distancelearning.

**Interactive Video Classrooms**

Cedar Rapids Main Campus
319-398-1262

Kirkwood students can take courses and programs over an interactive instructional video system that links instructors to students at many different locations. This technology provides two-way audio and video communication. Interactive video classrooms greatly increase the number of courses the college can offer at Kirkwood centers and other locations. The delivery system saves students time and travel, while providing an interactive learning environment with the instructor and other students. Kirkwood also offers college credit courses over the statewide Iowa Communications Network (ICN). For more information go to www.kirkwood.edu/distancelearning.

**Adult Accelerated Learning Classes**

Linn County Regional Center
1770 Boyson Road, Hiawatha, IA 52233
319-398-1052
accelerated@kirkwood.edu
www.kirkwood.edu/accelerated

Adult Accelerated Learning classes are designed for working adults who want to further their education while balanc-
ing work and family. After earning an associate degree from Kirkwood, you can transfer to a four-year college or university to complete your bachelor’s degree.

You can take courses on evenings and weekends, once-a-week, and in five- and 10-week blocks. Outside projects and assignments complement the abbreviated class meeting schedule.

If you’re interested in Adult Accelerated Learning, you need a minimum of three years work experience, to be at least 21 years old and demonstrate competencies in reading, writing and math, either through COMPASS test scores or previous college experiences.

**Secondary Programs**

Resource Center
1030 5th Ave. SE
Suite 100
Cedar Rapids, IA 52404
319-784-1510

**Adult Education and Literacy**

The Adult Education and Literacy program assists adult learners to become literate and obtain the knowledge and skills necessary for employment and self-sufficiency. The program also assists adults in the completion of a secondary school education.

Kirkwood coordinates volunteer tutor programs in Cedar Rapids, Iowa City and Washington. Tutors are recruited, trained in basic teaching techniques, and matched with an adult who can benefit from instruction in English, reading or math. Tutoring services are available to adults who have not earned a secondary diploma or its equivalent.

Through the Adult Education and Literacy program, Kirkwood offers classes to English language learners. Instruction focuses on the development of English skills in life and work contexts. Classes are offered in Cedar Rapids, Iowa City and Washington. Volunteer tutors may also be available to learners who are unable to attend the classes.

**High School Completion Programs**

Students 17 years of age or older who have not completed their high school education may be eligible to earn a diploma through Kirkwood’s High School Completion program. More than 50 independent study, online and structured courses are offered at Kirkwood learning centers located in the seven-county service area.

Computers are available to provide students with course work, enrichment activities and vocational experience. Students are also encouraged to take interest and career assessment inventories, tour program facilities on the main campus, and explore other career and academic resources as part of their high school experience.

Preparation and testing for the Iowa High School Equivalency Diploma (HSED) are also available at Kirkwood learning centers. Students may study independently, work with a teacher or tutor, use HSED instructional software, and view instructional videos to learn or review HSED competencies.

**High School Distance Learning (HSDL) Program**

Students unable to attend a Kirkwood learning center can earn high school credits or transfer credits through the High School Distance Learning program. Often, students who are enrolled in high school complete courses through this program to meet the requirements of their local high school diploma. Students can also complete distance learning courses and earn the Kirkwood Adult High School diploma. Courses are available in packet and online formats.

**Corrections Education**

Through a contract with the Iowa Department of Corrections, Kirkwood manages the educational programs offered to offenders at the Anamosa State Penitentiary and the Iowa Medical and Classification Center in Oakdale. Literacy, ESL, HSED preparation and testing, and life skills are the instructional priorities.
Student Life and Services

Student Life
Cedar Rapids Main Campus
230 Iowa Hall
319-398-5578
Iowa City Campus
112 Credit Center
319-887-3947
www.kirkwood.edu/studentlife

Student Clubs and Organizations
Clubs are formed through academic programs and special interest groups and are given formal recognition by the Student Life office. Faculty or staff members serve as advisors to both groups. Information about clubs and organizations may be obtained through Student Life, or on line at www.kirkwood.edu/clubs

Student Leadership Council
This group represents the Kirkwood student body and plans and promotes events on campus. This leadership organization is an extension of the Student Life office and can be a vital part of the student experience at Kirkwood. It provides a networking opportunity between organizations at Kirkwood and allows students to be involved with various aspects of the student experience, including the entire event planning process, community service, public relations and promotion of other activities on campus.

Social and Special Events
Student Life coordinates several events and activities throughout the year. From daytime events such as live music or bingo to evening entertainment, including hypnotists, comedians and the Glow Party, there is always something going on at Kirkwood. All events are free for students to attend. Information on upcoming activities can be obtained through Student Life.

Kirkwood EagleCard
104 Iowa Hall
319-398-5680
www.kirkwood.edu/eaglecard
The EagleCard is the official Kirkwood Community College identification card. It is required for the following:
- Buying books at the Kirkwood bookstores.
- Selling books back at book buy-back time.
- Checking out books from the Kirkwood library.
- Admittance to the Kirkwood Rec Center, computer labs, and athletic and entertainment events.

A student has the option of depositing money on his/her EagleCard account and using it as a debit card. The EagleCard is accepted at on-campus vending machines, food services, Kirkwood Bookstores and select off-campus vendors.

Students can obtain their EagleCard at the EagleCard office or the Rec Center, both at the Cedar Rapids campus; the Iowa City Bookstore; or any county center office.

Bookstores
Cedar Rapids Main Campus
Benton Hall
319-398-5469
Iowa City Campus
1st floor Credit Center
319-887-3640
In addition to providing textbooks for all Kirkwood courses, both the Cedar Rapids and Iowa City bookstores also carry supplies, logo apparel, gifts, computers and software.

At the end of each semester, students can sell back previously purchased books. A representative from a used book wholesaler is on campus to handle the book buyback.

Bus Service
Kirkwood students can ride Cedar Rapids Transit for free. Just show your EagleCard student ID and get a free ride to and from campus on bus routes 7 and 11.

To purchase bus tickets for other routes in town that are not free, show your EagleCard at the Kirkwood Bookstore.

For a complete list of bus routes and bus stop locations, visit Cedar Rapids Transit at www.cedar-rapids.org/transit. The Iowa City Campus is accessible by Iowa City Transit bus service, and monthly passes are available at the Iowa City bookstore.

Campus Health Services
Cedar Rapids Main Campus
132 Iowa Hall
319-398-5588
Iowa City Campus
146 Credit Center
319-887-3949
A registered nurse under direction of a consulting physician staff the Campus Health office. Services include emergency treatment of illness and injury and assistance in obtaining services of local physicians or agencies. Over-the-counter drugs, TB testing and allergy shots (with a doctor’s order) are available. The student must cover the cost of hospitalization, doctor’s fees, prescription medicine, X-rays and laboratory fees.

Campus Health presents educational health programs on substance abuse, nutrition, infectious disease and sexual awareness. Confidential counseling on a variety of health-related problems is also offered.

Health insurance is recommended for students. While the college does not offer an insurance plan, information on insurance is available from Campus Health.
Housing
Cedar Rapids Main Campus
230 Iowa Hall
319-398-7647

Iowa City Campus
112 Credit Center
319-887-3947
www.kirkwood.edu/housing

Kirkwood does not provide on-campus housing, but nearly 4,000 students live in privately-owned apartments near the campus. The housing office provides information and assistance with roommate issues and serves as a liaison between apartment managers and student tenants. The Cedar Rapids Housing office coordinates apartment showings, which are available by appointment.

Traffic and Parking

Thousands use the Kirkwood campuses each day. For all of our protection, Campus Security will enforce traffic regulations. Students may park in any of the non-designated parking lots. Disability (handicap) spaces are reserved for those vehicles that display valid state of Iowa disability identification. Visitor spaces are for campus guests and should not be used by Kirkwood students, faculty or staff. Areas marked Blue Permit are reserved for faculty and staff vehicles that display valid blue parking permits. Taking parts of two spaces, or parking on the lawn, sidewalks or roadways is not permitted.

Reckless driving and speeding are prohibited at all times. Kirkwood’s traffic and parking rules are based upon Section 206C.14 of the Code of Iowa. As the college has campuses located in various cities and towns, the local laws and ordinances also apply. Traffic and parking rules will be enforced as shown in the violations chart.

Administrative fees for violations will be considered the same as any other debt owed to the college. If a ticket is received, students must do one of the following:

- Pay the fee at the cashier, 202 Kirkwood Hall.

- Mail the fee to Kirkwood in the envelope provided.

- Submit an appeal form within 48 hours. Appeal forms may be obtained and completed at www.kirkwood.edu/security, click "Parking."

Campus Security

319-389-1774

Kirkwood Campus Security officers patrol campus, respond to emergencies and other calls for service, conduct traffic checks on campus, walk through the campus buildings, staff special events, and facilitate a variety of safety and security presentations.

Kirkwood Campus Security officers may ask people for identification to determine whether they have legitimate business at the college. Campus Security officers have the authority to investigate offenses involving rule violations and to make referrals to the appropriate area of the college. Campus Security officers do not possess arrest powers and do not carry firearms. Criminal incidents are referred to the local police, who have jurisdiction on campus.

Campus Security works closely with local, state and federal police agencies. Through coordination with local law enforcement, criminal activity by students at off-campus locations is monitored and recorded. This information is referred to the appropriate area of the college.

Services (offered 24 hours a day, 365 days a year):

- Enforcement of college, local, state, and federal laws and regulations.
- Investigative reports and criminal investigation.
- Escorts for students, faculty and staff.
- Unlocking and jump starting vehicles on campus.
- Reporting and resolving environmental safety issues, exterior lighting, signage and other physical hazards.
- Monitoring and enforcing driving regulations.
- Blue Light Emergency Phones located across the main campus.
- Safety and security presentations, including personal safety, alcohol and drug abuse, and sexual assault prevention.

Campus Security Escorts

Although Campus Security can escort students to and from vehicles and buildings at anytime, it is a good idea to use this service when walking on campus during hours of darkness.

Campus Security Act

Each year in compliance with federal law, Campus Security prepares a Campus Security publication for all Kirkwood students, parents, faculty and staff. In this report, you will find campus crime statistics for the last three years, as well as safety-related policy and procedures. Information is prepared in accordance with the Crime Awareness and Campus Security Act enacted by Congress in 1990. The act was amended in 1992, 1998 and 2000. In 1998 it was renamed the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act. The Clery Act, as it is commonly referred to, requires all institutions of higher education give timely warnings of crimes that represent a threat to the safety of students or employees, and to make public their campus security policies. It also requires that crime data is collected, reported and disseminated to the campus community, and is also submitted to the U.S. Department of Education. The act is intended to provide accurate, complete and timely information about safety on campus, so that you make informed decisions.

To obtain a printed copy of the report, contact Campus Security, 6301 Kirkwood Blvd. SW, Cedar Rapids, Iowa 52406, or call us at 319-398-5561. This report is also available at www.kirkwood.edu/security.
Kirkwood History and Accreditation

Kirkwood is a publicly-supported college that serves Benton, Cedar, Iowa, Johnson, Jones, Linn and Washington counties in eastern Iowa. Kirkwood operates under the regulations of the Iowa Department of Education and is governed by a publicly-elected, nine-member board of trustees.

In January 1965, a steering committee conducted a study to establish a vocational school to serve parts of eastern Iowa, then known as Area X. Soon after this local study, the Iowa General Assembly approved legislation that created a system of community colleges throughout the state.

On July 1, 1966, Kirkwood was officially established, originally called "Area X Community College." The college immediately assumed responsibility for the federally-funded vocational/technical programs the Cedar Rapids Community School District had provided since 1964. The college added the Arts and Sciences, Student Services and Community Education divisions a year later. In 1969, the college board of trustees decided on a new name—"Kirkwood Community College," to honor Samuel J. Kirkwood, Iowa’s governor during the Civil War years.

In 1982, Kirkwood became a board member of the League for Innovation in the Community College, a consortium of 19 of the nation's finest two-year colleges.

Kirkwood awards Associate of Arts and Associate of Science degrees that transfer to four-year colleges and universities. Graduates in Applied Science and Technology programs are prepared to enter specialized technical careers.

Kirkwood Community College is accredited by the Iowa Department of Education and by The Higher Learning Commission, A Commission of the North Central Association of Colleges and Schools.

The Higher Learning Commission can be reached at 800-621-7440 or www.ncahlc.org. Appropriate professional associations within their respective fields accredit individual college programs.

Legal Basis of the College

The law under which Kirkwood was established and continues to operate, Section 280A in the Code of Iowa, states in part that:

Area community colleges offer, to the greatest extent possible, educational opportunities and services in each of the following areas:

1. The first two years of college work including pre-professional education.
2. Vocational and technical career training.
3. Programs for in-service training and retraining of workers.
4. Programs for high school completion for students of post-high school age.
5. Programs for all students of high school age who may best serve themselves by enrolling for vocational and technical training while also enrolled in a local high school, public or private.
6. Student personnel services.
7. Community services.
8. Vocational education for persons who have academic, socioeconomic or other disabilities that prevent them from succeeding in regular vocational education programs.
9. Training, retraining and all necessary preparation for productive employment of all citizens.
10. Vocational and technical training for persons who are not enrolled in high school and who have not completed high school.
Academic and Student Policies

Introduction

Kirkwood's Values and Standards

All students, faculty, staff, service providers and visitors who are involved with any aspect of the college’s mission are members of Kirkwood’s learning community.

As such, we share certain rights and responsibilities to each other and to the learning process; among them the right to a positive educational climate, and the responsibility to uphold values necessary to create and sustain this educational climate including:

- Valuing diversity.
- Respecting and managing resources well.
- Promoting opportunities for educational growth and development
- Encouraging a spirit of critical judgment.
- Learning to engage in a sustained and independent search for truth.
- Maintaining an orderly, civil and safe campus environment.

Productive Classroom Learning Environment

We believe that the best learning takes place in an environment where faculty and students exhibit trust and mutual respect.

In a productive learning environment, faculty and students work cooperatively, recognize and respect differences, model the values of character and citizenship, and become lifelong learners.

Special Notice to Students

Each student is responsible for being familiar with the information appearing in this catalog. Failure to read the regulations will not be considered an excuse for noncompliance. The college reserves the right to change policies or revise curricula as needed due to unanticipated circumstances. Rules and regulations have been adopted by the faculty and administration of the college. If a student finds that extenuating circumstances might justify the waiver of a particular college regulation, that student may file an appeal of policy with the One Stop office, according to established procedures.

Grades

Academic Appeals

Academic appeals are addressed to the College Academic Policies and Procedures Committee.

Appeal Process

You may appeal of final course grade provided that:

- conferences have been held first with the instructor assigning the grade and then the appropriate dean;
- the appeal is presented in writing to the chairperson of the committee;
- the written appeal must be presented to the committee within 100 calendar days from the date of which the grade was assigned.

Final Course Grade Hearing Procedure

The chairperson will notify all participants in the appeal of the time and location of the hearing. The format of the hearing consists of a verbal presentation by the student, a verbal presentation by the instructor or designee, and questions by committee members. The student and the faculty person will each have 10 minutes to present information and answer committee questions. All persons directly involved in the appeal will be given written notification of the outcome. The committee’s decision is final.

Graduation Requirement Appeal Procedure

- The student should meet with the appropriate dean to request a waiver. If the request is not resolved, the student may appeal.
- the appeal is presented in writing to the chairperson of the committee;
- the written appeal must be presented to the committee within 100 calendar days from the date of which the grade was assigned.
- The chairperson will notify all participants in the appeal of the time and location of the hearing. The student should present a written request and a verbal presentation to the committee. The student will be provided 10 minutes to present his/her request.

Staff Rights

Any faculty/staff member directly involved with any student appeal will be notified of the appeal upon receipt of such by the committee chairperson. The chairperson will also notify the staff person of the date, time and place of the appeal hearing and request that the staff member provide written information responsive to the appeal. The involved faculty/staff person or designee has the right to appear before the committee, personally present information and answer questions pertinent to the appeal.

Student Rights

The student will be notified by the chairperson of the date, time and place of the appeal hearing. The student has the right to appear before the committee, and personally present information and answer questions pertinent to the appeal.

Other Appeals

The committee may also hear other academic policy and procedure appeals as may be designated by the vice president of academic affairs for a committee recommendation.

Disposition of Appeals
Academic and Student Policies

**Grade Appeals**

Within 10 business days of the hearing, all persons directly involved in the appeal will be given written notification by the committee chairperson of the committee’s decision about the appeal. The committee’s decision is final. The plurality of the vote or the nature of the votes cast by individual committee members will not be disclosed.

**Graduation Requirements Appeals**

Within 10 business days of the appeal hearing, the committee chairperson will notify all persons directly involved of the committee’s recommendation. The committee’s decision is final. The plurality of the vote or the nature of the votes cast by individual committee members will not be disclosed.

**Auditing Courses**

Audit enrollment in courses provides students the opportunity to attend a class as a noncredit participant, usually as a listener-observer. This kind of enrollment may have value for students who want an introduction to subjects outside their major fields, a review or refresher, or other purposes where credit and grades are not needed or would pose an unnecessary academic threat.

With the permission of instructors, students can enroll in any courses on an audit basis. Students and instructors must agree on what portion(s) of courses the students plan to audit and the requirements the instructors have for attendance and participation. If the students fulfill the agreement for the audit, the grade of "N" will be entered on the students’ academic transcripts. If the students do not fulfill the audit agreements, the registrar, upon request from the instructor, will withdraw the students from the courses and assign a grade of "W."

Audit enrollments carry no credit or grade point value. No inference is made regarding the quality of a student’s mastery of the course subject matter.

Standard tuition applies to all audit enrollments regardless of the length and scope of the audit. The last day to change from graded credit to audit is the same as the last day of the class's 100% refund period. Once changed to audit, the class cannot be changed to graded credit.

**Computing Grade Point Average**

Grade point average is computed by multiplying the number of semester credits for each Kirkwood and transfer course by the numerical value, or "grade points", of the grade given for that course. These values are then added together for the total grade points, which are then divided by the total semester credits for the GPA. The grade point average is not weighted.

Example:

<table>
<thead>
<tr>
<th>Course</th>
<th>Grade</th>
<th>Grade Points</th>
<th>Semester Credits</th>
<th>Total Grade Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>A</td>
<td>4.0</td>
<td>3</td>
<td>12</td>
</tr>
<tr>
<td>Y</td>
<td>B</td>
<td>3.0</td>
<td>3</td>
<td>9</td>
</tr>
<tr>
<td>Z</td>
<td>F</td>
<td>0.0</td>
<td>4</td>
<td>0</td>
</tr>
</tbody>
</table>

Total grade points (21) divided by total semester credits (10) = 2.10 GPA.

**Credit Assignment in Emergency Situations**

After completing at least two-thirds of an academic term, a student may petition to receive a grade and credit for all courses in the program at the time of such emergency situations as:

- Induction, but not enlistment, into the United States armed services.
- Serious personal or family illness requiring the student to withdraw from all classes.
- Death in the immediate family.
- Other similar emergency circumstances that prevent the student from completing the academic term.

Students who believe they are entitled to consideration under this policy must file petitions with the One Stop office, 202 Kirkwood Hall. Appropriate documentation of emergencies must accompany petitions. A committee will review the petitions to ensure conformity with the policy. Those found to be in conformity will be forwarded for response to instructors involved. Instructor response may include assigning grades then in progress, assigning reduced grades in consideration of unmet course requirements or declining to assign grades. In any case, students retain the right to withdraw from courses.

**Dean's List**

Students with outstanding academic records are named to the Dean’s List. To qualify, a student must have completed 12 credit hours of graded coursework and achieved a grade point average of 3.3 or higher. A minimum of six graded credit hours must be earned in the term of the award.

**Forgiveness for Failing Grades**

Grades of "F" (or any other failing grades) can be changed to "O" (no credit) if:

- The student is currently enrolled, tuition has been paid and the student has not been enrolled in any program of higher education for a period of at least three consecutive
years since the final day of the term last attended.

- The student has honorably served in the U.S. armed services for at least two years since receiving the failing grades.

Grades of "F" (or any other failing grades) in one specific term can be changed to "W" (withdrawn) if:

- The student has no "W" or "O" grades and failed to complete an official withdrawal in that term.

For more information, contact the One Stop office, 202 Kirkwood Hall, 319-398-7600.

**Grading System**

Kirkwood uses a 4.0 grading system. Kirkwood grades and their grade points or meanings are provided below:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>4.00</td>
</tr>
<tr>
<td>B+</td>
<td>3.33</td>
</tr>
<tr>
<td>B</td>
<td>3.00</td>
</tr>
<tr>
<td>B-</td>
<td>2.67</td>
</tr>
<tr>
<td>C+</td>
<td>2.33</td>
</tr>
<tr>
<td>C</td>
<td>2.00</td>
</tr>
<tr>
<td>C-</td>
<td>1.67</td>
</tr>
<tr>
<td>D+</td>
<td>1.33</td>
</tr>
<tr>
<td>D</td>
<td>1.00</td>
</tr>
<tr>
<td>D-</td>
<td>0.67</td>
</tr>
<tr>
<td>F</td>
<td>0.00</td>
</tr>
<tr>
<td>P</td>
<td>No Credit</td>
</tr>
<tr>
<td>Q</td>
<td>No Credit</td>
</tr>
<tr>
<td>I</td>
<td>Incomplete</td>
</tr>
<tr>
<td>E</td>
<td>Excused Without Credit</td>
</tr>
<tr>
<td>T</td>
<td>Credit by Examination</td>
</tr>
<tr>
<td>N</td>
<td>Audit</td>
</tr>
<tr>
<td>W</td>
<td>Withdrew from Course</td>
</tr>
<tr>
<td>X</td>
<td>Course Repeated</td>
</tr>
<tr>
<td>O</td>
<td>Original Grade Removed</td>
</tr>
</tbody>
</table>

The grades A, B, C, D and F are included in the computation of grade point average. Credit toward graduation is granted for A, B, C, D, P and T.

**Incomplete Grades**

A student who is unable to complete the assigned work of a course due to extenuating circumstances may be assigned the grade "I" (Incomplete). In such cases, the instructor and the student must complete an Incomplete Grade Agreement form documenting the course requirements remaining and the date by which they must be completed.

The maximum time a student is permitted to carry an incomplete grade is one year. After this time, in the absence of any alternative grade being assigned by the instructor, the "I" grade will be changed to "F."

**Repeating Courses for a Better Grade**

Students may repeat courses taken at Kirkwood to try to improve their original grade. The lower grade will be changed to X, which carries no credit and has no effect on the grade point average. The best grade will be used in the GPA calculation. For those courses that may be taken for credit more than once, the second grade will not replace the first.

**Waiver Credits**

To issue a waiver of a course requirement, the student must describe and document all knowledge, skills and previous occupational work experience as it pertains to the course(s) in question. Upon satisfactory completion of a minimum of 16 credit hours at Kirkwood, the student request will be officially processed. The waiver of course requirements must have the final approval of the dean in each respective department. The student’s degree audit will indicate the courses that were waived under this policy. Questions regarding waiver of course requirements should be directed to the appropriate department office.

**Academic Progress**

**Academic Progress and Warning**

Students who achieve and maintain the minimum cumulative grade point average and complete course requirements in the prescribed sequence are considered to be making satisfactory academic progress. Students who fail to achieve this standard will be placed on academic warning or probation.

**Academic Warning**

Academic warnings are issued to students with non-passing grades at mid-term of the current semester.

**Academic Probation**

Students who have 24 or more attempted hours with a GPA less than 2.0 are placed on academic probation. The dean of students reviews students’ academic records each semester and will notify students of their warning or probationary status. Students will remain on academic probation until their cumulative GPA is raised to the appropriate level.

**Financial Aid Satisfactory Progress**

Federal regulations, HEA Sec. 484(c), §668.16, 668.34, require all schools participating in Title IV Federal Financial Aid programs to have a Satisfactory Academic Progress (SAP) policy that conforms to the requirements detailed below. These requirements apply to all students as one determinant of eligibility for financial aid.

Progress is measured by the student’s cumulative grade point average, percentage of credit hours earned in relation to those attempted, and the length of the academic program. In order to assure that students make progress toward earning a degree both in terms of number of hours completed and cumulative GPA, Kirkwood Community College uses the following Financial Aid SAP Policy.

<table>
<thead>
<tr>
<th>Attempted Credit Hrs</th>
<th>Completion Rate</th>
<th>Required GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–29</td>
<td>60%</td>
<td>2.0</td>
</tr>
<tr>
<td>30+</td>
<td>70%</td>
<td>2.0</td>
</tr>
</tbody>
</table>

Cumulative records are reviewed after each payment period to evaluate progress. All periods of registration, including summer term, will be evaluated regardless of whether or not financial aid was disbursed during the term. This includes remedial credits, ESL credits, and transfer credits from other institutions. Attempted credit hours will be determined at the end of the drop period each term.

The student is placed on a Warning status the first term his/her academic transcript does not meet the standards.
of SAP (see chart) with one exception. Students who fail to complete any courses within their first term of enrollment (combination of Fs and Ws) will be placed on Suspension for the following term.

If progress during the Warning term is adequate to bring the cumulative record up to the standard, the Warning status is removed. If progress in the Warning term is not enough to bring the cumulative record up to standard, the student will receive a Suspension status and be ineligible for financial aid. This suspension includes all scholarships, work-study, loans and grants.

A student can regain eligibility by completing at least one additional term of half-time work and maintaining the standards of the policy. This is an out of pocket expense. When this is accomplished, the student must notify the financial aid office and submit an academic plan (see below). Financial aid is reinstated on an Academic Plan status. Progress is monitored and the Academic Plan status is extended as long as the student follows the academic plan each semester, until the cumulative record meets the standard or the student graduates. Alternately, the student may submit an appeal (see below).

The student has the right to appeal the SAP policy if he/she believes extenuating circumstances prevented him/her from meeting the standards of the policy. Examples of extenuating circumstances would include prolonged illness for which medical attention was received, or extreme personally uncontrollable circumstances. Appeals must be in writing and include documentation of the circumstances that led to the student’s academic performance along with an academic plan. The academic plan must be comprehensive enough that it shows how a student may reach a Satisfactory SAP status or successfully graduate. Appeals should also address changes made to ensure future academic success. An Appeals Committee determines whether the appeal is approved. The decision of the committee is final and cannot be appealed further.

If an appeal is approved, and the student is mathematically capable of reaching a satisfactory status after one term of work, a student is placed on Probation. If the appeal is approved, but the student is mathematically incapable of reaching a satisfactory status after one term of work, the student is placed on Academic Plan status. Students on Probation must reach satisfactory status after one term of work or they will go on Suspension. Academic Plan students must follow the academic plan until their cumulative record meets the standard or the student graduates. If a student fails to follow the academic plan, he/she will be placed on Suspension after the next SAP review.

Federal regulations stipulate that students must complete their educational program in a reasonable length of time, which is defined as no more than 150% of the credit hours required for graduation in that program, regardless of major changes. For example, if a student is working towards a Liberal Arts-AA, which is 62 credit hours; he or she can receive aid up to 150% of the credits for that program, which is 93 credit hours. Once a student has exceeded 93 earned credits, he/she will be placed on suspension. All transfer credits are included in the earned credits including those earned as part of another degree or diploma. Students have the right to appeal the suspension as noted above. To continue to receive financial aid, they must follow the academic plan. Their academic plan may only contain courses that are required for their program. Students will be warned of this status at 125% of the credits required for graduation in their program. Students can contact the One Stop Office with questions regarding SAP.

Financial Aid Policies

Financial Aid Eligibility Requirements

To receive the maximum consideration for financial aid, students should apply as soon after January 1 as possible. An application for financial aid must be made each year. All students seeking financial aid must:

- Be enrolled or accepted in a credit diploma or degree program;
- Be seeking a degree related to the educational objective;
- Be a citizen of the United States or an eligible non-citizen;
- Not be in default for any previous education loans or owe a grant overpayment;
- Be making satisfactory academic progress according to Kirkwood’s published policy;
- Attend the classes they are registered for.

General Policies and Student Rights

Accommodation Services for Students with Disabilities

Definitions

A “disability” with respect to an applicant or student is: a physical or mental impairment which substantially limits one or more of the major life activities of an individual, a record of such impairment, or being regarded as having such impairment.

- Individuals with disabilities may include persons who have: mobility, sensory or speech impairments; cosmetic disfigurements; mental illness; mental retardation; learning disabilities; cognitive disabilities. Individuals with disabilities may also include persons who have neurological, psychological, or physical disabilities.
- “Major life activities” include: caring for oneself, performing manual tasks, walking, sitting, standing, lifting, reaching, seeing, hearing, speaking, breathing, learning, and working.

A “qualified individual with a disability” means:

- with respect to educational opportunities: a person with a disability who meets the academic and technical standards required for admission or participation in an education program or activity;
• with respect to public adult educational services: a person with a disability of any age during which non-disabled individuals are provided such services, or of any age during which it is mandatory under state law to provide such services to individuals with disabilities;
• with respect to other services: a person with a disability who meets the essential eligibility requirements for the receipt of such services.

“Otherwise qualified” means: an applicant or student with a disability is “otherwise qualified” if he or she is qualified for receipt of educational opportunities, public adult educational services or other services, in that he or she satisfies all of the fundamental academic and technical standards, essential eligibility requirements and other applicable education-related selection criteria.

Reasonable Accommodation

When requested by an otherwise qualified applicant or student with a disability to do so, Kirkwood Community College is prepared to modify or adjust the admissions process or the educational environment to make “reasonable accommodations” to an applicant or student to enable the applicant or student to be considered for admission to the program, course, activity or service he or she desires; to meet and perform academic and technical standards required for performance of an education program or activity; to meet the essential eligibility requirements for the receipt of other services; or to enjoy equal benefits and privileges of education as are enjoyed by other similarly situated applicants or students without disabilities.

Reasonable accommodations and modifications may include:
• making existing academic facilities used by students and the public readily accessible to and usable by individuals with disabilities;
• altering when and how academic or technical requirements are met or performed; adjusting or modifying admission and performance tests, educational materials or policies;
• allowing readmission upon review and evaluation;
• providing or arranging counseling services;
• providing readers, interpreters or tutors; adapting or modifying the manner and method of instruction and testing;
• allowing applicants or students to provide equipment or devices that the College is not required to provide;
• and other similar accommodations.

In determining the College’s ability to offer reasonable accommodation to an otherwise qualified applicant or student with a disability, each request for an accommodation will be evaluated on a case-by-case basis. Factors to be examined include, among others: the academic and technical standards required for admission or participation in an education program or service; the purpose and nature of the program, course, and/or service; the precise education-related abilities and functional limitations of the applicant or student and how those limitations could be overcome with reasonable accommodation; the nature and cost of the accommodation required in relation to the College’s financial resources; the consequences of such an accommodation upon the operation and educational mission of the College, course, program, service and/or activity; and other federal, state, and local regulatory requirements.

An otherwise qualified applicant or student who requires attendant care services must make arrangements to provide for his/her own attendant care service. The College does not assume coordination or financial responsibilities for attendant care services.

The College is not required to offer or provide an accommodation to admit or to continue to admit an individual with a disability to any particular program, course, service, and/or activity or to provide educational opportunities and other services when:
• an accommodation would substantially alter the educational standards or mission of Kirkwood Community College;
• an accommodation would fundamentally alter the nature of the program, course, service and/or activity;
• taking into account the disabled applicant or student’s qualifications along with the requested accommodation, he or she is not otherwise qualified to meet the academic and technical standards required for admission or participation in an education program, course, service and/or activity;
• reasonable accommodation would not overcome the effects of the individual’s disability;
• reasonable accommodation would not enable the individual to complete a program, course, service and/or activity;
• an accommodation would cause an undue financial or administrative hardship on the College;
• with respect to accommodations mandated by the Americans with Disabilities Act and section 504, even with reasonable accommodations, the individual would still pose a direct threat to the health or safety of himself/herself or others.

Reasonable accommodation does not negate requirements for successful completion of a program, course, service and/or activity, adherence to generally acceptable standards of behavior and the College’s code of conduct, and adherence to administrative and faculty directions and instructions. If the academic, technical, or other standards required for admission or participation in an education program, course, service and/or activity are expanded, revised, or modified, the conditions and procedures stated in this policy shall apply to any evaluation of the student’s ability to perform the expanded, revised, or modified requirements and the College’s determination whether reasonable accommodation will be provided.
Request for reasonable accommodation

To request reasonable accommodation under this policy, an applicant or student must submit an application form to the Dean of Learning Services (or his/her designee) requesting reasonable accommodation and describing the nature of the requested accommodation. An applicant or student should also indicate the nature of the claimed disability and identify his or her abilities and functional limitations with respect to the claimed disability. The applicant or student must attach documentation of a disability to the application form.

In the application process and form, the applicant or student with a disability shall also assist the College in determining if and what reasonable accommodations might be provided by identifying in writing or otherwise:

- any special methods, skills, or procedures that would enable him or her to perform the tasks, functions, or requirements that he or she otherwise might not be able to perform because of his or her disability;
- the accommodations the College might make that would enable him or her to perform and meet the academic and technical standards required for admission to or participation in an educational program, course, service, and/or activity; and
- any equipment, aids, or services that the applicant or student is willing to provide and utilize that the College is not required to provide.

If the applicant or student requires secretarial or other assistance in preparing such written statement or request due to his or her disability, this will be provided upon request.

Response to applicants and students who request reasonable accommodation

The College may make inquiries of applicants concerning the presence of a disability, but recognizes that such inquiries will be for the purpose of planning support services and such inquiries will not form the basis for any decision regarding acceptance or enrollment in educational programs.

An otherwise qualified student who identifies himself or herself as having a disability and requests reasonable accommodations will be required to provide appropriate documentation, including medical, psychological, and educational records sufficient to establish the existence of a claimed physical or mental impairment and the need for accommodations as outlined previously.

Once a student completes an application for accommodation, the student should supply documentation as quickly as possible, including medical, psychological, and educational records if appropriate, to the Dean of Learning Services (or his/her designee). A specific plan for accommodation cannot be implemented until the student has supplied all pertinent documentation. An application for accommodation should be completed before the beginning of the semester, or as early in the semester as possible, to allow as much time as possible to develop and implement an accommodation plan which will be useful to the student. The later in the semester the application process begins, the less likely an accommodation plan can be fully implemented to accommodate the student’s needs within that semester. If accommodation requests are submitted too late within the semester, the College reserves the right to not implement the accommodation request within that semester. Accommodations will not be retroactive within the semester.

The College, through the Dean of Learning Services, will review the documentation and make a determination regarding the claimed disability of a student within two (2) weeks (14 calendar days) upon receipt of all documentation and evaluations requested. Once the College determines the student is disabled, the College will communicate that decision to the student by means of a letter which assigns the student to a case manager.

Providing reasonable accommodation

As discussed previously, a determination of whether the College considers a student to be disabled will be made by the College. If a student is determined to be nondisabled, no offer of reasonable accommodation will be made to the student. If, however, an applicant or student is determined to be disabled and has requested a reasonable accommodation, a determination of what reasonable accommodation will be made to an applicant or student will then be made by the College. Specifically, an assessment of:

- the academic and technical standards required for admission or participation in an educational program or activity by the applicant or student, and
- the essential eligibility requirements necessary for receipt of other services will be made based on the individual’s precise academic and technical abilities and functional limitations and whether and/or how a reasonable accommodation would enable the applicant or student to overcome those limitations to perform and meet all of the requisite academic, technical, and other standards.

The determination of whether and/or what reasonable accommodation will be made for an applicant or student shall be made by the Dean of Learning Services (or his/her designee), individually or in consultation with appropriate administrators, instructors, and medical or other personnel related to the College. In making this assessment, the Dean of Learning Services (or his/her designee or the case manager) will consult with the applicant or student regarding the precise education related limitations imposed by the disability, potential reasonable accommodations to overcome those limitations, and the effectiveness of various accommodations in enabling the applicant or student to perform the academic, technical, or other requirements of the course, program, activity, or service in question.

Accommodations will not be offered that would substantially modify the educational standards, operation, and/or mission of the College. An accommodation that would be unduly costly, extensive, substantial, or disruptive or that would fundamentally alter the na-
tured as deemed appropriate by the Committee to reach a decision concerning appeals within two (2) working days following the conclusion of the appeal hearing. The Chairperson of the Educational Equity Steering Committee will notify all parties involved of the Committee’s decision.

Students needing additional assistance with auxiliary aids may contact the Disability Services Director in 2020 Cedar Hall.

**Alcohol and Drug Policy**

**Alcohol Policy**

The on-campus use of alcoholic beverages is allowed at Kirkwood only where prior written approval for the serving of alcohol has been obtained from the president (or designee). All Iowa state laws and local statutes regarding the, use, purchase, possession, distribution, or dispensation of alcohol must be observed. Food and nonalcoholic beverages must also be made available at events in which alcoholic beverages are served. Alcohol is prohibited at any event in which the majority of participants are under the age of 21; where alcoholic beverages are the focal point of the event, or which contributes to alcohol overindulgence or abuse.

**Drug Policy**

The unlawful use, possession, distribution, or dispensation of any narcotic (including prescription medications), dangerous drug or controlled substance is strictly prohibited on campus or at any college-sponsored activity.

**Sanctions**

There are substantial penalties for drug and alcohol violations. Individuals are subject to federal, state and local laws, as well as college policies. Both state and federal laws prohibit distribution or manufacture of controlled substances or counterfeit controlled substances. Penalties can result in imprisonment and fines depending on the severity of the crime.
State and local ordinances regulate alcohol. Underage possession of alcohol, driving while intoxicated, public intoxication, public consumption, serving underage intoxicated individuals, open containers and large private parties are all affected by these laws. Check with the local police department for more information. The college may also impose sanctions against students and employees who violate this policy. The procedures for administering sanctions are described below under, "Procedures."

Procedures

Students who violate this policy may be referred for an educational/treatment program and may be subject to disciplinary action in accordance with the policies and procedures outlined in the Student Conduct Code. The Dean of Students or designee will determine if the student is responsible for violating this policy and will impose appropriate sanctions. Sanctions may include warning, probation, suspension, expulsion, and other discretionary sanctions, including educational or treatment programs.

Hazards of Drug Use and Available Services

- Illicit drug use may result in:
  - physical or psychological dependency;
  - a craving or inability to stop using drugs;
  - adverse effects on body systems;
  - injury due to motor vehicle crashes, assaults or other unintended acts;
  - disruption of personal relationships and work habits;
  - ineligibility for some types of employment;
  - Additional information about specific drugs and their effects is available from the Campus Health office, Iowa Hall.

Kirkwood Alcohol/Drug Abuse Program

- Campus Health, 319-398-5588 (Support groups, substance abuse counselor, student assistance team)
- Employee Assistance Program
  Cedar Rapids, 319-398-6694

Additional Agencies

- Area Substance Abuse Council
  Cedar Rapids, 319-390-4611 or Vinton, 319-472-2443
- Sedlacek Treatment Center
  Cedar Rapids, 319-398-6226
- Alcoholics Anonymous
  Cedar Rapids, 319-365-5955
- Hillcrest Family Services
  Cedar Rapids, 319-362-3149
- Mental Health Institute
  Cedar Rapids, 319-398-3562 or Independence, 319-334-2853
- Mid-Eastern Council on Chemical Abuse
  Iowa City, 319-351-4357
- St. Luke’s Hospital Chemical Dependency Services
  Cedar Rapids, 319-369-7384

Campus Security (Clery) Act

Each year in compliance with federal law, Campus Security prepares a Campus Security publication for all Kirkwood students, parents, faculty, staff, and the community. In this report, you will find campus crime statistics for the last three years as well as safety related policy and procedures.

Information is prepared in accordance with Crime Awareness and Campus Security act enacted by Congress in 1990. The act was amended in 1992, 1998, 2000, and 2008. In 1998, the law was renamed the Jeanne Clery Disclosure of Campus Security Policy and the Campus Crime Statistics Act. The Clery Act as it is commonly referred to, requires all institutions of higher education give timely warnings of crimes that represent a threat to the safety of students or employees, and to make public their campus security policies. It also requires that crime data is collected, reported and disseminated to the campus community, and is also submitted to the U.S. Department of Higher Education. The act is intended to provide accurate, complete, and timely information about safety on campus so people may make informed decisions.

A printed copy of the report may be obtained by contacting Campus Security, 6301 Kirkwood Blvd SW, Cedar Rapids, Iowa 52406, calling Campus Security at 319-398-5561, or going to www.kirkwood.edu/security.

Cancellation and Delay Policy

The college may close on occasion due to weather or other emergency situations. Except in extreme cases (such as a multi-day blizzard), classes will always be canceled in segments of the day. The first cancellation announcement will cancel daytime classes 7 a.m. - 5 p.m. The cancellation will note that the evening decision will be made and announced by 3:00 p.m. In extreme conditions the President or his designated representative may close for the entire day and evening.

Some facilities (KTOS, The Kirkwood Center, The Hotel, KCETC) serving employer clients or external rental customers will remain open based on client activities.

The college may close during the day if inclement weather requires it and times will vary based on the severity of the conditions and timing of the storm.

It is the general policy for office and services to close if the college has closed. Offices and services that would normally be open in the evening are required to be open if evening classes are held.

All locations will close at the same time with the following exceptions:

- Extreme cases such as flood waters cresting on different days, isolated ice storms, localized power outages, etc. may cause a location to close when main campus remains open. County Centers will not announce such closing to the CR/IC media to avoid confusion. Iowa City or other Linn County locations may use the media if the Executive Director, Communications & Marketing deems it necessary and effective. The lead person at each off campus site will make these calls in consultation with their cabinet member or Associate Vice President, Facilities & Security.
Copyright Policy

Kirkwood Community College respects the legal right of ownership of intellectual property in all media. It is the policy of Kirkwood Community College that all members of the College adhere to the provisions of the United States Copyright Law (Title 17, United States Code, Sect. 101, et seq.).

Faculty and staff are reminded that it is unlawful to copy, distribute or display copyrighted material without written permission from the copyright holder, unless fair use or educational exceptions apply. Both the individual requesting such services and the individual performing the services may be liable for copyright infringement. Please consult the Kirkwood Libraries with questions concerning copyright exceptions.

Discrimination and Harassment

Kirkwood Community College is an equal access/equal employment opportunity institution in compliance with local, state and federal laws and does not discriminate on the basis of sex, race, color, creed, religion, national origin, age, sexual orientation, gender, gender identity, physical attributes, physical or mental ability, marital status, veteran status, genetic information, or socioeconomic status. The Human Resources Department is available to answer questions or provide additional information related to the College’s Equal Employment Policies and Affirmative Action Plan. Human Resources department may be reached at 319-398-5572.

Kirkwood employees and students who feel they have been discriminated against on the basis of sex, race, color, creed, religion, national origin, age, sexual orientation, gender, gender identity, physical attributes, physical or mental ability, marital status, veteran status, genetic information, or socioeconomic status may seek remedy through an internal complaint process. The College assures that full cooperation will be provided to any individual filing a complaint with no threat of penalty or reprisal to the complainant.

Any person who believes that they have been the recipient of a discriminatory or harassing act may file a complaint with the Executive Director, Human Resources, Michael Roberts, 313 Kirkwood Hall, at extension 5572; or Vice President, Academic Affairs, Bill Lamb, 100 Iowa Hall, at extension 5509. If the complaint involves alleged discriminatory or harassing behavior by the Executive Director, Human Resources, the Vice President, Academic Affairs (319-398-5509) should be contacted in lieu of the Executive Director, Human Resources.

If you witness or experience harassment or sexual harassment, we strongly encourage you to report the incident immediately.

Domestic Travel Policy and Practice

Off-campus travel by students must be approved in advance by the appropriate dean or designee if the travel:
1) Includes an overnight stay;
2) Involves a Kirkwood vehicle or rental vehicle, or
3) Occurs outside of the College’s seven county service area

The department or student organization must designate a faculty or staff member to serve as the trip sponsor who is responsible for providing trip information to the appropriate individuals as outlined in section IV of this policy. The trip sponsor must accompany the students on the trip unless special permission is granted by the Vice President of Academic Affairs and/or the Vice President of Student Services or their designees allowing the student(s) to travel alone.

Other off-campus travel by students that does not meet one of the conditions set forth requires prior approval/notification to an immediate supervisor or designee by the faculty or staff member sponsoring an activity involving in-district travel.

Modes of Transportation

Whenever possible, each student will travel to and from their destinations in transportation provided by the College.

Exceptions may be made by the appropriate dean or designee. When a personal mode of transportation is approved, the student(s) are responsible for making travel arrangements and all associated travel expenses, and the student(s) assume all liability in the event of an accident or mishap. The College cannot be held liable for accidents or injuries sustained in private vehicles.

Student Conduct

The Student Conduct Code applies to students who are participating in travel activities. Alleged student conduct violations occurring during travel will be adjudicated according to the procedures described in the Student Conduct Code. In such cases the trip sponsor will notify the appropriate dean or the Dean of Students of the alleged misconduct. The accused student may be sent home pending the outcome of those disciplinary proceedings as determined by trip sponsor, the supervising dean, and the dean of students. Such decisions will be made on a case by case basis.

Students must participate in all scheduled activities as directed by the trip sponsor. Students, who wish to participate in activities outside of those directed by the trip sponsor, must receive approval from the trip sponsor prior to beginning the activity. In such cases, the students are responsible for any expenses incurred relating to the outside activity.

Notification and Approval Process

The trip sponsor will ensure all necessary arrangements have been made prior to embarking on domestic travel. The procedures for domestic travel are as follows:

1. Complete the Student Domestic Travel Notification form. The notification will include the purpose of the trip, date(s), destination, mode of transportation, name and location of any overnight accommodations, names and contact information of participants, and their emergency contacts. The notification form will be submitted to the appropriate dean or designee at least five work days prior to the departure date for all travel requiring advance approval.
and prior to departure for all travel that does not require advance approval. The dean or designee will maintain a record of the notifications in the event the College needs to reach participants or their emergency contacts.

2. A travel contract must be completed prior to departure by students. Completed contracts will be filed in the office of the appropriate dean or designee along with the travel notification form.

Note: Student travel occurring outside of the United States is handled according to the policies and procedures described in the International Student Travel Policy.

**Minor Children on Campus**

**Student Guidelines**

Children may visit certain college offices and facilities for limited periods of time when their parent or guardian is conducting routine business at the college. However, regular repeated visits by children are not permitted. Under no circumstances are children permitted in:

- Labs, shops, construction/repair sites, other areas where potential hazards exist or recreation facilities, unless those facilities are being used for activities intended to include children (e.g. family hours, sports camps, etc.).
- Testing centers
- Computer classrooms
- Classrooms: except when the child’s presence is necessary for classroom activities.
- A child should never be left unattended while the parent or guardian is attending class, conducting other business or attending a public event on campus.
- Line of sight supervision by the parent or guardian is required at all times; should a child become disruptive, the student and child may be asked to leave.

**Visitor Guidelines**

The following guidelines apply to bringing children to the campus by visitors:

- Line of sight supervision by the parent or guardian is required at all times.
- Parent or guardian must assure that children are not disruptive.
- Parent or guardian must not leave children unattended while on campus, including athletic or other Kirkwood activities.

Kirkwood Community College assumes no responsibility or liability for children, or for any accidents or injuries to children. For the purposes of this policy, a child is defined as any youth under the age of 18 who is not officially registered in a Kirkwood Community College class.

**Sexual Misconduct Involving Students**

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I. The Policy

This Policy prohibits sexual misconduct in any form, including sexual assault, sexual harassment, sexual exploitation, stalking, domestic violence, dating violence, and retaliation, all as defined in Section II. The College will respond to reports of sexual misconduct in accordance with this Policy.

II. Definitions

Sexual harassment can include unwelcome behavior (verbal, written, physical) that is directed at someone because of that person’s sex or gender,
and that meets either of the following criteria:

- A College employee or agent explicitly or implicitly conditions an educational decision or benefit on submission to sexual conduct (e.g., sexual favors for a better grade, more playing time; threatening (explicitly or implicitly) negative consequences if the student rejects sexual advances). OR
- The behavior creates a hostile, intimidating or demeaning environment that is sufficiently severe, pervasive or objectively offensive to substantially interfere with or deny participation in a student's educational activities and benefits or employment opportunities. Examples can include persistent efforts to develop a sexual relationship; bullying/cyber-bullying of a sexual nature or for a sexual purpose; unwelcome commentary about an individual's body or sexual activities; unwanted sexual attention; repeated and unwelcome sexually-oriented teasing, joking or flirting; verbal abuse of a sexual nature. Behavior could be verbal, non-verbal (e.g., gestures, touching), written or electronic.

Determination as to whether the alleged conduct constitutes sexual harassment should take into consideration all of the circumstances, including the context in which the alleged incidents occurred.

Sexual assault occurs when physical sexual activity is engaged in without the consent of the other person or when the other person is unable to consent to the activity due to incapacitation.

Consent means words or clear, unambiguous actions that show a knowing and voluntary agreement to engage in mutually agreed-upon sexual activity.

- Consent is voluntary. It must be given without coercion, force, threats, or intimidation.
- Consent is affirmative. Consent means positive cooperation in the act or expression of intent to engage in the act pursuant to an exercise of free will. Silence or the absence of resistance does not equate to consent.
- Consent is clear. If confusion or uncertainty on the issue of consent arises anytime during the sexual interaction, the sexual activity should cease.
- Consent is revocable. Consent to some form of sexual activity does not imply consent to other forms of sexual activity. Consent to sexual activity on one occasion is not consent to engage in sexual activity on another occasion. A current or previous dating or sexual relationship, by itself, is not sufficient to constitute consent. Even in the context of a relationship, there must be mutual consent to engage in sexual activity—every time. Consent must be ongoing throughout a sexual encounter and can be revoked at any time. Once consent is withdrawn, the sexual activity must stop immediately.
- Consent cannot be given when a person is incapacitated.

Incapacitation means the inability (temporarily or permanently) to give consent because the individual is mentally and/or physically helpless, asleep, unconscious, or unaware that sexual activity is occurring.

- Being intoxicated by drugs or alcohol oneself does not diminish the responsibility to obtain consent from the other party.
- The factors to be considered when determining whether consent was given include whether the accused knew, or whether a reasonable person should have known, that the complainant was incapacitated.

Sexual exploitation involves taking sexual advantage of another person, even though the behavior might not constitute sexual assault. Examples can include, but are not limited to:

- Distribution or publication of sexual or intimate information about another person without consent
- Electronic recording, photographing, or transmitting sexual or intimate utterances, sounds, or images without knowledge and consent of all parties
- Engaging in indecent exposure
- Sexual intimidation, which is an implied or actual threat to commit a sex act against another person, or behavior used to coerce participation in a sex act, when no sex act actually occurs
- Voyeurism, which involves both secretive observation of another's sexual activity or secretive observation of another for personal sexual pleasure

Retaliation. This Policy prohibits retaliation against a person who reports sexual misconduct, assists someone with a report of sexual misconduct, or participates in any manner in an investigation or resolution of a sexual misconduct report. Retaliation includes threats, intimidation, reprisals, and/or adverse actions related to employment or education.

Stalking means:

a. purposefully engaging in a course of conduct directed at a specific person ("target") that would cause a reasonable person to fear bodily injury to, or the death of, the target or a member of the target's immediate family;

b. when the person ("stalker") knows or should know that the target will be placed in reasonable fear of bodily injury to, or the death of, the target or a member of the target’s immediate family by the course of conduct; and

c. the stalker’s course of conduct induces fear in the target of bodily injury to, or the death of, the target or a member of the target’s immediate family.

Dating Violence means violence committed by a person who is or has been in a social relationship of a romantic or intimate nature with the victim. The existence of such a relationship shall be determined based on a consideration of:

a. The length of the relationship.

b. The type of relationship.
c. The frequency of interaction between the persons involved in the relationship.

Domestic Violence: Means an assault, under any of the following circumstances:

a. The assault is between family or household members, who resided together at the time of the assault;

b. The assault is between separated spouses or persons divorced from each other and not residing together at the time of the assault;

c. The assault is between persons who are parents of the same minor child, regardless of whether they have been married or have lived together at any time;

d. The assault is between persons who have been family or household members residing together within the past year and are not residing together at the time of the assault.

Investigators mean the individuals designated by the Vice President for Student Services to conduct investigations of alleged sexual misconduct, and to determine whether to grant a hearing, as described in Article VI, B. Formal Resolution, of this Policy.

Sexual Misconduct Board means the group of faculty, staff, and administrators appointed by the Vice President for Student Services to hear complaints of sexual misconduct, and who are trained to do so.

Student includes all persons taking courses at Kirkwood Community College, either full-time or part-time, pursuing degree or non-degree programs including continuing education and distance courses. Persons who withdraw after allegedly violating the Student Code, who are not officially enrolled for a particular term but who have a continuing relationship with the College, or who have been notified of their acceptance for admission are also considered "students," although not enrolled in this institution.

III. Policy Scope

A. Jurisdiction

This Policy applies to all Kirkwood Community College students, as defined in Section II, regardless of sexual orientation, and in particular students who:

- Are victims of any form of sexual misconduct, by any other person (student, employee, or others outside the College community)
- Are accused of engaging in behavior prohibited by this Policy

Any person may file a complaint alleging sexual misconduct against a student. However, with respect to any complaint that is 1) by a person who is not a member of the College community, and 2) relating to non-College conduct, the College reserves the right to determine, in its sole discretion, whether the conduct described in the complaint bears a sufficient nexus to the educational program or employment relationship of a Kirkwood student/employee or constitutes a sufficient risk to the College community to proceed under this Policy.

B. Geographic Location (On and Off Campus)

This Policy applies to any alleged sexual misconduct against a Kirkwood student, regardless of where the alleged sexual misconduct occurred.

IV. Confidentiality

Kirkwood is committed to creating an environment that encourages students to come forward if they have experienced any form of sexual misconduct. The College will work to safeguard the identities and privacy of the students who seek help or who report sexual misconduct. However, it is important that students understand the limits on confidentiality of individuals whom they may contact for such assistance. Different people, depending on their positions, have different obligations with regard to confidentiality.

Under Iowa law, communications with some individuals are confidential. Students who want to maintain confidentiality should always confirm whether confidentiality applies to the communication before they make the communication. Generally, confidentiality applies when a student seeks services from the following persons:

- Trained and statutorily certified victim's advocate (this includes advocates working from the Riverview Center or Waypoint Services). See Section VII.A. Confidential Advocacy and Support.
- Licensed Psychological counselor (including counselors Kirkwood Counseling Services)
- Licensed Health care provider (including medical professionals at Kirkwood Student Health)
- Personal attorney representing the victim
- Religious/spiritual counselor

Any other College employee cannot guarantee complete confidentiality. However, information is disclosed only to select officials who have an essential need to know in order to carry out their job responsibilities. As is the case with any educational institution, the College must balance the needs of the individual student with its obligation to protect the safety and well-being of the community at large. Therefore, depending on the seriousness of the alleged incident, further action may be necessary, including a timely warning notice. The notice, would not contain any information identifying the student who brought the complaint.

V. Reporting Sexual Misconduct, including Sexual Assault and Sexual Harassment

Contacting Police or Campus Security does not mean a student must pursue charges. Campus Security and local law enforcement can advise students of their options and can also preserve evidence while the person considers her/his options.

A. Reporting to Law Enforcement

Because sexual misconduct may constitute both a violation of college policy and criminal activity, the college strongly encourages, but does not require, students to report concerns of sexual misconduct to law enforcement as soon as possible after the incident. A student may proceed under this Policy whether or not he or she elects to report to law enforcement as well.
For emergencies, contact 9-1-1.

To contact law enforcement in non-emergency situations, call the non-emergency number for your local police department.

B. Reporting to Kirkwood

To seek assistance and support, or to report misconduct in non-emergency situations, contact the Dean of Students Office, 108 Iowa Hall, 319-398-5540 or Campus Security, 319-389-1774. Other reporting options include:

- Contacting Title IX Coordinator, Jon Buse, Vice President Student Services, at:
  Jon.Buse@kirkwood.edu
- 319-398-4977
- 307 Mansfield Center
- Contacting a Deputy Title IX Coordinator:
  a. Bobbi Miller, Associate Dean of Students, 319-398-7798, bobbi.miller@kirkwood.edu
  b. Melissa Jensen, Director Emergency Services and Campus Security, 319-398-5491, melissa.jensen@kirkwood.edu
  c. Mike Roberts, Director of Human Resources, 319-398-7797, michael.roberts@kirkwood.edu

C. Amnesty for Complainants and Participants in Investigations

The College will not pursue disciplinary action for improper use of alcohol or other drugs against a student who reports in good faith an incident of sexual misconduct, or who participates in good faith in an investigation into an incident of sexual misconduct.

D. Time Frames for Reporting and Response

The College strongly encourages prompt reporting of complaints and information. While there is no time limit in invoking this Policy in responding to complaints of alleged sexual misconduct, a complaint should be submitted as soon as possible after the event takes place.

Individuals are encouraged to report sexual misconduct immediately in order to maximize the College’s ability to respond promptly and equitably. The College does not, however, limit the time frame for reporting. The College will not be able to pursue disciplinary action against an individual who is no longer affiliated with the College. Under those circumstances, the College will still conduct a Title IX review.

In all cases, the College will conduct a prompt and equitable investigation of allegations of sexual misconduct. Generally, the College will attempt to complete the process within 60 days. However, the time frames set forth in these procedures are meant to provide guidance, and the College may alter or extend time frames, with notice to the parties, as appropriate. The time it takes to complete the resolution of a sexual misconduct complaint may vary based on the complexity of the investigation and the severity and extent of the alleged conduct, as well as on whether there is a parallel criminal investigation, or if school breaks occur during the process.

VI. Process for Responding to Reports of Sexual Misconduct

A. Initial Steps

1. Initial Meeting with the Complainant

Upon receipt of any report of sexual misconduct, the Dean of Students or designee will first schedule a meeting with the reporter (referred to as “Complainant” for ease of reference, although a report does not necessarily have to result in a formal complaint) in order to provide the Complainant a general understanding of this Policy and to identify forms of support or immediate interventions available to the Complainant. The intake meeting may also involve a discussion of any accommodations that may be appropriate concerning the Complainant’s academic, employment, or housing arrangements.

If the Complainant would like assistance throughout any College investigation or adjudication process, the Dean of Students Office will make a student services staff member available to the Complainant. This staff member is not an “advocate” as that term is used below (see Article VII, A, Confidential Advocacy and Support), nor is that staff person a representative who will speak on behalf of the Complainant in any investigatory or adjudication process. Rather, the staff member serves as a point of contact to answer questions and explain processes, to make sure the Complainant’s expressed needs are being addressed, and to join the Complainant in meetings if requested. (The Dean also will provide the same resource to students accused of sexual misconduct.)

At the initial intake meeting with the Complainant, the Dean or designee will seek to determine how the Complainant wishes to proceed. The Complainant may opt for: (1) formal resolution (see section B, below); (2) informal resolution (see section C, below); or (3) not proceeding.

2. Notification of the Title IX Coordinator

The Dean of Students or designee will notify the Title IX Coordinator and the deputy Title IX coordinator(s) of the report (even if the report does not proceed). This is to keep the Title IX Coordinator apprised of any potential patterns of misconduct and/or the need for further training or other prevention measures.

B. Formal Resolution

A Complainant may elect to pursue a formal resolution, which involves a hearing before the Sexual Misconduct Board. Such a hearing is also referred to as “formal resolution,” and is described more specifically in this section.

1. Investigation

When the Complainant indicates a desire to pursue formal resolution, the Dean of Students will meet with the Complainant and prepare a written complaint. The Dean will consult with the Title IX coordinator and the deputy Title IX coordinators in appointing a person(s) to serve as investigator(s) of the complaint. The investigator(s) may
be a College administrator or someone retained by the College, such as an attorney, mental health professional, or another person trained to conduct investigations of sexual misconduct. The investigators serve as neutral fact-finders, who during the course of the investigation, typically conduct interviews with the Complainant, the accused student(s) and each third-party witness; visit and take photographs at each relevant site; and where applicable, coordinate with law enforcement agencies to collect and preserve relevant evidence.

2. Investigative Report

After conducting the investigation, the investigator(s) will complete an investigative report that includes, among other things:

- Summaries of interviews with the complainant, the accused student and each third-party witness; photographs of relevant sites and related logs; electronic and forensic evidence; and a detailed written analysis of the events in question.
- A recommendation on whether or not there should be a hearing, based on factors including whether there is a substantial dispute in the facts, the availability of witnesses and evidence, etc. The Title IX coordinator will make the ultimate decision on whether a hearing will be held.

The investigative report will be distributed, concurrently, to both of the parties and to the Dean of Students and Title IX Coordinator. If a hearing is held, the Sexual Misconduct Board will also be provided with a copy of the report.

3. Determining Whether to Hold a Hearing

If the Title IX Coordinator decides, upon consideration of the investigator’s recommendation, to hold a hearing, notice of that determination will be delivered, concurrently, to the Dean, the Complainant, and the accused student(s). A student whose request for a hearing is denied by the Title IX Coordinator may appeal that decision to the President or designee, whose decision will be final.

4. Complainant Changes Election to Informal Resolution or Accused Student Elects to Accept Responsibility

After reviewing the investigative report, the Complainant may decide to elect Informal Resolution instead of formal resolution, by making such a request to the Dean of Students prior to the hearing date. At any point prior to the hearing, the accused student may elect to admit responsibility for the alleged sexual misconduct. In such cases, the Dean of Students or designee will propose a resolution to the complaint and a sanction. If both the Complainant and the accused student agree to the proposed sanction, the complaint is resolved without a hearing and without any further rights of appeal by either party. If either the complainant or the accused student objects to the proposed sanction, a hearing before the Board will be convened for the sole purpose of determining a sanction, and in these cases, the decision of the Board may be appealed pursuant to paragraph 13, “Appeals,” below. For purposes of this sanction hearing, all of the other provisions of this Policy relating to the imposition of a sanction for Sexual Misconduct will apply.

5. Advisors

The Complainant and the Accused Student may have an advisor present to assist them during the pre-hearing, hearing, and appeal stages of the complaint process. The advisor may be an attorney chosen at the student’s expense. However, advisors are not permitted to speak or to participate directly in the process, including at any hearing before a Sexual Misconduct Board. Students should select as an advisor a person whose schedule allows attendance at the scheduled date and time for the hearing because delays will not normally be allowed due to the scheduling conflicts of an advisor.

6. Notice of Hearing and Pre-Hearing Meetings

If a hearing is scheduled, the Dean of Students will provide written notice to both parties pursuant to Article IV, A. 4 of the Student Conduct Code. In addition, the Dean of Students or designee will schedule separate meetings with the Complainant and the accused student to review the hearing procedures and the complaint of sexual misconduct.

7. Hearing Procedures

Unless otherwise stated in this Policy, the pre-hearing and hearing procedures will follow the rules and procedures described in Article IV, of the Student Conduct Code.

8. Conduct of the Hearing

Formal rules of process, procedure, and/or technical rules of evidence, such as are applied in criminal or civil court, are not used in these proceedings. During the hearing, the parties will be expected not to repeat undisputed details or non-material circumstances that would merely duplicate information contained in the investigative report or in other written materials. Only the Board Chair and Board members may question the parties and other witnesses directly. The parties may pose written questions to the Chair to be asked of the other party or other witnesses consistent with Article IV, A, 10, i, of the Student Conduct Code. All procedural questions, including the decision to accept evidence and/or statements, will be made by the Chair, in his or her sole discretion.

In cases of sexual assault, measures may be taken to avoid contact during the hearing between the complainant and the alleged perpetrator (e.g., videoconferencing).

9. Standard of Proof

The determination of whether or not a violation of this Policy occurred will be made on the basis of whether it is more likely than not that the accused student violated this Policy. This standard is more formally referred to as the “preponderance of evidence” standard. In making its determination, the Board will carefully consider all of the evidence presented and follow the procedures stated in this Policy and the applicable sections of the Student Conduct Code in order to ensure as fair a hearing as possible for all parties.

10. Sanction

The Board is required to consider the suspension or expulsion (permanent suspension) of any student found re-
11. Decision

The Board Chair will notify the Dean of Students of the decision and any sanctions imposed in writing within five (5) business days of completion of the hearing. Within ten (10) business days of completion of the hearing, the Dean of Students will notify the Complainant and accused student of the decision and any sanctions imposed.

12. Appeals

Within five (5) business days of delivery of the written decision to them, the Complainant, accused student, or both, may appeal the Board’s decision and/or the sanction imposed to the President or designee. Such appeals will be in writing and will be delivered to the Dean of Students or his or her designee. The President or designee will determine if the decision and/or sanctions imposed will be stayed pending the outcome of the appellate decision.

Except as required to explain the basis of new information, an appeal will be limited to a review of the verbatim record of the hearing and supporting documents for one or more of the following purposes:

• Determine whether the Sexual Misconduct Board Hearing was conducted in substantial compliance with prescribed procedures. Deviations from designated procedures will not be a basis for sustaining an appeal unless significant prejudice results.

• Determine whether substantial evidence supports the Board’s findings of fact.

• Determine whether the sanction(s) imposed were appropriate for the violation of this Policy and/or the Student Conduct Code which the student was found to have committed.

• Consider new, material information, which was not brought out in the original hearing, because such information was not known or was not available to the person appealing at the time of the original hearing.

The President of the College or designee may affirm, reverse, or modify the decision regarding the violation and/or sanctions imposed. The appeal decision of the President or designee is the final decision of the College, and no further appeals are permitted under this Policy.

All parties will be informed of the results of the appeal decision as promptly as possible.

C. Informal Resolution

A Complainant who does not wish to pursue formal resolution may request a less formal proceeding, known as “Informal Resolution.” Although less formal than formal resolution, Informal Resolution is an appropriate resolution process; it is not mediation.

1. Election of Informal Resolution

The College Title IX Coordinator will assess the severity of the alleged harassment and the potential risk of a hostile environment for others in the community to determine whether informal resolution may be appropriate.

2. Investigation

Upon determining that informal resolution is appropriate, and in instances when the Complainant makes such a request to the Dean of Students, the Title IX Coordinator will assign the informal resolution to an Investigator. The Investigator will consult further with the person initiating the request, inform the person who is the subject of the allegations, and gather additional relevant information as necessary from the parties and others, as indicated. The Title IX Coordinator also may put in place any appropriate interim measures to protect the educational and work environment. The Title IX Coordinator or the Investigator will attempt to aid the parties in finding a mutually acceptable resolution.

3. Advisors

The complainant and the accused student each may be assisted by an advisor throughout the Informal Resolution process. Advisors are assigned and subject to the same restrictions set forth for advisors in Formal Resolution (outlined above).

4. Informal Resolution Where Accused Student Acknowledges Responsibility

If during the course of the Informal Resolution, the accused student elects to admit responsibility for the alleged sexual misconduct, the Investigator will propose a resolution to the complaint and a sanction. If both the complainant and the accused student agree to the proposed sanction, the complaint is resolved without a hearing and without any further rights of appeal by either party. If either the complainant or the accused student objects to the proposed sanction, a hearing before the Sexual Misconduct Board will be convened for the sole purpose of determining a sanction, and in these cases, the decision of the board is subject to appeal pursuant to Article VI, B, 12, “Appeals,” above. For purposes of this sanction hearing, all of the other provisions of this policy relating to the imposition of a sanction for Sexual Misconduct will apply.

5. Election of Formal Resolution

The college or the complainant may, at any time prior to the conclusion of the informal resolution, elect to end such proceedings and initiate formal resolution instead. In such cases, statements or disclosures made by the parties in the course of the informal resolution may be considered in the subsequent formal resolution.

6. Privacy of Informal Resolution

In order to promote honest, direct, communication, information disclosed during informal resolution must remain private while the informal resolution is pending, except where disclosure may be required by law or authorized in connection with duties on behalf of the College.

D. Complainant Does Not Wish to Pursue Resolution or Requests Confidentiality

If the Complainant does not wish to pursue formal or informal resolution and/or requests that his or her report remain confidential, the Dean of Students or designee will inform the Com-
plainant that the College's ability to respond may be limited. The Dean or designee may conduct a preliminary investigation into the alleged sexual misconduct and may weigh the complainant's request against the following factors:

The seriousness of the alleged sexual misconduct,

Whether there have been other complainants of sexual misconduct against the same accused student, and

The accused student's right to receive information about the allegations, including the name of the complainant.

The Dean or designee will inform the Complainant if the College cannot ensure confidentiality. Even if the College cannot take disciplinary action against the accused student because the Complainant insists on confidentiality or that the complaint not be resolved, the College reserves the authority to undertake an appropriate inquiry, issue a "no contact" order, and/or take other reasonably necessary measures, including the Immediate Actions described in VI. E, below, to promote a safe learning environment for the complainant and/or the entire College community.

E. Immediate Actions (Interim Measures)

The Dean of Students Office and Campus Security may take immediate interim actions to protect the safety of the college community, to enable students with complaints and witnesses to continue studies, and to ensure the integrity of an investigation. These actions may include interim suspension of the accused student or no-contact notices between the individuals involved. The Dean of Students Office and Campus Security may also take additional actions, as appropriate, including but not limited to:

- Modifying class or work schedules, or housing arrangements
- Addressing other academic concerns (e.g., absences, assignments, grades, leaves of absence, withdrawal)
- Safety planning

- Education/training

VII. Resources and Services for Students

There are campus and community services available to students regardless of whether or not a student chooses to report a violation of this Policy to the College or local law enforcement. The College strongly encourages students to seek assistance to care for themselves emotionally and physically through confidential crisis intervention, health care, and counseling. As students tend to their health, they should keep in mind that medical examinations are time-sensitive, and are critical in preserving evidence of sexual assault so that options can be considered at a later time.

A. Confidential Advocacy and Support

Riverview Center (Cedar Rapids)

Riverview Center provides trained advocates to assist victims of sexual assault. Advocates can assist students with medical and legal advocacy, counseling, and case management. Advocates can speak with students confidentially as they consider their options. Any communication with a Riverview Center advocate is legally protected under Iowa Code Section 915.20, which allows for confidential communications that cannot be disclosed without the student’s permission.

50 2nd Ave Bridge
Cedar Rapids, IA 52401
319-540-0080
Website: www.riverviewcenter.org

Sexual Assault Hotline (24 hours a day) 888-557-0310

Waypoint Services (Cedar Rapids)

Waypoint provides shelter and support for women and families in crisis due to domestic violence or sexual assault.

318 5th Street SE
Cedar Rapids, IA 52401
319-365-1458

24 Hour Crisis & Support Line 800-208-0388 or 319-363-2093

RVAP (Iowa City and Surrounding Counties)

RVAP is a comprehensive sexual abuse response center based in Iowa City, Iowa. RVAP provides support, information and advocacy to members of the Iowa City community and citizens of the following areas:

- Cedar County
- Iowa County
- Johnson County
- Washington County

332 S. Linn Street, Suite 100
Iowa City, IA 52240
319 335-6000
800-228-1625
Website: www.rvap.org

Kirkwood Counseling Services

Students can meet with a counselor during normal business hours. Services are free and confidential.

Contact information:
www.kirkwood.edu/counseling
Cedar Rapids Campus
Cedar Rapids
108 Iowa Hall
One Stop Office
319-398-5540 319-887-3658

In an emergency after hours, students may call the 24-hour Foundation 2 hotline at 319-362-2174 or 800-332-4224.

Campus Health

Students can meet confidentially with a health care provider. Contact information:
www.kirkwood.edu/campushealth.
Cedar Rapids Campus
Iowa City
Cedar Rapids
Iowa Hall 132
Room 146
319-398-5588 319-887-3949
Open Tues/Wed
10 a.m.-2 p.m.

B. Additional Resources for Students

1. College Title IX Coordinator
The College has designated Jon Buse, Vice President for Student Services as the Title IX Coordinator to ensure Title IX compliance for the entire campus. Because sexual assault is considered to be a severe form of sexual harassment, an alleged victim may wish to file a sexual harassment complaint with the Title IX Coordinator. The Title IX Coordinator is responsible for ensuring a non-discriminatory campus environment that is free from harassment. Questions or concerns may be directed to (319) 398-4977 or 307 Mansfield Center, Kirkwood Community College.

Deputy Title IX Coordinators are:
- Bobbi Miller, Associate Dean of Students, 319-398-7798
- Melissa Jensen, Director Emergency Services and Campus Security, 319-398-5491
- Mike Roberts, Executive Director, Human Resources, 319-398-7797

2. Campus Security

Campus Security provides services 24 hours a day and can respond to reports of emergencies. Campus Security works closely with law enforcement and can assist students understanding their options for reporting incidents and assisting students in contacting local law enforcement to report an incident of sexual misconduct. Contacting Campus Security or law enforcement does not mean a student must pursue criminal charges. Campus Security can also assist students in safety planning and provides escorts to students while on campus.

319-398-1774
www.kirkwood.edu/security

3. Dean of Students Office

Staff can assist a student in filing a report or, if the student is not ready to file a report, the staff can work with him or her to address concerns over housing, class assignments or schedules, leaves of absence, withdrawal or other academic concerns. Staff can also assist the student in notifying Campus Security or local law enforcement, if requested by the student and provides referrals to students to resources such as counseling or a confidential advocate.

108 Iowa Hall
319-398-5540

C. External Resources

A Complainant may choose to file a complaint with the state and federal agencies listed below.

Office for Civil Rights (OCR) – Chicago Office
U.S. Department of Education
Citigroup Center
500 W. Madison Street, Suite 1475
Chicago, IL 60661
Phone: (312) 730-1560
Fax: (312) 730-1576
TDD: (877) 521-2172
Email: OCR.Chicago@ed.gov
Web: www.ed.gov/ocr

Equal Employment Opportunity Commission (EEOC)
Reuss Federal Plaza
310 W. Wisconsin Avenue, Suite 800
Milwaukee, WI 53203-2292
Phone: (800) 669-4000
Fax: (414) 297-4133
TTY: (800) 669-6820
Web: www.eeoc.gov/

Iowa Civil Rights Commission (ICRC)
Grimes State Office Building
400 E. 14th Street
Des Moines, IA 50319
Toll free: (800) 457-4416
Phone: (515) 281-4121
Fax: (515) 242-5840
TDD: (877) 521-2172
Web: https://icrc.iowa.gov/

VIII. Reporting Requirements

The College can take action only if the College is made aware of the behavior. Therefore, if a College employee becomes aware of a complaint or other violation of this Policy, the employee must bring the information to the Title IX Coordinator or a Deputy Title IX Coordinator so that concerns are heard and services can be offered to the affected students.

IX. Prevention, Training, and Policy Communication

The College is committed to education, communication and training in order to prevent sexual misconduct and to assure an appropriate response when incidents occur. The College will provide information on the following to students, faculty and staff:

- Preventing sexual misconduct
- Procedures for responding to incidents of sexual misconduct
- Resources available to students in cases of sexual misconduct
- Pertinent contents of relevant policy and law

The College will provide training on the above information on a website and will provide information about this Policy to all new students through orientation and to all registered students annually. This Policy is also available for distribution in printed form from the Dean of Students Office, Campus Security, and Human Resources and other College personnel involved in prevention and/or response activities.

The College will provide training on the above information to all College personnel involved in providing any part of the College’s response to reports of alleged sexual misconduct. All Sexual Misconduct Board members will receive annual training in their responsibilities. This training may include expertise drawn from campus and community resources, professional organizations, and other experts on the topic of sexual misconduct.

1 If the alleged perpetrator of sexual harassment or misconduct is a Kirkwood employee, complainants may choose to report the conduct to the Executive Director, Human Resources, instead of or in addition to, other individuals to whom reports may be made under this Policy.

2 "Course of Conduct" means repeatedly maintaining a visual or physical proximity to a person without legitimate purpose or repeatedly conveying oral or written threats, threats implied by conduct, or a combination thereof, directed at or toward a person.

3 Assault, under Iowa law, means:
   a. Any act which is intended to cause pain or injury to, or which is intend-
ed to result in physical contact which will be insulting or offensive to another, coupled with the apparent ability to execute the act; or

b. Any act which is intended to place another in fear of immediate physical contact which will be painful, injurious, insulting, or offensive, coupled with the apparent ability to execute the act; or

c. Intentionally pointing any firearm toward another, or displaying in a threatening manner any dangerous weapon toward another.

Student Complaint Policy

Kirkwood encourages students to share concerns about the quality of service provided by any support area or the quality of the learning experience provided by faculty. Kirkwood’s complaint policy is intended to provide a clear process for the college to address student and community concerns.

The vast majority of complaints can and should be handled by the department closest to the issue where the complaint originates. Given this goal, the expected process for student complaints is:

Discuss the complaint directly with the staff member or faculty involved. (In cases where this is not possible, such as alleged harassment or discrimination a student may move to the second step.)

Discuss complaint with the Director or Dean with supervisory responsibility over the area where the issue occurred.

In cases where a resolution is not reached at the department level, a student may submit a complaint in writing to the appropriate vice president; Bill Lamb (academic issues) or VP of Student Services (student service and miscellaneous issues) by completing the Student Complaint Form: https://www.kirkwood.edu/studentcomplaint.

This policy does not circumvent other existing review committees such as Special Appeals Committee, Academic Policies and Procedures Committee, or the Student Conduct Hearing board.

In the event that the complaint cannot be satisfied through one of these avenues, the Iowa Student College Aid Commission is authorized to receive and review complaints from students. You may also contact the Iowa College Student Aid Commission to register your complaint: https://www.iowacollegeaid.gov/content/constituent-request-review.

DEFINITIONS

1. The term "Accused Student" means any student accused of violating this Student Code.

2. The term "Board of Trustees" means the group of elected officials charged with oversight of the College.

3. The term "Business Days" means all days except Saturdays, Sundays, and College holidays. When counting days, the day a complaint is received at any point in the procedure shall be considered "day one".

4. The term "College" means Kirkwood Community College.

5. The term "College premises" includes all land, buildings, facilities, and other property in the possession of or owned, used, or controlled by the College (including adjacent streets and sidewalks.

6. The term "College official" includes any person employed by the College or any person performing assigned administrative or professional responsibilities on behalf of the College.

7. The term "Complainant" means any person who submits a charge alleging that a student violated this Student Code. When a student believes that s/he has been a victim of another student’s misconduct, the student who believes s/he has been a victim will have the same rights under this Student Code as are provided to the Complainant, even if another member of the College community submitted the charge itself.

8. The term "faculty member" means any person hired by the College to conduct classroom or teaching activities or who is otherwise considered by the College to be a member of its faculty.

9. The term "member of the College community" includes any person who is a student, faculty member, College official or any other person employed by the College. A person's status in a particular situation will be determined by the Dean of Students or designee.

10. The term "staff member" means any person employed by the College who is not a faculty member or student employee.
11. The term "student organization" means any number of persons who have complied with the formal requirements for College recognition as a club or organization.

12. The term "policy" means the written regulations of the College as found in, but not limited to, the student conduct code, student handbook, college catalog, and college website.

13. The term "student" includes all persons taking courses at Kirkwood Community College, either full-time or part-time, pursuing degree or non-degree programs including continuing education and distance courses. Persons who withdraw after allegedly violating the Student Code, who are not officially enrolled for a particular term but who have a continuing relationship with the College or who have been notified of their acceptance for admission are considered "students," although not enrolled in this institution.

14. The term "Student Conduct Administrator" means a College official authorized by the Dean of Students to determine whether a student has violated the student conduct code and to impose sanctions.

15. The term "Student Conduct Board" means any person or persons selected by the Dean of Students, including but not limited to members of the Student Conduct Committee, to determine whether a student has violated the Student Conduct Code and to recommend sanctions that may be imposed when a rules violation has been committed.

16. The term "Student Conduct Board Chairperson" means an individual selected by the Dean of Students or designee to facilitate a Student Conduct Board.

17. The term "Student Conduct Committee" means the College committee appointed by the Vice President for Student Services to serve as participants on the Student Conduct Committee.

STUDENT CODE AUTHORITY

1. The Dean of Students will determine the composition of Student Conduct Boards and will determine which Student Conduct Board or Student Conduct Administrator will be authorized to hear each matter.

2. The Dean of Students will develop policies for the administration of the student conduct system and procedural rules for the administration of Student Conduct Board Hearings that are not inconsistent with provisions of the Student Code.

3. Decisions made by a Student Conduct Board and/or Student Conduct Administrator are final, pending the normal appeal process.

PROHIBITED CONDUCT

A. Jurisdiction of the Student Conduct Code

The Student Conduct Code will apply to conduct that occurs on College premises, at College-sponsored activities, and off-campus conduct, including, but not limited to, activities on College partners' premises, that adversely affect the College community and/or the pursuit of its objectives. Each student will be responsible for his/her conduct from the time of application for admission through the actual awarding of a degree, even though conduct may occur before classes begin or after classes end, as well as during the academic year and during periods between terms of actual enrollment (and even after their conduct is not discovered until after a degree is awarded). The Student Conduct Code applies to a student's conduct even if the student withdraws from school while a disciplinary matter is pending.

B. Conduct—Rules and Regulations

Any student found to have committed or to have attempted to commit the following offenses is subject to the full range of disciplinary sanctions outlined in Article IV including warning, probation, suspension, or expulsion:

1. Acts of dishonesty, including but not limited to the following:
   a. Furnishing false information to any College official, faculty member, or office.
   b. Forgery, alteration, or misuse of any College document, record, or instrument of identification.

2. Disruption or obstruction of teaching, research, administration, disciplinary proceedings, other College activities, including its public service functions on or off campus, or of other authorized non-College activities when the conduct occurs on College premises.

3. Physical abuse, verbal abuse, threats, intimidation, harassment, coercion, and/or other conduct which threatens or endangers the health or safety of any person.

4. Violation of the Sexual Misconduct Involving Students policy, which prohibits sexual misconduct in any form and which includes any unwelcome behavior of a sexual nature that is committed without consent, by force, intimidation, coercion, or manipulation.

5. Attempted or actual theft of and/or damage to property of the College or property of a member of the College community or other personal or public property, on or off campus.

6. Hazing, defined as an act which, intentionally or recklessly, endangers the physical health or safety of a student, for the purpose of initiation, admission into, affiliation with, or as a condition for continued membership in, any organization operating in connection to the college.

7. Unauthorized possession, duplication or use of keys to any College premises or unauthorized entry to or use of College premises.

8. Violation of any College policy, rule, or regulation published in hard copy or available electronically on the College website.

9. Violation of any federal, state or local law.

10. Manufacturing, selling, distribution, use, or possession of marijuana, heroin, narcotics, or other controlled substances except as expressly permitted by law or possession of a device (drug paraphernalia) used to ingest or inhale an illegal drug or narcotic.

11. Manufacturing, selling, distribution, use, or possession of alcoholic beverages (except as expressly permitted by College regulations), or public intoxication. Alcoholic beverages may not, in
any circumstance, be used by, pos-
seized by, or distributed to any person
under twenty-one (21) years of age.

12. Participating in an on-campus or
off-campus demonstration, riot or activ-
ity that disrupts the normal operations
of the College and/or infringes on the
rights of other members of the College
community; leading or inciting others to
disrupt scheduled and/or normal activi-
ties within any campus building or area.

13. Obstruction of the free flow of pe-
destrian or vehicular traffic on College
premises or at College sponsored or
supervised functions.

14. Conduct that is disorderly, lewd, or
indecent; breach of peace; or aiding,
abetting, or procuring another person to
breach the peace on College prem-
ises or at functions sponsored by, or
participated in by, the College or mem-
bers of the College community.

15. Any unauthorized use of electronic
or other devices to make an audio or
video record of any person while on
College premises without his/her prior
knowledge, or without his/her effective
consent when such a recording is likely
to cause injury or distress. This in-
cludes, but is not limited to, surrepti-
tiously taking pictures of another per-
son in a gym, locker room, or restroom.

16. Theft or other abuse of computer
facilities and resources, including but
not limited to:

a. Unauthorized entry into a file, to
use, read, or change the con-
tents, or for any other purpose.

b. Unauthorized transfer of a file.

c. Use of another individual’s iden-
tification and/or password.

d. Use of computing facilities and
resources to interfere with the
work of another student, fac-
culty member or College official.

e. Use of computing facilities and
resources to send obscene or
abusive messages.

f. Use of computing facilities and
resources to interfere with
normal operation of the Col-
lege computing system.

g. Use of computing facilities and
resources in violation of copy-
right laws.

h. Any violation of College policies
pertaining to use of infor-
mation technology, including
computer use policies.

17. Abuse of the Student Conduct
Code, including but not limited to:

a. Failure to obey the notice from a
Student Conduct Board or Col-
lege official to appear for a
meeting or hearing as part of
the Student Conduct System.

b. Falsification, distortion, or mis-
representation of information
before a Student Conduct
Board.

c. Disruption or interference with
the orderly conduct of a Stu-
dent Conduct Board proceed-
ing.

d. Institution of a Student Conduct
Code proceeding in bad faith
(e.g. filing a false complaint).

e. Attempting to discourage an in-
dividual’s proper participating
in, or use of, the student con-
duct system.

f. Attempting to influence the im-
partiality of a member of a
Student Conduct Board prior
to, and/or during the course of,
the Student Conduct Board
proceeding.

g. Harassment (verbal or physical)
and/or intimidation of a victim
or other person who files a
student conduct complaint or
any participant(s) of a conduct
proceeding, including but not
limited to, their family mem-
bers, friends, or acquaintanc-
es, witnesses, panel members,
or advisors, prior to, during,
and/or after a student conduct
proceeding.

h. Retaliation against a victim or
other person who files a stu-
dent conduct complaint or any
participant(s) of a conduct
proceeding, including but not
limited to, their family mem-
bers, friends, or acquaintanc-
es, witnesses, Board members,
or advisors, prior to, during,
and/or after a student conduct
proceeding. This includes any
form of intimidation, threats,
harassment (verbal or physi-
cal) or knowingly filing a false
complaint.

i. Failure to comply with the sanc-
tion(s) imposed under the
Student Conduct Code.

j. Influencing or attempting to in-
fluence another person to
commit an abuse of the stu-
dent conduct code system.

18. Intentionally sounding a false alarm
to tamper with fire safety equip-
ment.

19. Use or possession on the campus
or at or during any College-authorized
function or event of firearms, ammuni-
tion, or other dangerous weapons, sub-
stances, or materials, except as ex-
pressly authorized by the College, or of
bombs, explosives, or explosive or in-
cendiary devices prohibited by law or
any other violation of the college
weapons policy.

20. Undue or willful neglect to meet
financial obligations to the College
when properly notified by the College.

21. Failure to comply with directions
of College officials or law enforce-
ment officers acting in performance of
their duties and/or failure to identify oneself
to these persons when requested to do
so.

22. Misuse of college identification –
Transferring, lending, borrowing, or al-
tering a college identification.

23. Violation of the Student Conduct
Code while on disciplinary probation, or
violation of the terms of one’s proba-
tion.

C. Violation of Law and College Disci-
pline

1. College conduct proceedings are
separate from criminal or civil litigation.
Formal rules of process, procedure,
and/or technical rules of evidence,
such as are applied in criminal or civil
court, are not used in student conduct
code proceedings.

2. College disciplinary proceedings
may be instituted against a student charged
with conduct that potentially violates
both the criminal law and this Student
Code (that is, if both possible violations
result from the same factual situation)
without regard to the pendency of civil
or criminal litigation in court or criminal arrest and prosecution. Proceedings under this Student Code may be carried out prior to, simultaneously with, or following civil or criminal proceedings off campus at the discretion of the Dean of Students or designee. Determinations made or sanctions imposed under this Student Code will not be subject to change because criminal charges arising out of the same facts giving rise to violation of college rules were dismissed, reduced, or resolved in favor of or against the criminal law defendant.

3. When a student is charged by federal, state, or local authorities with a violation of law, the College will not request or agree to special consideration for that individual because of his or her status as a student. If the alleged offense is also being processed under the Student Code, the College may advise off-campus authorities of the existence of the Student Code and of how such matters are typically handled within the college community. The College will attempt to cooperate with law enforcement and other agencies in the enforcement of criminal law on campus and in the conditions imposed by criminal courts for the rehabilitation of student violators (provided that the conditions do not conflict with campus rules or sanctions). Individual students and other members of the college community, acting in their personal capacities, remain free to interact with governmental representatives as they deem appropriate.

ARTICLE IV: STUDENT CONDUCT CODE PROCEDURES

A. Charges and Student Conduct Hearings

1. Any person may file charges against a student for violations of the Student Conduct Code. A charge should be prepared in writing and directed to the Dean of Students or designee. Any charge should be submitted as soon as possible after the event takes place, preferably within one calendar year. With respect to any complaint that is 1) by a person who is not a member of the college community, and 2) relating to non-college conduct, the College reserves the right to determine, in its sole discretion, whether the conduct described in the complaint constitutes a sufficient risk to the college community to warrant processing the complaint.

2. The Dean of Students or designee may conduct an investigation to determine if the charges have merit. If the accused student elects to acknowledge his or her actions and take responsibility for the alleged misconduct, the Dean of Students will propose a resolution to the complaint and a sanction. If the accused student agrees to the proposed sanction, the complaint is resolved without a hearing and without any further rights of appeal. If the accused student objects to the proposed sanction, a hearing will be convened for the sole purpose of determining a sanction, and in these cases, the decision is subject to appeal pursuant to Article IV, D.

If the charges are not admitted to and/or cannot be disposed of by mutual consent, the Dean of Students or designee will determine if the matter will be resolved through an administrative hearing or by a Student Conduct Board. Complaints that may result in a sanction of suspension or expulsion will be disposed of through a Student Conduct Board. All other cases will be disposed of through an administrative hearing conducted by the Dean of Students or Student Conduct Administrator.

3. Complaints alleging conduct that includes sexual harassment and other forms of sexual misconduct will be handled according to the rules and procedures described in the Sexual Misconduct Involving Students policy and the applicable sections of this policy.

4. All charges will be presented to the accused student in written form. A time will be set for an administrative hearing or Student Conduct Board hearing that ensures a prompt and equitable resolution, not less than five (5) nor more than thirty (30) business days after the accused student has been notified. Maximum time limits for scheduling of an administrative hearing or Student Conduct Board hearing may be extended at the discretion of the Dean of Students. Written notification to the Accused Student will include:

a) the alleged conduct violation;
b) a summary of the specific allegations;
c) the time, date, and place of the hearing;
d) the name(s) of the Student Conduct Administrator or Student Conduct Board members, who will hear the case;
e) the potential disciplinary sanctions; and
f) the related procedures outlined in Article IV.

Like notice will also be provided concurrently to the Complainant.

5. Formal rules of process, procedure, and/or technical rules of evidence, such as are applied in criminal or civil court, are not used in Student Code proceedings.

6. The determination of whether or not a violation of the Student Conduct Code occurred will be made on the basis of whether it is more likely than not that the Accused Student violated the Student Conduct Code. This is more formally referred to as the, "Preponderance of the Evidence Standard."

7. The Dean of Students or designee will notify the Accused Student and the Complainant of the outcome of the hearing in writing within ten (10) business days of completion of the hearing.

8. If an Accused Student, with notice, does not appear for the hearing, the information in support of the charges will be presented and considered even if the accused student is not present.

9. A conduct violation that may not result in the sanction of suspension or expulsion will be resolved through an administrative hearing with the Dean of Students or Student Conduct Administrator. During the administrative hearing the accused student will have an opportunity to respond to the charges and to present evidence or witnesses contesting the charges. The Dean of Students or Student Conduct Administrator will determine if a violation occurred and will issue appropriate sanctions.
10. An alleged violation of the Student Conduct Code in which the accused student contests responsibility and that may result in the sanction of suspension or expulsion will be resolved through a Student Conduct Board Hearing according to the following guidelines:

   a. Hearings will be conducted in private.

   b. The Student Conduct Committee chairperson and two members of the Student Conduct Committee will be appointed by the Dean of Students to serve on the Student Conduct Board.

   c. The Complainant, Accused Student and their advisors, if any, will be allowed to attend the entire portion of the Student Conduct Board Hearing at which information is received (excluding deliberations). Admission of any other person to the Student Conduct Board Hearing will be at the discretion of the chairperson of the Student Conduct Board.

   d. In hearings involving more than one Accused Student, the Dean of Students, in his or her discretion, may permit the Student Conduct Board Hearing(s) concerning each student to be conducted either separately or jointly.

   e. The Complainant and the Accused Student have the right to challenge any member of the Student Conduct Board on grounds of prejudice. This challenge, with the reasons for the challenge, must be submitted in writing to the Dean of Students at least two (2) business days prior to the hearing. The Dean of Students or designee will determine if the member will sit on that case. If the challenge is upheld, the Dean of Students or designee will select another Student Conduct Committee member for the Student Conduct Board.

   f. The Complainant and the Accused Student have the right to be assisted by an advisor they choose, at their own expense. The Complainant and/or the Accused Student is responsible for presenting his or her own information, and therefore, advisors are not permitted to speak or to participate directly in any Student Conduct Board Hearing before a Student Conduct Board. The participants should select as an advisor a person whose schedule allows attendance at the scheduled date and time for the Student Conduct Board Hearing because delays will not normally be allowed due to the scheduling conflicts of an advisor.

   g. The Complainant, the Accused Student, Student Conduct Administrator, and the Student Conduct Board may arrange for witnesses to present pertinent information to the Student Conduct Board. The College will try to arrange the attendance of possible witnesses who are members of the college community, if reasonably possible, and who are identified by the Complainant and/or Accused Student at least two (2) weekdays prior to the Student Conduct Board Hearing. Witnesses will provide information to and answer questions from the Student Conduct Board.

   h. Questions may be suggested by the Accused Student and/or Complainant to be answered by each other or by other witnesses. This will be conducted by the Student Conduct Board with such questions directed to the chairperson, rather than to the witness directly. This method is used to preserve the educational tone of the hearing and to avoid creation of an adversarial environment. Questions of whether potential information will be received will be resolved in the discretion of the chairperson of the Student Conduct Board.

   i. Pertinent records, exhibits, and written statements (including Student Impact Statements) may be accepted as information for consideration by a Student Conduct Board at the discretion of the chairperson.

   j. All procedural questions are subject to the final decision of the chairperson of the Student Conduct Board.

   k. After the portion of the Student Conduct Board Hearing concludes in which all pertinent information has been received, the Student Conduct Board will determine by majority vote whether the Accused Student has violated each section of the Student Code which the student is charged with violating.

   l. There will be a single verbatim record, such as a tape recording, of all Student Conduct Hearings before a Student Conduct Board (not including deliberations). Deliberations will not be recorded. The record will be the property of the college.

   m. The Student Conduct Board may accommodate concerns for the personal safety, well-being, and/or fears of confrontation of the Complainant, Accused Student, and/or other witness during the hearing by providing separate facilities, by using a visual screen, and/or by permitting participation by telephone, videophone, closed circuit television, video conferencing, videotape, audio tape, written statement, or other means, where and as determined in the sole judgment of the Dean of Students or designee to be appropriate.

B. Sanctions

1. The following sanctions may be imposed upon any student found to have violated the Student Conduct Code:

   a. Warning—a notice in writing to the student that the student is violating or has violated institutional regulations.

   b. Probation—a written reprimand for violation of specified regulations. Probation is for a des-
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Ignored period of time and includes the probability of more severe disciplinary sanctions if the student is found to violate any institutional regulation(s) during the probationary period.

c. Loss of Privileges—denial of specified privileges for a designated period of time.

d. Fines—previously established and published fines may be imposed.

e. Restitution—compensation for loss, damage, or injury. This may take the form of appropriate service and/or monetary or material replacement.

f. Discretionary Sanctions—work assignments, essays, service to the college, or other related discretionary assignments.

g. Deferred Suspension – A serious and final notification that any violation of College policy may result in the immediate suspension of the student from the College for a specified period of time after which the student would be eligible to return. Conditions for readmission may be specified prior to the student being eligible to return.

h. Suspension—separation of the student from the College for a definite period of time, after which the student is eligible to return. Conditions for readmission may be specified.

i. Expulsion—permanent separation of the student from the College.

j. Revocation of Admission and/or Degree—admission to or a degree awarded from the College may be revoked for fraud, misrepresentation, or other violation of College standards in obtaining the degree, or for other serious violations committed by a student prior to graduation.

k. Withholding Degree—The College may withhold awarding a degree otherwise earned until the completion of the process set forth in this Student Conduct Code, including the completion of all sanctions imposed, if any.

I. Delayed Registration—A student may be required to delay his/her course registration until a complainant or any other student(s) involved in a conduct matter has completed course registration. Delayed registration is for a specified number of semesters or may be required until the complainant or other involved student(s) graduate.

2. More than one of the sanctions listed above may be imposed for any single violation.

3. (a) Other than college expulsion or revocation or withholding of a degree, disciplinary sanctions will not be made part of the student's permanent academic record but will become part of the student's disciplinary record.

(b) In situations involving both an Accused Student(s) (or group or organization) and a student(s) claiming to be the victim of another student's conduct, the records of the process and of the sanctions imposed, if any, will be considered to be the education records of both the Accused Student(s) and the student(s) claiming to be the victim because the educational career and chances of success in the academic community of each may be impacted.

4. The following sanctions may be imposed upon groups or organizations:

   a. Those sanctions listed above in article IV(B)(1)(a)–(k).

   b. Loss of selected rights and privileges for a specified period of time.

   c. Deactivation-loss of all privileges, including college recognition, for a specified period of time.

5. In each case in which a Student Conduct Board or Student Conduct Administrator determines that a student and/or group or organization has violated the Student Conduct Code, the sanction(s) will be determined and imposed by the Dean of Students or Student Conduct Administrator with the exception of cases involving sexual misconduct, in which case the Sexual Misconduct Board or chair will determine the sanctions as prescribed in the Sexual Misconduct Involving Students policy.

C. Interim Suspension

In certain circumstances, the Dean of Students or designee may impose an interim suspension prior to the disposition of a student conduct hearing.

1. Interim suspension may be imposed only:

   a. to ensure the safety and well-being of members of the college community or preservation of College property;

   b. to ensure the student's own physical or emotional safety and well-being; or

   c. if the student poses an ongoing threat of disruption of, or interference with, the normal operations of the College.

2. During the interim suspension, a student will be denied access to the campus (including classes) and/or all other College activities or privileges for which the student might otherwise be eligible, as the Dean of Students or designee may determine to be appropriate.

3. The interim suspension does not replace the regular process, which will proceed on the normal schedule, up to and through an Administrative or Student Conduct Board proceeding, if required. However, the student should be notified in writing of this action and the reasons for the suspension. The notice should include the time, date, and place of a subsequent hearing at which the student may show cause why his or her continued presence on the campus does not constitute a threat and at which they may contest whether a campus rule was violated.

D. Appeals

1. The decision of a Student Conduct Administrator or Student Conduct Board including sanctions imposed may be appealed by the Accused Student(s), the Complainant(s) or both to the Vice President for Student Services or designee within five (5) business days of
the decision. Such appeals will be in writing and will be delivered to the Dean of Students or his or her designee. The Vice President or designee will determine if the decision and/or sanctions imposed will be stayed pending the outcome of the appellate decision.

2. Except as required to explain the basis of new information, an appeal will be limited to a review of the verbatim record of the student conduct hearing and supporting documents for one or more of the following purposes:

   a. To determine whether the Student Conduct Board Hearing was conducted fairly in light of the charges and information presented, and in conformity with prescribed procedures. Deviations from designated procedures will not be a basis for sustaining an appeal unless significant prejudice results.

   b. To determine whether the sanction(s) imposed were appropriate for the violation of the Student Conduct Code which the student was found to have committed.

   c. To consider new information, sufficient to alter a decision or other relevant facts not brought out in the original hearing, because such information and/or facts were not known to the person appealing at the time of the original hearing.

3. The Vice President for Student Services may affirm, reverse, or modify the decision regarding the violation and/or sanctions imposed. The appeal decision of the Vice-President is the final decision of the college, and no further appeals are permitted under this policy.

4. All parties will be informed of whether the grounds for an appeal are accepted and the results of the appeal decision.

**ARTICLE V: COMPOSITION OF STUDENT CONDUCT COMMITTEE**

The Student Conduct Committee is appointed by the Vice President for Student Services and is composed of two (2) staff members nominated by the Dean of Students, two (2) faculty members nominated by the Vice President for Academic Affairs, and one (1) faculty/staff chairperson appointed by the Vice President for Student Services. The Dean of Students or designee will preside over all meetings of the Student Conduct Committee.

**ARTICLE VI: TRAINING**

The Dean of Students or designee will conduct annual training with persons involved in the administration of the student conduct system. This includes, but is not limited to, the Student Conduct Committee members and other Student Conduct Administrators. Training will be conducted in a manner that is consistent with provisions of the student conduct code.

**ARTICLE VI: INTERPRETATION AND REVISION**

A. Any question of interpretation or application of the Student Conduct Code will be referred to the Dean of Students or designee for final determination.

B. The Student Conduct Code will be reviewed every three years under the direction of the Dean of Students.

**Student Records**

**Definitions**

Attendance at the College includes, but is not limited to, attendance in person or by correspondence, videoconference, satellite, Internet, or other electronic information and telecommunications technologies, and the period during which a person is working under a work-study program.

Directory Information is information concerning a student that may be released publicly. The College designates the following items as directory information:

- Student’s name
- Degrees, diplomas, certificates earned and awards (e.g., Dean’s List)
- Dates of attendance (e.g., Fall 2010, Fall 2010-Spring 2012)
- Enrollment status (full-time, part-time, not enrolled)
- Participation in officially recognized activities (e.g., SIFE, DECA)
- Participation in officially recognized sports
- Height and weight of members of athletic teams
- Major (for commencement program only)
- Hometown (for commencement program only)

The College may disclose any of these items of directory information on any student, currently enrolled or not. Students have the right to request that no directory information be made public by completing a Directory Information Block Request form and filing it with the One Stop office. Such requests for non-disclosure will be honored by the College for only one academic year; therefore, requests to withhold Directory Information must be filed annually in the One Stop office.

**Disclosure** means permitting access, release, transfer or other communication of personally identifiable information contained in education records by any means to any party.

**Education Records** include any information or data recorded in any medium, including but not limited to electronic, print, handwriting, film, microfiche and e-mail, which is directly related to a student and maintained by the College or by a person acting for the College. The term “education records” does not include the following:

- Records that are kept in the sole possession of the maker of the records, are used only as a personal memory aid, and are not accessible or revealed to any other person except a temporary substitute for the maker of the record.
- Records created and maintained solely for law enforcement purposes by Campus Security.
- Employment records made and maintained in the normal course of business and related exclusively to the individual in that individual’s capacity as an employee and are not available for use for any other purpose. This exception does not include records relating to a student...
in attendance at the College who is employed as a result of his/her status as a student (e.g., work study); such records are protected as "education records".

- Records created or maintained by a physician, psychiatrist, psychologist, or other recognized professional or paraprofessional acting in his/her professional capacity and used only in the treatment of the student and not available to individuals other than those providing the treatment.

- Alumni records created or received by the College after an individual is no longer a student in attendance and that are not directly related to the individual’s attendance as a student (e.g., information collected by the College pertaining to alumni accomplishments).

- Grades on peer-graded papers before they are collected and recorded by a teacher.

- Admission records for an individual who does not enroll at the College.

Legitimate Educational Interests are the demonstrated "need to know" by those school officials who act in the student's educational interest. A school official has a legitimate educational interest if the official needs to review an educational record in order to fulfill his/her professional responsibility.

Parent means a parent of a student and includes a natural parent (custodial and/or non-custodial), a guardian, or an individual acting as a parent in the absence of a parent or a guardian. This definition includes adoptive and custodial stepparents. At the post-secondary level, FERPA rights have transferred to the student and parents have no rights under FERPA to inspect their student’s education records, which will not be released to parents except in certain circumstances in which the law allows a student’s education records to be disclosed to a parent without the prior consent of the student.

School Officials demonstrating a legitimate educational interest within the limitations of their "need to know" may have access to student education records protected by FERPA. A school official is a person employed by the College as a faculty, administrative, clerical, medical, legal or professional employee or other person who manages student education records including the campus nurse, student employee or volunteer; a member of the Board of Trustees; a person, company or organization with whom the College has contracted or otherwise arranged to provide services that the College itself would otherwise have to provide, such as an attorney, auditor, collection agent, security service or other service provider; a member of an external accreditation committee; an employee at a high school where a Kirkwood student is also currently enrolled; an employee of a state/federal approving agency.

Student means any individual who is officially registered and in attendance, or who has been officially registered and in attendance, at the College, and about whom the College maintains education records. A person who has applied for admission to but has never been in attendance at the College is not a student. The right to inspect education records resides solely with the student. Parents have no rights under FERPA to their student’s post-secondary education records.

Maintenance of Student Records

All College personnel, including student employees, involved in the handling and maintenance of education records protected by FERPA shall be instructed concerning the confidential nature of such information and their responsibilities regarding it, pursuant to this policy and the provisions of FERPA. This instruction will be a part of each employee’s orientation procedure, including student employees, and will be finalized by their signing the Code of Responsibility form. Annual FERPA refresher instruction will be required for continuation of access to student education records.

Annual Notice to Students of FERPA Rights

The One Stop office gives public notice of student rights under FERPA annually by email and via the College Web site.

Disclosure of Student Records

Directory Information

The College may disclose directory information on any student, currently enrolled or not, without prior written consent. Students have the right to request directory information not be made public by completing a Directory Information Block Request form and filing it with the OneStop office. Such requests for non-disclosure will be honored by the College for only one academic year; therefore, requests to withhold Directory Information must be filed annually in the One Stop office.

Education Records with Consent of the Student

The College will obtain a signed and dated written consent from a student before it discloses personally identifiable information, other than directory information, from a student’s education records, except as authorized by law, to any individual, agency or organization. This consent will specify the records to be disclosed, the purpose of the disclosure, and the parties to whom the disclosure may be made.

Education Records without Prior Consent of the Student as Authorized by Law

All education records are maintained in confidence. However, under certain circumstances in accordance with the Act, they may be disclosed without the prior consent of the student. The agencies, institutions, entities and individuals who may receive or inspect these records are listed below.

Parties to whom personally identifiable information is released, as a general rule, are not permitted to disclose the information to others without the written consent of the student, nor misuse personally identifiable information, and must destroy these documents and/or electronic records when no longer needed.

The College will maintain a record of the requests for and disclosure of personally identifiable information from a student’s education records for the situations outlined below except for paragraphs 1, 9 and 12 below, those made by students for their own educa-
tion records, requests involving written consent from the student, disclosures to school officials under the conditions of their legitimate educational interest, a party seeking directory information, or a federal grand jury or law enforcement subpoena, or court order, that prohibits disclosure.

The record will include the name of the individual or agency requesting information, the reason for the request including the legitimate educational interest the party had in obtaining the information, the date of the request, and the disposition of the request and will be made part of the student’s permanent record.

Kirkwood Community College school officials or their agents who have a legitimate educational interest in student records and data, and who require personally identifiable information to complete their assigned duties, may review such material.

Officials of another institution where the student seeks to enroll or is enrolled, or where the student receives services from the other institution in connection with the student’s participation in internships, affiliations or other programs related to the student’s courses or program at the College.

Authorized representatives of institutions from which the student has received financial aid or with which a student has applied for financial aid are entitled to access if needed to determine eligibility for, the amount of, or the conditions for, or to enforce terms or the conditions of such aid. “Financial aid” as used in this paragraph means a payment of funds provided to a student that is conditioned on his/her attendance at the College.

Authorized representatives of the federal, state and local educational authorities may review personally identifiable information from student records in connection with an audit or evaluation of federal or state supported education programs, or for the enforcement of or compliance with federal legal requirements related to those programs.

Federal, state, local and independent organizations engaged in studies for, or on behalf of, the college to develop, validate, or administer student aid programs, administer predictive tests, or improve education. Information is disclosed, however, only when these institutions confirm that the study will be conducted in a manner that does not permit personal identification of students by individuals other than representatives of the organization and the information will be destroyed when no longer needed for the purposes for which the study was conducted.

Accrediting organizations in order to conduct accrediting functions.

Information will be provided pursuant to a lawful subpoena or court order. Before complying with a subpoena, the College will attempt to notify the student involved that a subpoena has been issued, unless the subpoena prohibits such notification. The notification will be sent to the student’s last known address and to counsel for the student, if known.

In the case of an emergency, the College may disclose personally identifiable information to the appropriate parties if knowledge of the information is deemed by the College to be necessary to protect the health or safety of the student or other individuals based on the following considerations: (1) the nature of the emergency, (2) the need for information, (3) the relative assistance the parties can offer, (4) and the amount of time available. The Dean of Students will be the responsible officer in emergency cases, and if unavailable, another appropriate administrator.

To an alleged victim of a crime of violence or non-forcible sex offense of the final result of any institutional disciplinary proceeding against the alleged perpetrator of that crime with respect to that crime, regardless of the outcome of the proceeding. The final results of any disciplinary proceeding shall include only the name of the student, the violation committed, and any sanction imposed against the student.

To a court of law those education records that are necessary to defend the College against a student who initiates legal action against it, or those education records that are relevant to the College’s case as a plaintiff in a legal action against a student.

Information regarding disciplinary action taken against a student for conduct that posed a significant risk to the safety or well being of that student, other students, or other members of the College community may be released to school officials or to school officials at other institutions who have been determined to have a legitimate educational interest in the behavior of the student.

To the parent of a student who is under the age of 21 information about a violation of any federal, state or local law, or any rule or policy of the College, governing the use or possession of alcohol or a controlled substance if the College determines that the student has committed a disciplinary violation with respect to such use or possession.

Although students have the right to opt out of the release of directory information, they may not choose to be anonymous within the classroom setting, whether in a traditional or distance learning class, by opting out. Disclosure of name and email address, as required by the instructor and classroom setting, for purposes of conducting the class and class discussion or activities is permissible under FERPA.

The College may disclose to third-parties any student information that it has designated as directory information, provided that the student has not restricted such information from disclosure.

Under the Solomon Amendment, student military recruiting information (name, address, telephone number, age or year of birth, level of education [e.g., freshman, sophomore] and major of currently enrolled students) will be released to military recruiters unless students have previously requested that no directory information be disclosed to third parties under FERPA.

Access to Education Records by Students

The College will provide current and former students access to the student’s own education records, with the exception of those listed below, within 45
days of receipt of the student’s written request.

They are not entitled to the financial aid records of the student’s parents or guardian.

They must not be permitted to view their education records if they contain information about another student; in such cases, they will be permitted to access only that part of the record which pertains to the inquiring student.

The substantive judgment of a faculty member about a student’s work, expressed in grades and/or evaluations, is not within the purview of this right to challenge. The right to challenge grades does not apply under The Act unless the grade assigned was inappropriately recorded, in which case the record will be corrected.

Students have the right to challenge the content of their education records if they consider the information within to be inaccurate, misleading, or inappropriate. This process includes an opportunity for amendment of the records or insertion of written explanations by the student into such records.

Students challenging information in their records must submit, in writing, a request for a hearing to the College Registrar, listing the specific information in question and the reasons for the challenge. A hearing will be conducted by a College official who has no direct interest in the outcome of the hearing. The student shall be afforded a full and fair opportunity to present evidence relevant to the reasons for the challenge. The hearing officer will render a decision, in writing, noting the reason and summarizing all evidence presented within a reasonable timeframe after the challenge is filed.

Should the hearing be in favor of the student, the record shall be amended accordingly. Should the request be denied, the student may choose to place a statement with the record commenting on the accuracy of the information in the record and/or setting forth any basis for inaccuracy. When disclosed to an authorized party, the record will always include the student’s statement and notice of the board’s decision, as long as the student’s record is maintained by the College.

The student has the right to file a complaint with the U.S. Department of Education concerning alleged failures by the College to comply with the requirements of FERPA. The name and address of the Office that administers FERPA is:

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Ave., SW
Washington DC 20202-5901

Contact Information
Questions related to this policy should be directed to the Registrar at (319) 398-5476.

Additional FERPA information can be found at the Family Policy Compliance Office Website:

Tobacco Free - Smoke Free
Tobacco use, including cigarettes, cigars, pipes & smokeless tobacco is prohibited. The use of e-cigarettes is also prohibited. Smoking is defined as the burning or inhaling of tobacco or other matter that can be smoked or inhaled, or the inhaling of smoke or vapor from an electronic smoking device.

The use of tobacco products, which includes smokeless and smoking tobacco, is prohibited:

In all areas within Kirkwood Community College buildings.

On all property owned, leased, or occupied by Kirkwood Community College. In all vehicles owned, leased, or rented by the school.

This policy applies to all employees, students, partners and visitors.

Persons willfully refusing to comply will be considered in violation of Kirkwood Community College policy and subject to disciplinary actions.

All persons in non-compliance of the Smoke Free Air Act and Kirkwood’s policy will be considered in violation and subject to disciplinary action.

PROCEDURE:
1. No tobacco products shall be sold or distributed on Kirkwood Community College property.
2. Campus organizations are prohibited from accepting money or gifts from tobacco companies that promote use of their products.
3. Tobacco advertisements are prohibited in college-run publications and at any athletic or other campus events.
4. Signs stating that the entire campus is tobacco free are prominently posted at all campus and building entrances and other conspicuous places. All ash receptacles will be removed from the school grounds.
5. People who wish to consider employment at Kirkwood Community College will be notified of its tobacco free environment through information provided on the school’s website, job advertisements, and job applications.
6. Employees will be advised of the provisions of this policy during new hire orientation. Supervisors will be responsible for notifying their employees of the provisions of this policy and assisting with enforcement.
7. This policy will be communicated to the public through signs, announcements, newsletters, media events, advertisements, the school website, and job postings.
8. Employees may attend tobacco cessation counseling. Announcements regarding cessation counseling and any incentives offered by administration will be communicated through the Tempo e-newsletter and posted announce-
ments. The state and national tobacco quit lines will be promoted as well.

9. Employees or students smoking or using tobacco products on Kirkwood Community College property are in violation of the stated policy and subject to disciplinary action as outlined in the employee handbook or student handbook as applicable.

10. Employees and students will be educated on the tobacco policy and opportunities for cessation counseling throughout the disciplinary action process.

11. All Kirkwood Community College employees are authorized and encouraged to communicate and reinforce this policy with courtesy and diplomacy to any person whom they see violating the policy. Individuals who refuse to comply with the policy should then be reported to security for immediate follow-up action.

12. Students, partners and visitors will be notified of this policy prior to arrival whenever possible.

Traffic and Parking

Students may park in any of the non-designated parking lots. Disability (handicap) spaces are reserved for those vehicles that display valid state of Iowa handicap identification. Visitor spaces are for campus guests and should not be used by Kirkwood students, faculty, or staff. Areas marked Blue Permit are reserved for faculty and staff vehicles that display valid blue parking permits. Taking parts of two spaces, or parking on the lawn, sidewalks or roadways is not permitted.

Reckless driving and speeding are prohibited at all times. Kirkwood's traffic and parking rules are based upon Section 260C.14 of the Code of Iowa. As the college has campuses located in various cities and towns, the local laws and ordinances also apply. Traffic and parking rules will be enforced as shown in the violations chart.

<table>
<thead>
<tr>
<th>Violations Chart</th>
<th>Fee</th>
<th>Multiple Offenses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Speeding 1 - 10 MPH over</td>
<td>$25</td>
<td>2nd offense - $40 3rd offense - $60, notification to Dean of Students</td>
</tr>
<tr>
<td>Speeding 11 - 20 MPH over</td>
<td>$35</td>
<td>2nd offense - $50 3rd offense - $70, notification to Dean of Students</td>
</tr>
<tr>
<td>Speeding* 21 - 30 MPH over</td>
<td>$65</td>
<td>2nd offense - $80, notification to Dean of Students 3rd offense - $100, notification to Dean of Students</td>
</tr>
<tr>
<td>Speeding* 31 or more MPH over</td>
<td>$100</td>
<td>2nd offense - $125, notification to Dean of Students 3rd offense - $150, notification to Dean of Students</td>
</tr>
<tr>
<td>Failure to Stop at Stop Sign</td>
<td>$30</td>
<td>2nd offense - $45 3rd offense - $60, notification to Dean of Students</td>
</tr>
<tr>
<td>Reckless Driving*</td>
<td>$50</td>
<td>2nd offense - $75, notification to Dean of Students 3rd offense - $100, notification to Dean of Students</td>
</tr>
<tr>
<td>Operating While Intoxicated*</td>
<td>Campus Security will turn offender over to the Cedar Rapids or other appropriate police department</td>
<td></td>
</tr>
</tbody>
</table>

*NOTE: Reckless driving, excessive speed, and operating while intoxicated, endanger others and consequently are violations of the Student Code of Conduct. These violations could lead to additional sanctions. See the Student Handbook for additional information.

Parking in Disabilities Area without displaying State placard | $100 |
Parking in Visitor, Blue Permit, or other restricted area. | $10 | 2nd offense - $20 3rd offense - $30, notification to Dean of Students |
Parking on Grass or in Illegal location | $10 | 2nd offense - $20 3rd offense - $30, notification to Dean of Students |
Administrative fees for violations will be considered the same as any other debt owed to the college. If a ticket is received, students must do one of the following:

- Pay the fee at the Cashier’s office, second floor, Kirkwood Hall.
- Mail the fee to Kirkwood in the envelope provided.
- Submit an appeal form within 48 hours. Appeal forms may be obtained and completed at www.kirkwood.edu/security - Parking.

Weapons Policy

Weapons of any kind, whether carried open or concealed, shall not be allowed on any Kirkwood Community College property or at any Kirkwood sponsored event. This is regardless of the individual having a weapon permit issued by the State of Iowa or by any other state.

The term weapon includes, but is not limited to the following:

- pistol, revolver, or handgun
- shotguns or rifles
- any weapon designed or intended to propel a missile of any kind (includes air gun, paint ball, BB or pellet guns, potato guns or other homemade devices
- bow and arrows
- knives having a blade of 3" or more
- straight edge razor or razor blade
- brass knuckles, blackjacks, saps, or sap gloves
- bat, club or other bludgeon type weapon
- stun gun or taser
- mace or pepper spray
- also not permitted are potentially hazardous items such as ammunition, explosives, fireworks including firecrackers

Campus Security will be notified if an individual is suspected or found to have a weapon or hazardous item. The individual will be advised to remove the item(s) from campus. If the individual refuses, or if the item(s) is illegal, the police will be contacted. Kirkwood will pursue disciplinary, civil or criminal action as appropriate against anyone who violates this policy by engaging in violence, threats of violence, or intimidation. If a faculty, staff, or student is found to be in violation of this policy, they will be referred for possible disciplinary action.

Exemptions: This policy does not apply to law enforcement personnel or peace officers who are carrying the weapon in performance of their duties.

Transfer Credit Policies

Acceptance of Vocational-Technical Credit

Kirkwood accepts vocational-technical credits earned in courses that are part of Associate of Applied Science degree programs at Kirkwood or other Iowa community colleges. Such credits are herein referred to as technical credits.

A maximum of 16 hours of technical credits are acceptable toward Associate of Arts or Associate of Science degrees, but the credits may not be used to satisfy core or general education requirements.

Policy on Awarding A.A., A.S., A.A.S. Degree when Student has B.A., B.S. Degree or Higher

When a student has a previously earned B.A., B.S., or higher degree and subsequently earns enough credits for an Associate degree from Kirkwood, the college will not award a degree if it is in the same program or area as the higher-level degree. The college will award the A.A., A.S., A.S./C.O., or A.A.S. degree if the major or field of study is not related to the B.A., B.S., or higher degree.

Transfer of Credit from Other Institutions

When examining transcripts from other colleges, Kirkwood follows the recommendations contained in the current issue of the Transfer Credit Practices of Designated Educational Institutions, published by the American Association of Collegiate Registrars and Admission Officers. Kirkwood may accept the credit given to a student who has done successful work at another college provided our evaluation determines that the work was from a regionally accredited institution.

Grades of "F" (or any other failing grades) for transfer students will be included in the computation of cumulative and transfer grade point averages. They may be forgiven if they meet the criteria of the Forgiveness of Failing Grades policy and the student submits a request.

Grades corresponding to "D-" or better will be accepted for transfer into Arts and Sciences programs and will be accepted toward fulfilling general education requirements for Applied Science programs. Higher grades may be required for some program courses.

Academic and Enrollment Policies

Adds, Drops and Withdrawal of Registration

You may add a course at any time before it starts, subject to the course load conditions and tuition schedule.

You may drop individual courses prior to the last day to drop shown on EagleNet Search for Sections and available from the One Stop office. Classes
may be dropped at eglenet.kirkwood.edu. A grade of "W" will be assigned.

After the last day to drop a course, you must remain in the scheduled course. You will receive "F" grades if you stop attending classes without officially dropping them. Classes that have ended cannot be dropped.

Students who have not attended a course will be administratively withdrawn. Immediately following the course’s refund period, students who are reported as not attending a course will receive a "W" grade on their transcript and will be charged 50% of the value of the course.

The grades A, B, C, D and F are included in the computation of grade point average. Credit toward graduation is granted for A, B, C, D, P and T.

One of the requirements for receiving financial aid is that you attend the classes for which you are registered. We will disburse financial aid based on the number of credits you have been reported as attending. If you have late-start classes, some of your prorated awards will not be sent until you are attending those late start classes. Students who are enrolled less than full-time are considered part-time students. For part-time students, a lower cost of attendance will be used to determine eligibility for financial aid awards. If your attendance level changes up to the end of the second week of classes, this may change the amounts of your awards.

**Alternative Credit**

Alternative credit is defined as college credit earned outside of Kirkwood credit course completion, transfer course completion or credit by examination. Alternative credit requests cannot be made to replace a failing grade for a course previously attempted. The student will be assessed an administrative charge of $25 per application. If the application is approved and the outside work is not articulated Kirkwood Continuing Education coursework, a tuition charge will be assessed equal to one half the current tuition for the credit course on the application.

This policy does not exempt students from complying with all other Kirkwood graduation policies including residency and graduation policies.

A maximum of 18 credits may be awarded for alternative coursework and exam credit of any kind. A student must request alternative credit be awarded. The credit is not awarded automatically.

**To obtain credit for articulated Kirkwood Continuing Education coursework,** the student must consult with his/her advisor first. If the advisor recommends the student proceed, the student must submit the following:

1. Application for Alternative Credit form
2. Proof of articulated Kirkwood Continuing Education course completion

**To obtain credit for an industry recognized, third-party portable certificate, credential or licensure,** it must be valid at the time of application. The student must submit the following:

1. Application for Alternative Credit form
2. Copy of valid certificate, credential or license

**To obtain credit for work experience or experiential learning,** the student must submit the following:

1. Application for Alternative Credit form
2. Portfolio to include but not limited to:
   a. Tangible examples of competencies or a completed Alternative Credit Student Portfolio form
   b. A current resume
   c. A job description that clearly defines duties and a letter from the employer verifying that the student has met the competencies of the course(s) requested

All forms, attachments, documentation and the application fee will be submitted to the Cashier, One Stop office, 2nd floor Kirkwood Hall, for billing, processing and archival.

Alternative credit will be denoted on the student's transcript as exam credit. The credit will not apply to the grade point average calculation. If the student transfers to another institution, credits earned through this policy are subject to the receiving institution’s transfer credit policies and procedures. It is not guaranteed that all post-secondary institutions will recognize these credits.

If the Application for Alternative Credit is denied, the student will be notified in writing by the department coordinator or Dean. The Application and a copy of the denial letter must be submitted to the Records Evaluator for inclusion in the student’s academic record and archival. The student may appeal the decision to the Vice President Academic Affairs. The appeal must be made in writing and submitted within 10 business days of the denial.

**Anytime/Anywhere Registration**

Qualifying writing and reading placement scores (COMPASS or ACT) are required in order to enroll in Anytime/Anywhere classes. Students with previously earned credits in Anytime/Anywhere are exempt from this restriction.

Students with a grade point average of less than 1.8 for all Anytime/Anywhere (ATAW) courses within the previous three years will have a registration restriction placed on their record. The restriction prevents registration in ATAW classes until the average for ATAW courses reaches 1.8 or better, or a three year period has passed. The average for ATAW courses can be improved by retaking failed or low-scored courses in a face-to-face format. In cases where extreme hardship or medical conditions can be documented a petition for policy waiver may be submitted for committee review and decision on reinstatement. Note: This registration restriction does not prevent students from enrolling in face-to-face or hybrid format classes, only ATAW classes.
Assignments and Examinations

Students are expected to complete all class assignments and examinations on time. It is the student’s responsibility to make up any work missed during an absence from class.

Students must be present for final examinations as scheduled. In cases of illness or emergency during final exams, a student may be excused and the exam rescheduled by the instructor. In cases where such illness or emergency may extend more than a few days, the procedure for incomplete course work should be followed.

Cheating and Plagiarism

Kirkwood students are responsible for authenticating any assignment submitted to an instructor. If asked, you must be able to produce proof that the assignment you submit is actually your own work. Therefore, we recommend that you engage in a verifiable working process on assignments. Keep copies of all drafts of your work, make photocopies of research materials, write summaries of research materials, hang onto Writing Center receipts, keep logs or journals of your work on assignments and papers, and save drafts or versions of assignments under individual file names on your computer.

The inability to authenticate your work, should an instructor request it, is sufficient ground for failing the assignment. In addition to requiring students to authenticate their work, Kirkwood Community College instructors may employ various other means of ascertaining authenticity – such as engaging in Internet searches, creating quizzes based on student work, or requiring students to explain their work or process orally.

Procedure and penalties for confirmed cheating and plagiarism are:

First Offense: The instructor will have the authority to issue a failure on the paper, exam or assignment on which cheating or plagiarism was established. A record of the incident will be reported to the dean of students.

Second Offense: Upon confirmation of the student’s second offense by the Dean of Students, the instructor will have the authority to issue a failure for the course in which the second incident occurred.

Third Offense: Upon confirmation of the student’s third offense by the Dean of Students, the student will be subject to suspension from the college for one semester.

Class Attendance and Class Attendance Policy Related to College Sponsored Activities

Students are expected to attend all sessions of classes for which they are enrolled. Absences shall in no way lessen student responsibility for meeting the requirements of any class. Students are expected to know the attendance policy of each of their instructors. Failure to abide by an instructor’s attendance policy may adversely impact their grade.

Class Attendance Policy

Learning is central to our work at Kirkwood Community College. Faculty members use educational experiences to facilitate learning, and students learn by engaging in those experiences. Attendance and engagement in all scheduled classes is regarded as integral to learning and is expected of all students.

Kirkwood faculty members identify expectations for learning and attendance in their course syllabi. Students are accountable for the learning outcomes for each session, including those sessions that have been missed. Assessments of learning that occur during an absence may or may not be made up, depending on the policies of the instructor and the nature of the absence. Absences that result from participation in college-sponsored activities will be accommodated, subject to the guidelines listed below. For all other absences, authorization of an excuse is the province of the individual faculty member and subject to the standard appeal process.

Class Attendance Policy Related to College-sponsored Activities

College-sponsored activities (excluding practices) include athletic competitions, student academic competitions and conferences, musical and drama performances, and class field trips. Questions on whether an activity is a college-sponsored event for purposes of this policy should be directed to the vice president of academic affairs. If anticipated absences for a semester appear to be extraordinarily numerous or difficult to accommodate, a faculty member may appeal the need for the full accommodation to the vice president of academic affairs. Students involved in activities where they are required to represent the college, i.e. college-sponsored activities, must give written notice to the faculty member at least one week in advance of the absence unless last-minute schedule changes make this notice impossible. If regular season athletic schedules have been developed, student participants must present written notice of anticipated absences within the first week of the semester. Failure to provide timely written notice may result in a loss of this opportunity.

The faculty shall accord students the opportunity to independently make up course work or work of equal value, for the day(s) the event was scheduled and to take a scheduled exam at an alternate time. The faculty member shall determine alternate exam times and due dates for missed course work. These assigned dates may be prior to the date of the absence.

Organizers (coaches, faculty and staff) of college-sponsored activities shall:

1. assist students in planning class schedules to minimize the number of absences;
2. inform students of their responsibilities as described above; and
3. provide written communications to the faculty member announcing and verifying the need for student class absences. Written notices should be provided at the beginning of the semester if the schedule is known, or as soon as possible after the need for a student absence is determined.
Course Load

Those pursuing 12 semester hours or more during any semester (nine hours or more in a summer term) are considered full-time students. To earn an associate degree in four semesters, students should plan to enroll for an average of 16 hours per semester.

The college will define full-time student status as less than 12 hours in rare situations that are based upon medical conditions that qualify for disability accommodations. The college will conduct its own assessment, as well as require assessment and documentation from qualified medical sources in accordance with already-established college ADA procedures. The determination will not supersede currently established federal financial aid regulations.

There is no limit on the number of credit hours a student may carry in any semester. However, any student wishing to enroll in more than 18 hours in a semester or more than 12 hours in a summer semester will need the department dean’s signature.

Students may not take a course for more or less credit than that assigned in the college catalog or credit class schedule.

Part-time course work may be undertaken in many programs. Students with an interest in attending part-time are advised to contact the appropriate program department for details.

Credit by Examination

Students may earn credit hours through the College Level Examination Program (CLEP) or through a variety of department-approved subject matter examinations or Advanced Placement tests. These examinations enable students to earn college credit for their knowledge in various subject areas by allowing them to test out of individual courses. Credits awarded through the examination process will count toward the number of credit hours needed for the program degree, diploma or certificate. The dean of the respective department will have final approval of credits awarded by examination. A maximum of 18 credits may be awarded for alternative coursework and exam credit of any kind. For further information about these exams, check with the One Stop office.

Credit Hour Policy

Kirkwood defines a unit of credit as a semester hour. A semester hour of credit is given for one hour in class each week for a period of 16 weeks. (See College Catalog) No registration or orientation hours may be included when determining credit hours. The College’s minimum requirements are:

The College’s Minimum Requirements

<table>
<thead>
<tr>
<th>Instructional Delivery</th>
<th>Delivery Definition</th>
<th>Minimum Minutes</th>
<th>Contact Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classroom Work</td>
<td>Lecture and formalized classroom instruction under the supervision of an instructor</td>
<td>800</td>
<td>16</td>
</tr>
<tr>
<td>Laboratory Work</td>
<td>Experimentation and practice by students under the supervision of an instructor</td>
<td>1600</td>
<td>32</td>
</tr>
<tr>
<td>Clinical Practice</td>
<td>Applied learning experience in a health agency or office under the supervision of an instructor</td>
<td>2400</td>
<td>48</td>
</tr>
<tr>
<td>Work Experience</td>
<td>Employment related experience planned and coordinated by an institutional representative and employer, with control and supervision of the student on the job.</td>
<td>3200</td>
<td>64</td>
</tr>
<tr>
<td>Distance Education</td>
<td>Courses or programs taught over the Internet, Iowa Communications Network (ICN), or other electronic means. (i.e. in-class hybrids)</td>
<td>Same as above with equivalent work required</td>
<td>Same as above with equivalent work required</td>
</tr>
<tr>
<td>Accelerated Courses</td>
<td>Courses or programs of study that allow students to complete them at a faster pace than if offered by conventional methods</td>
<td>Equivalent outcome achievement and verifiable evidence</td>
<td>Equivalent outcome achievement and verifiable evidence</td>
</tr>
</tbody>
</table>

Chapter 21 of the Iowa Administrative Code ("One credit hour equals 50 minutes") and Federal Credit Hour Definition ("A credit hour is the amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally-established equivalency that reasonably approximates not less than: (1) one hour of classroom work and a minimum of two hours of out-of-class student work each week for approximately 15 weeks for one semester.")
Curricular Graduation Requirements

Students are required to complete the curricular requirements in place during the academic year in which they were accepted into the program of study as long as there were no breaks in enrollment equal in length or longer than concurrent fall/spring semesters or concurrent spring/fall semesters.

If a student is pursuing a program of study that becomes closed to admissions, the academic department responsible for the program will determine a future date by which current students must either finish or change to an open program. Students in this situation should work closely with their advisors.

Students with a break in enrollment equal in length or longer than concurrent fall/spring semesters or concurrent spring/fall semesters will be allowed to finish their program of study as long as it is still open to admissions, but under the curricular requirements in place during the academic year in which they re-enroll.

Earning Multiple Awards

Kirkwood confers certificates, diplomas and degrees. These awards are earned in progression based on the number of credit hours needed to complete the required program of study. A student may earn, and the college will confer, multiple certificates and diplomas per term, but only one degree per term. To earn another degree, the student must complete an additional 12 semester hours of resident course work.

Fraudulent Academic Credentials

Anyone seeking to become a student at Kirkwood Community College who submits fraudulent or altered academic credentials to the college, or who is found to have fraudulently altered Kirkwood academic credentials or records, will be subject to penalties decided upon by the college ranging from suspension or expulsion and/or legal prosecution.

Independent Study

Independent study is special course work offered to expand knowledge in a specific area beyond the existing curriculum. Students requesting independent study must have previous backgrounds and good performance records in the areas in which independent study is sought. Independent study should not be used to meet college requirements that can be satisfied through regular course offerings. Students need to discuss the Independent Study Course Contract with instructors before registering.

Mandatory Testing

As of January 2012, all new degree-seeking and diploma-seeking students registering for more than six credit hours are required to take the COMPASS test prior to registration, unless they meet one of the following exemptions (allow at least two weeks for these exemptions to be evaluated):

- Completed the COMPASS test or ACT and sent the official record of scores to Kirkwood. Math scores are considered valid for two years while reading and writing scores are valid for three years.
- Successfully completed (C or better) college-level math and writing classes at a regionally accredited college.
- Earned a Bachelor's degree from an accredited college.

National Guard or Reserve Forces of the United States Duty Policy

This policy offers the following options to a student who is a member of Iowa National Guard or reserve forces of the United States and who is ordered to start military service or federal service or duty:

a. Withdraw from the student’s entire registration and receive a full refund of tuition and mandatory fees.

b. Make arrangements with the student’s instructors for course grades, or for incomplete’s that shall be completed by the student at a later date. If such arrangements are made, the student’s registration shall remain intact and tuition and mandatory fees shall be assessed for the courses in full.

c. Make arrangements with only some of the student’s instructors for course grades, or for incomplete’s that shall be completed by the student at a later date. If such arrangements are made, the registration for those courses shall remain intact and tuition and mandatory fees shall be assessed for those courses. Any course for which arrangements cannot be made for grades or incompletes shall be considered dropped and the tuition and mandatory fees for the course refunded.

Program/Area of Study Changes

A student who changes his/her program/area of study will be accountable in terms of graduation only for requirements of the new program/area of study. The course work and grade point average earned in earlier programs/areas of study will continue to affect cumulative GPA and appear on the student’s transcript. A student contemplating a change of program/area of study is encouraged to discuss his/her plans fully with a member of the counseling staff or with his/her academic advisor.

Readmission

Students who have withdrawn from the college in good standing and who desire to be readmitted should apply at www.kirkwood.edu/apply. Students who are readmitted after absence from the college and who desire a degree, diploma or certificate will be required to fulfill current graduation requirements.
Refund of Tuition

All refunds are for tuition only and are computed as of the date the class is dropped via EagleNet or is withdrawn at the One Stop Office or at a Kirkwood center.

- For a standard length class, a student may drop up to the end of the first week and receive a 100 percent refund.
- For a standard length class, a student may drop up to the end of the second week and receive a 50 percent refund.
- For a class that is one to eight days long, a student receives no refund beginning the first day of class.
- For a class that is nine to 33 days long, a student may drop up to the end of the first day of the class and receive a 50 percent refund.
- For a class that is 34 to 81 days long, a student may drop up to the end of the second calendar day of the class and receive a 100 percent refund.
- For a class that is 34 to 81 days long, a student may drop up to the end of the fourth calendar day and receive a 50 percent refund.
- For a study abroad course, a student may only drop by submitting a formal withdraw request to the International Programs office. Refunds for tuition and program fees are determined by the payment terms and vary by program.

Financial aid recipients who withdraw from all classes are subject to the federal regulations regarding return of funds. The One Stop office will make this calculation after all classes are dropped. This may result in a balance due for the student. Any student who is considering dropping all classes should speak with a financial aid representative to determine how this will affect the financial aid award.

Residency Requirement

Students completing associate degrees must earn a minimum of 16 credit hours from Kirkwood. Students completing diplomas must earn a minimum of 8 credit hours from Kirkwood. Students completing certificates must earn a minimum of 6 credit hours from Kirkwood.
Administrative Assistant
Business & Information Technology
203 Nielsen Hall
319-398-5416
www.kirkwood.edu/businessdept

Entry time
Fall, Spring, Summer

Award
Associate of Applied Science degree
2 years (4 semesters)
Office Assistant diploma option
1 year (2 semesters)

This program prepares graduates to become members of the executive team in today’s fast-paced business environment. It includes in-depth instruction in computer applications (word processing, desktop publishing, multimedia) and essential workplace "soft skills" (teamwork, project development, problem-solving).

Career opportunities: executive assistant, administrative assistant, officer manager, information coordinator, communications facilitator and telecommuting coordinator.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
<td></td>
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</tr>
<tr>
<td>ADM-176</td>
<td>Electronic Records System</td>
<td>3</td>
</tr>
<tr>
<td>BCA-136</td>
<td>Advanced Word Processing</td>
<td>3</td>
</tr>
<tr>
<td>BCA-179</td>
<td>PowerPoint Multimedia</td>
<td>3</td>
</tr>
<tr>
<td>BUS-190</td>
<td>Professionalism: BPA(^1)</td>
<td>1</td>
</tr>
<tr>
<td>COM-710</td>
<td>Basic Communications(^2)</td>
<td>3</td>
</tr>
<tr>
<td>ENG-105</td>
<td>Composition (^3)</td>
<td>3</td>
</tr>
<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
<td>3</td>
</tr>
<tr>
<td>PSY-111</td>
<td>Introduction to Psychology</td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
<td>16</td>
</tr>
</tbody>
</table>

| Second Semester |              |              |
| ADM-133        | Business Math and Calculators\(^3\) | 3 |
| MAT-102        | Intermediate Algebra (or higher) | 3 |
| ADM-163        | Office Concepts and Procedures\(^4\) | 3 |
| ADM-165        | Information Processing | 3 |
| BCA-138        | Advanced Word Processing Applications | 3 |
| BCA-205        | Database/Spreadsheets |              |
| BUS-190        | Professionalism: BPA\(^1\) | 1 |
|               | **Total**              | 16           |

| Third Semester |              |              |
| ACC-111        | Introduction to Accounting OR | 3 |
| ACC-152        | Financial Accounting     |              |
| ADM-142        | Desktop Publishing      |              |
| ADM-164        | Administrative Office Applications | 3 |
| BUS-185        | Business Law I           | 3 |
|                | Humanities elective     | 3 |
|                | **Total**              | 15           |

| Fourth Semester |              |              |
| ADM-154        | Business Communication OR | 3 |
| ENG-106        | Composition II          |              |
| ADM-187        | Administrative Assistant Capstone | 1 |
| BUS-290        | Employment Search/Workplace Success | 1 |
| BUS-932        | Internship              | 3 |
| MGT-158        | Office Supervision and Management | 3 |
|                | Business/Computer electives | 4 |
|                | **Total**              | 15           |

Total program credit hours 62

Business/Computer Electives

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>ACC-152</td>
<td>Financial Accounting</td>
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<tr>
<td>ACC-156</td>
<td>Managerial Accounting</td>
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<tr>
<td>ACC-313</td>
<td>Accounting Applications</td>
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<tr>
<td>ACC-362</td>
<td>Accounting Spreadsheets</td>
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<tr>
<td>BCA-304</td>
<td>Emerging Technology Trends</td>
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<tr>
<td>BUS-102</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>CIS-207</td>
<td>Fundamentals of Web Programming</td>
<td>3</td>
</tr>
<tr>
<td>ECN-120</td>
<td>Principles of Macroeconomics</td>
<td>3</td>
</tr>
<tr>
<td>ECN-130</td>
<td>Principles of Microeconomics</td>
<td>3</td>
</tr>
<tr>
<td>HSC-115</td>
<td>Medical Terminology</td>
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<tr>
<td>HSC-117</td>
<td>Basic Medical Terminology</td>
<td>2.5</td>
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<tr>
<td>MGT-101</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGT-121</td>
<td>Project Management Basics</td>
<td>3</td>
</tr>
<tr>
<td>MGT-124</td>
<td>Project Management Tools</td>
<td>3</td>
</tr>
<tr>
<td>MGT-130</td>
<td>Principles of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MGT-137</td>
<td>Developing Leadership Skills</td>
<td>1</td>
</tr>
<tr>
<td>MGT-139</td>
<td>Effective Team Building for Managers</td>
<td>1</td>
</tr>
<tr>
<td>MGT-140</td>
<td>Time Management in the Workplace</td>
<td>1</td>
</tr>
<tr>
<td>MGT-170</td>
<td>Human Resource Management</td>
<td>3</td>
</tr>
<tr>
<td>MGT-171</td>
<td>Human Resource Strategies and Tools</td>
<td>3</td>
</tr>
<tr>
<td>MGT-300</td>
<td>Introduction to Entrepreneurship</td>
<td>3</td>
</tr>
<tr>
<td>MGT-305</td>
<td>Business Plans for Entrepreneurs</td>
<td>3</td>
</tr>
<tr>
<td>MKT-110</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
<tr>
<td>MKT-140</td>
<td>Principles of Selling</td>
<td>3</td>
</tr>
</tbody>
</table>
Optional Courses

BCA-135 Introduction to Word Processing 3

Office Assistant Diploma Requirements

First Semester

ADM-176 Electronic Record System 3
BCA-136 Advanced Word Processing 3
BCA-179 PowerPoint Multimedia 3
BUS-190 Professionalism: BPA 1
COM-710 Basic Communications OR 3
ENG-105 Composition 1
MGT-145 Human Relations in Management OR 3
PSY-111 Introduction to Psychology 16

Total program credit hours 32

Second Semester

ADM-133 Business Math and Calculators OR 3
MAT-102 Intermediate Algebra (or higher math)
ADM-154 Business Communication OR 3
ENG-106 Composition II
ADM-163 Office Concepts and Procedures
ADM-165 Information Processing 3
BCA-205 Database/Spreadsheets 3
BUS-290 Employment Search/Workplace Success 1

Total program credit hours 16

*: Students who are primarily part-time or enrolled in courses held at Kirkwood county centers, may wish to register for the Professionalism in the Workplace class rather than the Professionalism: BPA course listed during the first and second semesters. Professionalism in the Workplace (ADM-257) is a Distance Learning course worth two credits. Students must either take both semesters of the on-campus course or the Distance Learning course. See the program coordinator for assistance in making this decision.

*: Your COMPASS writing score will determine if you need to take prerequisite classes.

*: Your COMPASS math score will determine if you need to take prerequisite classes.

*: Requires typing speed of 30 wpm (words per minute) or concurrent enrollment in Advanced Word Processing.

*: Enrollment in this course requires a writing COMPASS score of 70 or above.

Students wishing to transfer to a four-year college or university may substitute the following courses:

PSY-111 FOR MGT-145 Human Relations in Management

Advanced Manufacturing Engineering Technologies

Industrial Technologies
101 Jones Hall
319-398-4983
www.kirkwood.edu/industrialtech

Entry time
Fall

Award
Associate of Applied Science degree
2 years (4 semesters, 1 summer)

Industry endorsements earned
OSHA 10-General Industry; Adult First Aid with CPR; Forklift Class 1, 3, 4, 5, 7; National Career Readiness Certificate; Personal Protective Equipment; NIMS Level 1: CNC Lathe and Mills Credentials; American Welding Society MIG and TIG welder qualifications.

This multi-skilled degree prepares you for an exciting and rewarding career in the high demand, advanced manufacturing careers of product design, CNC machining/forming, production welding and quality control. Possessing multiple skill sets in today's workforce prepares you well for career advancements and increased earnings throughout your lifetime.

Graduates of this program can go on to complete a four-year degree at UNI.

Career opportunities: Laser cutter operator, Water jet cutter operator, CNC punch press operator, CNC press brake operator, CNC mill operator, CNC lathe operator, TIG welder, MIG welder, CAD designer, Quality control inspector.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MFG-286</td>
<td>Job Planning, Benchwork &amp; Layout (NIMS)</td>
<td>3</td>
</tr>
<tr>
<td>MFG-259</td>
<td>Measurement, Materials &amp; Safety (NIMS)</td>
<td>3</td>
</tr>
<tr>
<td>IND-155</td>
<td>Microcomputer Applications OR</td>
<td>2</td>
</tr>
<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
<td>4</td>
</tr>
<tr>
<td>MAT-745</td>
<td>Technical Mathematics I</td>
<td>4</td>
</tr>
</tbody>
</table>
Career Programs

PHY-190  Physics I  3
-----  Communication Elective  3

Second Semester
EGT-125  Applied Statics  4
MFG-285  Applied Metallurgy  2
MFG-291  CNC Mill Operator (NIMS)  3
MFG-292  CNC Lathe Operator (NIMS)  3
MGT-145  Human Relations in Management OR
PSY-111  Introduction to Psychology  3
-----  Communication Elective  3

Summer Term
BUS-280  Fundamentals of Lean Process Improvement  3
MFG-281  CNC Punch Press Operations (NIMS)  3
MFG-500  Statistical Process Control  1
MFG-287  Manual Press Brake Operations (NIMS)  3
MFG-339  CNC Press Brake Operator (NIMS)  2

Third Semester
CAD-237  Geometric Dimensioning & Tolerancing  3
EGT-124  Strength of Materials  4
CAD-300  AutoCAD for Applied Engineering  2
CAD-310  Inventor for Applied Engineering  1
WEL-370  Production Mig Welding  4
ELT-304  Introduction to Electrical Circuits  4

Fourth Semester
MFG-288  Water Jet Operations  2
MFG-283  Laser Cutting Operations  2
WEL-360  Production TIG Welding  4
ATR-135  Programming for Advanced Manufacturing  3
ATR-104  Introduction to Automation  2
-----  Humanities or History/Cultures  3

Total program credit hours  82

Agricultural Geospatial Technology

Ag Sciences
Washington Hall
319-398-5609
www.kirkwood.edu/agrisciences

Entry time
Fall or Spring

Award
Associate of Applied Science degree

2 years (4 semesters, 1 summer)
Certificate (2 semester)

Agricultural Geospatial Technology students prepare to work in the emerging geospatial technology industry. Kirkwood’s program is one of only a handful of precision agriculture programs in the nation and provides specialization in dealership/equipment or agronomy careers.

The two-year program includes courses in computers, GPS (Global Positioning Systems), ArcView and data collection, in addition to agronomy and agriculture economics. Students also complete an internship during the summer. This degree can apply to many career areas and can be customized for this program. A strong background in math and science is recommended for this program.

Career opportunities: precision farming specialists, custom applicators, mapping technicians, precision ag coordinators, geospatial technicians.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall Term I</td>
<td></td>
<td></td>
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<tr>
<td>AGA-154</td>
<td>Fundamentals of Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>AGC-103</td>
<td>Ag Computer</td>
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<tr>
<td>AGC-313</td>
<td>Leadership in Agriculture</td>
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<tr>
<td>AGP-333</td>
<td>Precision Farming Systems</td>
<td>3</td>
</tr>
<tr>
<td>ENG-105</td>
<td>Composition I OR</td>
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<td>COM-723</td>
<td>Workplace Communication OR</td>
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<tr>
<td>ENG-101</td>
<td>Elements of Writing</td>
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<tr>
<td>MGT-145</td>
<td>Human Relations in Management OR</td>
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<tr>
<td>SOC-110</td>
<td>Introduction to Sociology</td>
<td>16</td>
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<tr>
<td>Spring Term I</td>
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<tr>
<td>AGA-114</td>
<td>Principles of Agronomy</td>
<td>3</td>
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<tr>
<td>AGC-160</td>
<td>Introduction to Technical Chemistry OR</td>
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<td>CHM-165</td>
<td>General Chemistry I</td>
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<td>AGP-405</td>
<td>Ag Applications of GIS</td>
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<tr>
<td>MAT-107</td>
<td>Survey of Mathematics</td>
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<td>Career specialty requirement</td>
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<tr>
<td>Summer Term</td>
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<tr>
<td>PHI-105</td>
<td>Introduction to Ethics OR</td>
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<td>HUM-105</td>
<td>Working in America OR</td>
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<tr>
<td>HUM-116</td>
<td>Encounters in Humanities Career specialty requirement</td>
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<td></td>
<td></td>
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<tr>
<td>Fall Term II</td>
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<tr>
<td>AGP-420</td>
<td>Geospatial Data Collection</td>
<td>3</td>
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<tr>
<td>BIO-104</td>
<td>Introductory Biology with Lab OR</td>
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<tr>
<td>PHY-120</td>
<td>Introductory Physics</td>
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<tr>
<td>MAT-115</td>
<td>Mathematics and Society</td>
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<tr>
<td>SPC-101</td>
<td>Fundamentals of Oral Communication OR</td>
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<tr>
<td>COM-744</td>
<td>Oral Communication in the</td>
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</table>
Career Programs

Workplace

Career specialty requirement 3

Spring Term II

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<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td>AGB-101</td>
<td>Agricultural Economics</td>
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<td>AGC-313</td>
<td>Leadership in Agriculture</td>
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<tr>
<td>AGC-932</td>
<td>Internship</td>
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<tr>
<td>AGP-425</td>
<td>Agricultural Spatial Analysis</td>
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<td></td>
<td>Career specialty requirement</td>
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</table>

Total program credit hours 14

Agriculture Business

Ag Sciences

Washington Hall
319-398-5609
www.kirkwood.edu/agrisciences

Entry time
Fall, Spring or Summer

Award
Associate of Applied Science degree
2 years (4 semesters, 1 summer)

Agriculture Business students prepare for careers in the agricultural sales and service industry. Students will study sales, advertising, merchandising, economics, farm management, marketing, agronomy and animal science, and are required to complete an internship.

Career opportunities: facility operations technician; farm operations manager; custom applicator; production assistants; territory salesperson.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGA-154</td>
<td>Fundamentals of Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>AGA-165</td>
<td>Agricultural Fertilizer &amp; Chemistry</td>
<td>3</td>
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<td>AGA-209</td>
<td>Row Crop Production</td>
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Total program credit hours 18

Term 2

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<td>Fundamentals of Soil Science</td>
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<tr>
<td>AGA-165</td>
<td>Agricultural Fertilizer &amp; Chemistry</td>
<td>3</td>
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<tr>
<td>AGA-209</td>
<td>Row Crop Production</td>
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Certificate Requirements

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<td>AGA-114</td>
<td>Principles of Agronomy</td>
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</tr>
<tr>
<td>AGP-329</td>
<td>Introduction to GPS OR</td>
<td>3</td>
</tr>
<tr>
<td>AGP-333</td>
<td>Precision Farming Systems</td>
<td>3</td>
</tr>
<tr>
<td>AGP-405</td>
<td>Ag Applications of GIS</td>
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Total program credit hours 68

Agronomy Specialty

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<td>Farm Records, Accounts and Analysis</td>
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<td>AGA-376</td>
<td>Integrated Pest Management</td>
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<tr>
<td>AGA-165</td>
<td>Agricultural Fertilizer and Chemicals</td>
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<td>Agricultural Selling</td>
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Dealership/Equipment Specialty

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<td>AGP-435</td>
<td>Advanced Precision Farming Systems - Software</td>
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<td>AGP-440</td>
<td>Ag Applications of Digital Imagery</td>
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<td>Agricultural Sales</td>
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<td>Field Crop Harvesting and Drying</td>
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<td>AGN-223</td>
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<td>Park and Recreation Administration</td>
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Term I

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<td>Introduction to GPS OR</td>
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<td>AGP-333</td>
<td>Precision Farming Systems</td>
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Summer Term

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<td>Agricultural Selling</td>
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Term 2

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<td>AGB-133</td>
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<tr>
<td>AGC-103</td>
<td>Ag Computer</td>
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<td>AGC-115</td>
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<td>AGS-113</td>
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<td>COM-723</td>
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Fall Term I

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<td>Agricultural Procedures and Safety</td>
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<td>Financial Accounting</td>
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<td>Mathematics I - Agriculture</td>
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Summer Term

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Career Programs

Agriculture Production Management

Ag Sciences
Washington Hall
319-398-5609
www.kirkwood.edu/agrisciences

Entry time
Fall, Spring or Summer

Award
Associate of Applied Science degree
2 years (4 semesters, 1 summer)
Diploma
1 year (2 semesters, 1 summer)

Find yourself in the food production chain of modern agriculture. Choose from three areas of emphasis - Beef, Crops, or Swine - or create a custom program of study to best meet your career goals. Classes focus on the latest production methods and technology through hands-on learning on the student-run college farm.

Career opportunities: farm management, swine production facilities, feedlots, cattle ranches, herdsmen positions, crop production and agronomy positions.

Degree Requirements

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<tr>
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<th>Course Title</th>
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<td>AGP-333</td>
<td>Precision Farming Systems OR</td>
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<td>AGC-420</td>
<td>Issues in Agriculture</td>
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<td>AGS-319</td>
<td>Animal Nutrition OR</td>
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<td>AGA-154</td>
<td>Fundamentals of Soil Science</td>
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<td>AGB-235</td>
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<td>AGB-330</td>
<td>Farm Business Management</td>
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<td>AGA-880</td>
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<td>Entrepreneurship in Agriculture</td>
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<td>Agricultural Selling</td>
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Total program credit hours

74

Optional

VIN-105 Introduction to Wine Science 3
VIN-106 Introduction to Viticulture 3

Agriculture Technical Courses

AGA-114 Principles of Agronomy 3
AGA-154 Fundamentals of Soil Science 3
AGA-165 Agricultural Fertilizer and Chemicals 3
AGA-170 Fertilizer Management 3
AGA-209 Row Crop Production 3
AGA-217 Field Crop Harvesting and Drying 3
AGA-376 Integrated Pest Management 3
AGA-880 Forage Crop Management 3
AGB-331 Entrepreneurship in Agriculture 3
AGB-336 Agricultural Selling 3
Agricultural Production Diploma Requirements

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<td>AGC-313</td>
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Total program credit hours 33

General Education Courses

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Apparel Merchandising and Design

Business & Information Technology
203 Nielsen Hall
319-398-5416
www.kirkwood.edu/businessdept

Entry time
Fall

Award
Associate of Applied Science degree
2 years (4 semesters)

The Apparel Merchandising non-transfer plan of study is designed to provide students with fashion knowledge, sales, managerial and supervisory skills necessary for immediate involvement in the area of retailing. The program incorporates a supervised internship in a retail establishment and annual fashion show to provide opportunities to learn outside the classroom.

Credits earned in the Apparel Merchandising transfer plan of study are fully transferable to Iowa State University. Two additional years of study at ISU will earn a Bachelor or Science degree in Apparel, Merchandising, and Design, which will prepare students for corporate positions.

Accreditation: This program is accredited by ACBSP (Association of Collegiate Business Schools and Programs). ACBSP is the leading specialized accreditation association for business education supporting, celebrating and rewarding teaching excellence.

Career opportunities: fashion sales/buyer, specialty and department store management, visual merchandiser, area supervisor.

Degree Requirements

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<td>APP-130</td>
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<td>ENG-105</td>
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<td>SPC-101</td>
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<td>Fashion Trends and Consumer Analysis</td>
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63
### Fourth Semester

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<td>ECN-130</td>
<td>Principles of Microeconomics</td>
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<td>Principles of Retailing</td>
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Total program credit hours: **62**

#### Management Track (non-transfer plan)

**First Semester**

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<td>Fundamentals of Oral Communication</td>
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**Second Semester**

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<td>ACC-152</td>
<td>Financial Accounting OR</td>
<td></td>
</tr>
<tr>
<td>ACC-111</td>
<td>Introduction to Accounting</td>
<td></td>
</tr>
<tr>
<td>PSY-111</td>
<td>Introduction to Psychology OR</td>
<td>3</td>
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<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
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</tbody>
</table>

**Third Semester**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>APP-120</td>
<td>Apparel Visual Merchandising</td>
<td>3</td>
</tr>
<tr>
<td>APP-210</td>
<td>Apparel Textiles</td>
<td>3</td>
</tr>
<tr>
<td>BUS-290</td>
<td>Employment Search and Workplace Success</td>
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</tr>
<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>MGT-101</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>MGT-110</td>
<td>Principles of Marketing</td>
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**Fourth Semester**

<table>
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<tbody>
<tr>
<td>APP-220</td>
<td>Fashion Show Procedures</td>
<td>3</td>
</tr>
<tr>
<td>BUS-932</td>
<td>Internship</td>
<td>3</td>
</tr>
<tr>
<td>MGT-130</td>
<td>Principles of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MKT-160</td>
<td>Principles of Retailing</td>
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<td>Humanities Elective³</td>
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Total program credit hours: **62**

#### Optional

<table>
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<td>APP-924</td>
<td>Honors Project</td>
<td>1</td>
</tr>
<tr>
<td>APP-928</td>
<td>Independent Study</td>
<td>1</td>
</tr>
</tbody>
</table>

¹Your COMPASS writing score will determine if you need to take prerequisite classes.
²Your COMPASS math score will determine if you need to take prerequisite classes.
³Suggested courses: Art Appreciation, Music Appreciation, Introduction to Philosophy, Literature, Art History.

**NOTE:** Students transferring to the design option at Iowa State University should substitute the following courses:

- APP-240 Fashion Design **FOR** MKT-110 Principles of Marketing

### Architectural Technology

**Industrial Technologies**

101 Jones Hall
319-398-4983
www.kirkwood.edu/industrialtech

**Entry time**

- Fall

**Award**

Associate of Applied Science degree
2 years (4 semesters and 1 summer), some required evening classes

**Industry endorsements earned**

National Career Readiness Certificate

Architectural Technology provides quality technical training to be successful in a career related to the architectural profession. The program includes instruction in a variety of CAD software, hand sketching, business and graphic editing computer applications, teamwork/problem-solving skills and liberal arts studies. Practical experience is enhanced through a paid architectural/construction-related internship or an unpaid architectural mentoring program.

**Career opportunities:** CAD technicians for architectural, civil, mechanical, electrical and/or structural services; estimators; designers; drafters for building material suppliers; remodelers; kitchen designers; residential designers.

### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>ARC-300</td>
<td>Architectural Sketching I</td>
<td>1</td>
</tr>
<tr>
<td>ARC-301</td>
<td>Architectural Sketching II</td>
<td>2</td>
</tr>
<tr>
<td>CON-116</td>
<td>Architectural Plans and Specs</td>
<td>2</td>
</tr>
<tr>
<td>CON-190</td>
<td>Residential Construction</td>
<td>3</td>
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<tr>
<td>EGT-460</td>
<td>PLTW - Civil Engineering and Architecture OR</td>
<td></td>
</tr>
<tr>
<td>EGR-460</td>
<td>PLTW-Civil Engineering and Architecture OR</td>
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<tr>
<td>CON-311</td>
<td>Building Construction Systems I</td>
<td>3</td>
</tr>
<tr>
<td>CON-410</td>
<td>Construction Modeling</td>
<td>3</td>
</tr>
<tr>
<td>MAT-716</td>
<td>Industrial Math II*</td>
<td>3</td>
</tr>
</tbody>
</table>

*Your COMPASS writing score will determine if you need to take prerequisite classes.
²Your COMPASS math score will determine if you need to take prerequisite classes.
³Suggested courses: Art Appreciation, Music Appreciation, Introduction to Philosophy, Literature, Art History.

**NOTE:** Students transferring to the design option at Iowa State University should substitute the following courses:

- APP-240 Fashion Design **FOR** MKT-110 Principles of Marketing
First Year - Second Semester (Spring)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ARC-195</td>
<td>CAD Sketchup</td>
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<td>ARC-100</td>
<td>Architectural Profession</td>
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<tr>
<td>ARC-135</td>
<td>American Architecture</td>
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<tr>
<td>CAD-400</td>
<td>AutoCAD for Architecture</td>
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<tr>
<td>CON-313</td>
<td>Building Construction Systems II</td>
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</tr>
<tr>
<td>CON-322</td>
<td>Residential Estimating</td>
<td>3</td>
</tr>
<tr>
<td>CSC-110</td>
<td>Introduction to Computers OR</td>
<td>3</td>
</tr>
<tr>
<td>IND-155</td>
<td>Microcomputer Applications</td>
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Summer Term

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CAD-200</td>
<td>CAD SoftPlan</td>
<td>3</td>
</tr>
<tr>
<td>ARC-185</td>
<td>Architectural Photoshop</td>
<td>1</td>
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<tr>
<td>CAD-202</td>
<td>Architectural CAD Residential</td>
<td>3</td>
</tr>
<tr>
<td>CON-134</td>
<td>Surveying and Site Layout</td>
<td>2</td>
</tr>
<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
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<tr>
<td>PSY-111</td>
<td>Introduction to Psychology</td>
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</table>

Second Year - First Semester (Fall)

<table>
<thead>
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<th>Course Number</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>CAD-201</td>
<td>CAD REVIT</td>
<td>3</td>
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<tr>
<td>CAD-204</td>
<td>Architectural CAD Commercial</td>
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<tr>
<td>CON-316</td>
<td>Sustainable Construction Science</td>
<td>3</td>
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<tr>
<td>PHY-120</td>
<td>Introductory Physics</td>
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<td></td>
<td>Communications Elective*</td>
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</tbody>
</table>

Second Year - Second Semester (Spring)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARC-932</td>
<td>Internship OR</td>
<td>2</td>
</tr>
<tr>
<td>MGT-300</td>
<td>Introduction to Entrepreneurship</td>
<td>3</td>
</tr>
<tr>
<td>ART-133</td>
<td>Drawing</td>
<td>3</td>
</tr>
<tr>
<td>CAD-206</td>
<td>Architectural CAD Projects</td>
<td>6</td>
</tr>
<tr>
<td>CAD-207</td>
<td>CAD REVIT Projects</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Communications Elective*</td>
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</table>

Total program credit hours **81**

Optional Courses

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ARC-924</td>
<td>Honors Project</td>
<td>1</td>
</tr>
<tr>
<td>ARC-928</td>
<td>Independent Study</td>
<td>1</td>
</tr>
<tr>
<td>CON-331</td>
<td>Construction Materials Science</td>
<td>3</td>
</tr>
</tbody>
</table>

*Students planning to transfer to a four-year college or university may substitute the following courses:

Advanced math class **FOR**
MAT-716 Industrial Math II

ENG-105 Composition I **AND** ENG-108 Comp. II: Technical Writing
**OR**
ENG-106 Composition **FOR**
Communication electives

---

### Automation and Instrumentation Technologies

**Industrial Technologies**
101 Jones Hall
319-398-4983
www.kirkwood.edu/industrialtech

**Entry time**
Fall

**Award**
Associate of Applied Science degree
2 years (4 semesters, 1 summer),

**Certification**
OSHA 10-General Industry; 50+ High Voltage Arc Flash; Residential Voltage Arc Flash; Rigging, Lifting and Cribbing; JSEA-Job Safety and Environmental Analysis; Adult First Aid with CPR; Forklift Class 1, 3, 4, 5, 7; National Career Readiness Certificate; Snap-On Torque Certification; ISA CST Associate Recognition.

The Automation and Instrumentation Technologies program prepares students for a broad range of careers in the industrial automation and process control sector of industry using industry-guided curriculum combined with practical hands-on labs.

Graduates of this program will be exposed to and have experience with a broad, yet industry-specific, range of technologies and processes that will ensure they are well-rounded technically and will have the foundational knowledge and versatile skill set necessary to continue to learn and succeed in industry today.

**Career opportunities:** industrial robotics; factory automation; electro-mechanical; technicians; industrial equipment sales.

### Degree Requirements

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELE-233 Electrical Safety and Shop Methods</td>
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</tr>
<tr>
<td>ELE-235 Electrical Theory, Measurement and Circuits</td>
<td>3</td>
</tr>
<tr>
<td>ELE-238 AC, Magnetism, Transformers and Relays</td>
<td>1</td>
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<tr>
<td>MAT-230 Maintenance Math I</td>
<td>2</td>
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<tr>
<td>MAT-233 Maintenance Math II</td>
<td>2</td>
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<tr>
<td>IND-156 Microcomputers for the Trades</td>
<td>2</td>
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<tr>
<td>IND-167 Torqueing and Tensioning</td>
<td>1</td>
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<tr>
<td>ATR-300 Mechanical Drive Systems I</td>
<td>2</td>
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<tr>
<td>ATR-302 Mechanical Drive Systems II</td>
<td>1</td>
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**Second Semester (Spring)**

<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>PHY-180 Applied Physics I <strong>OR</strong></td>
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</tr>
<tr>
<td>PHY-120 Introductory Physics</td>
<td>2</td>
</tr>
<tr>
<td>ELT-146 National Electrical Code and Electrical Wiring</td>
<td>5</td>
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</tbody>
</table>
Automotive Collision Repair

Industrial Technologies
101 Jones Hall
319-398-4983
www.kirkwood.edu/industrialtech

Entry time
Fall

Award
Diploma
1 year (2 semesters, 1 summer)

Industry endorsements earned
National Career Readiness Certificate.

Automotive Collision Repair teaches students the theory and practices of metal forming and shaping; body fillers, frame straightening and repair, uni-body straightening and repairs; refinishing procedures; paints and paint chemistry; and equipment use and care. Cost estimating and customer relations skills are also emphasized. A majority of class time is devoted to practical laboratory experience in the college’s Auto Collision Repair Center. A tool set is required for this program.

Career opportunities: body shop technician; auto garage or repair service technician; auto/truck dealership technician; tool sales company representative; equipment/material sales representative; insurance claims adjuster

For gainful employment information, including graduation rates, the median debt of students who completed the program and other information, visit www.kirkwood.edu/gainfulemployment.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CRR-121</td>
<td>Intro to Metalworking &amp; Refinishing I</td>
<td>3</td>
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<tr>
<td>CRR-122</td>
<td>Intro to Metalworking &amp; Refinishing II</td>
<td>3</td>
</tr>
<tr>
<td>CRR-820</td>
<td>Metalworking and Refinishing Practices</td>
<td>3</td>
</tr>
<tr>
<td>CRR-830</td>
<td>Metalworking and Refinishing I</td>
<td>3</td>
</tr>
<tr>
<td>MAT-715</td>
<td>Industrial Math I</td>
<td>3</td>
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<tr>
<td>WEL-333</td>
<td>Auto Collision Welding</td>
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<tr>
<td>AUT-603</td>
<td>Basic Automotive Electricity</td>
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<tr>
<td>CRR-342</td>
<td>Metalworking II</td>
<td>4</td>
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<tr>
<td>CRR-344</td>
<td>Metalworking III</td>
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<tr>
<td>CRR-833</td>
<td>Refinishing II</td>
<td>3</td>
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<td>CRR-837</td>
<td>Refinishing III</td>
<td>3</td>
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<tr>
<td>CRR-545</td>
<td>Body Straightening and Painting</td>
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<td>COM-723</td>
<td>Workplace Communications</td>
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</table>

Total program credit hours

76

Automotive Collision Repair tool requirements
Students in the Auto Collision Repair program are required to have a tool set for lab activities. Instructors provide students with a list of minimum requirements. The cost of tools and tool box is approximately $6,100 and payment plans can be arranged directly with the financial aid office.


Automotive Technology

Industrial Technologies
101 Jones Hall
319-398-4983
www.kirkwood.edu/industrialtech

Entry time
Fall

Award
Associate of Applied Science degree
2 years (4 semesters, 1 summer)

Industry endorsements earned
OSHA 10-General Industry; Adult First Aid with CPR; Residential Voltage Arc Flash; National Career Readiness certificate. This program also requires the graduating student to pass at least two of eight possible ASE certification tests.

The Automotive Technology program provides entry-level skills and knowledge for students who want to work in the automotive technology field. The curriculum emphasizes automotive electronics and features courses in body electrical, engine electrical and computerized fuel delivery systems. Our program is MasterTech-certified by the National Automotive Technicians Education Foundation (NATEF), and our instructors are certified Master Technicians by the National Institute of Automotive Services Excellence (ASE). Kirkwood is proud to be designated as one of only 40 Toyota T-TEN (Technician Training and Education Network) schools in the nation and is the only such school in Iowa. Kirkwood is an authorized Snap-On Certified Training Center. After you complete the Snap-On Diagnostic products training and pass the rigorous test, you are considered a power user of Snap-On diagnostic tools, with an efficiency of 90-100 percent. Achieve master status (top 10 percent nationwide) and be one of the most sought after technicians in the field.

Career opportunities: auto dealerships; franchised auto centers; independent repair facilities; specialty service shops; auto sales and support; fleet maintenance.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>First Semester (Fall)</td>
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<tr>
<td>AUT-104</td>
<td>Introduction to Automotive Technology</td>
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<td>AUT-611</td>
<td>Automotive Electricity</td>
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<tr>
<td>AUT-655</td>
<td>Automotive Advanced Electricity</td>
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<tr>
<td>AUT-888</td>
<td>Technical Lab I</td>
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<td>MAT-715</td>
<td>Industrial Math I</td>
<td>3</td>
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<tr>
<td>Second Semester (Spring)</td>
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<tr>
<td>AUT-821</td>
<td>Computerized Engine Controls I</td>
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</tr>
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<td>AUT-822</td>
<td>Computerized Engine Controls II</td>
<td>5</td>
</tr>
<tr>
<td>AUT-889</td>
<td>Technical Lab II</td>
<td>4</td>
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<tr>
<td>Summer Term</td>
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<tr>
<td>AUT-704</td>
<td>Automotive Heating &amp; Air Conditioning</td>
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<td>AUT-932</td>
<td>Internship</td>
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<td>WEL-270</td>
<td>Automotive Welding Principles</td>
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<td>AUT-205</td>
<td>Automotive Automatic Transmissions &amp; Transaxles</td>
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<td>AUT-304</td>
<td>Automotive Manual Drive Train and Axles</td>
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<td>AUT-505</td>
<td>Automotive Brake Systems</td>
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<td>Communications Elective*</td>
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<td>Fourth Semester (Spring)</td>
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<tr>
<td>AUT-165</td>
<td>Automotive Engine Repair</td>
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<tr>
<td>AUT-404</td>
<td>Automotive Suspension &amp; Steering</td>
<td>4</td>
</tr>
<tr>
<td>AUT-621</td>
<td>Hybrid Electric Vehicle Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
<td>3</td>
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<td>Humanities or History/Culture</td>
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<td>Total program credit hours</td>
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<td>Optional</td>
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<td>AUT-928</td>
<td>Independent Study</td>
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<tr>
<td>AUT-924</td>
<td>Honors Project</td>
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</table>
| Tool Requirements: Students in the Auto Technology program are required to have a tool set for lab activities. Instructors provide students with a list of minimum requirements. The cost of tools and toolbox is approximately $6,700 and payment plans can be arranged with the financial aid office.

*Students planning to transfer to a four-year college or university should consider substituting some or all of the following courses into the curriculum:

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ENG-105</td>
<td>Composition 1 AND</td>
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</tr>
<tr>
<td>ENG-108</td>
<td>Comp II: Technical Writing OR</td>
<td></td>
</tr>
<tr>
<td>ENG-106</td>
<td>Composition</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Communications Electives</td>
<td></td>
</tr>
</tbody>
</table>

Baking and Pastry Arts

Hospitability Arts
The Hotel at Kirkwood Center
319-848-8770
www.kirkwood.edu/hospitality

Entry time
Fall or Spring
Award
Diploma
1 year (2 semesters)

Industry credential earned: National Restaurant Association’s Food Protection Manager Certificate

Get creative with a Bakery diploma. It is designed to prepare students for entry-level bakery employment. Students prepare for their careers through practical experience in preparation of baked goods for The Class Act Restaurant and conference center at The Hotel at Kirkwood Center. Classes are taught in the learning laboratory at The Hotel at Kirkwood Center. Some of the food you make will be served to the guests at The Hotel. Students are required to purchase professional uniforms and tools, to use when in labs or in the bakery.

Career opportunities: bakery worker; baker; cake decorator; pastry chef; baker’s assistant.

For gainful employment information, including graduation rates, the median debt of students who completed the program and other information, visit www.kirkwood.edu/gainfulemployment.

Required Courses

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>HCM-100</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>HCM-117</td>
<td>Bakery Basics</td>
<td>3</td>
</tr>
<tr>
<td>HCM-122</td>
<td>International Breads</td>
<td>3</td>
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<tr>
<td>HCM-123</td>
<td>International Pastries</td>
<td>3</td>
</tr>
<tr>
<td>HCM-125</td>
<td>Basic Cake Decorating</td>
<td>1</td>
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<tr>
<td>HCM-126</td>
<td>Science of Baking</td>
<td>2</td>
</tr>
<tr>
<td>HCM-190</td>
<td>Bakery Essentials</td>
<td>1</td>
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<tr>
<td>HCM-260</td>
<td>Hospitality Math</td>
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</table>

First Semester

18

Second Semester

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>COM-723</td>
<td>Workplace Communication OR</td>
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<tr>
<td>ENG-105</td>
<td>Composition I</td>
<td></td>
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<tr>
<td>HCM-127</td>
<td>Advanced Cake Decorating</td>
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<td>HCM-256</td>
<td>Cost Control and Merchandising</td>
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<td>HCM-295</td>
<td>Professional Production</td>
<td>4</td>
</tr>
<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
<td>3</td>
</tr>
<tr>
<td>MGT-300</td>
<td>Introduction to Entrepreneurship</td>
<td>3</td>
</tr>
</tbody>
</table>

Introduction to Psychology Bakery electives

18

Total program credit hours 36

Biotechnology

Math/Science
1184 Linn Hall
319-398-5516
www.kirkwood.edu/mathscience

Entry time
Fall or Spring

Award
Associate of Applied Science degree
2 years (4 semesters) Diploma
1 year (2 semesters, 1 summer) Certificate
1 semester

From designing plants that produce better crops to finding cures to disease, biotechnology has made a mark on modern life. Most seldom realize nearly everything in our lives, including the food we eat, the clothes we wear and the various products we use every day, is touched in some way by biotechnology.

Students in Kirkwood’s Biotechnology program first learn to operate and maintain lab equipment and adhere to federal guidelines. Later in the program, students prepare solutions and reagents; explore microbiology, cell biology, immunology, and genetic engineering and molecule biology; isolate and characterize proteins; and perform chemical assays.

Career opportunities: animal technician; lab assistant; lab-based manufacturing/production technician; lab technician; manufacturing technician; quality control operator; research assistant; research technician; science technician.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIO-190</td>
<td>Introductory Biotechnology OR</td>
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</tr>
<tr>
<td>EGT-440</td>
<td>PLTW - Biotechnical Engineering OR</td>
<td></td>
</tr>
<tr>
<td>EGR-440</td>
<td>PLTW - Biotechnical Engineering</td>
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<tr>
<td>BIO-400</td>
<td>Lab Methodology</td>
<td>3</td>
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<tr>
<td>CHM-110</td>
<td>Introduction to Chemistry</td>
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<tr>
<td>CHM-111</td>
<td>Introduction to Chemistry Lab</td>
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<td>ENG-105</td>
<td>Composition I</td>
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<tr>
<td>MAT-120</td>
<td>College Algebra* OR</td>
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<tr>
<td>MAT-138</td>
<td>College Algebra with Limits*</td>
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First Semester (Fall)

Second Semester (Spring)

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<tr>
<td>BIO-112</td>
<td>General Biology I</td>
<td>4</td>
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<tr>
<td>CHM-132</td>
<td>Introduction to Organic and Biochemistry</td>
<td>4</td>
</tr>
<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
<td>3</td>
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<tr>
<td>ENG-108</td>
<td>Composition II: Technical Writing</td>
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</tr>
</tbody>
</table>

14
Career Programs

Third Semester (Fall)
- BIO-186 Microbiology 4
- BIO-410 Molecular Biology Techniques I 4
- BIO-430 Molecular Genetics 3
- MAT-157 Statistics* 4

Fourth Semester (Spring)
- BIO-420 Molecular Biology Techniques II 4
- BIO-450 Basic Bioinformatics 3
- MGT-145 Human Relations in Management 3
- PHI-105 Introduction to Ethics 3
- SPC-101 Fundamentals of Oral Communication 3

Fifth Semester (Summer)
- BIO-249 Biotechnology Internship 3

Total program credit hours 64

Biotechnology Diploma Option

<table>
<thead>
<tr>
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<td>BIO-190</td>
<td>Introductory Biotechnology OR</td>
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</tr>
<tr>
<td>EGT-440</td>
<td>PLTW - Biotechnical Engineering OR</td>
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<tr>
<td>EGR-440</td>
<td>PLTW - Biotechnical Engineering</td>
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</tr>
<tr>
<td>BI-112</td>
<td>General Biology I</td>
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Second Semester
- CHM-132 Introduction to Organic and Biochemistry 4
- BIO-430 Molecular Genetics 3
- MAT-157 Statistics* 4
- BIO-410 Molecular Biology Techniques I 4

Third Semester
- BIO-186 Microbiology 4
- BIO-420 Molecular Biology Techniques II 4
- BIO-450 Basic Bioinformatics 3

Total program credit hours 14

Biotechnology Certificate Option

<table>
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<td>Lab Methodology</td>
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<tr>
<td>BIO-410</td>
<td>Molecular Biology Techniques I</td>
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<tr>
<td>BIO-420</td>
<td>Molecular Biology Techniques II</td>
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</tr>
<tr>
<td>BIO-450</td>
<td>Basic Bioinformatics</td>
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</table>

Second Semester
- ACC-152 Financial Accounting 4
- BUS-101 Orientation to Business 1
- BUS-102 Introduction to Business 3
- ENG-105 Composition I 3
- MGT-145 Human Relations in Management 3
- PSY-111 Introduction to Psychology 1

Total program credit hours 14

*Your math placement score may require preparatory math courses.

NOTE: If you already taken science courses at Kirkwood or another institution, you may be able to substitute or waive some of the required courses in the curriculum. Please check with your advisor.

Business Administration: Accounting

Business & Information Technology
203 Nielsen Hall
319-398-5416
www.kirkwood.edu/businessdept

Entry time
Fall

Award
Associate of Applied Science degree
2 years (5 semesters)

Accreditation
This program is accredited by ACBSP (Association of Collegiate Business Schools and Programs). ACBSP is the leading specialized accreditation association for business education supporting, celebrating and rewarding teaching excellence.

Kirkwood Community College offers several options for students interested in accounting careers. This program provides students with the background they need to enter entry-level positions in general accounting, cost accounting, tax credit or other specialized areas of financial accounting and financial reporting.

Career opportunities: accounting clerk, cost accounting, general accounting, office manager, payroll clerk.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>ACC-152</td>
<td>Financial Accounting</td>
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<tr>
<td>BUS-101</td>
<td>Orientation to Business Professionalism</td>
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<tr>
<td>BUS-102</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ENG-105</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
<td>3</td>
</tr>
<tr>
<td>PSY-111</td>
<td>Introduction to Psychology</td>
<td>1</td>
</tr>
</tbody>
</table>

Second Semester
- ACC-156 Managerial Accounting 4
- BUS-192 Professionalism Business 1
- Competition
- CSC-110 Introduction to Computers 3

---------------------------------------------------------------------------------------------------------
Career Programs

ENG-108  Composition II: Technical Writing  3
OR
ENG-106  Composition II
SPC-112  Public Speaking  3

Third Semester
ECN-130  Principles of Microeconomics  3
MAT-157  Statistics  4

Fourth Semester
ACC-222  Cost Accounting*  4
ACC-231  Intermediate Accounting I*  4
ACC-265  Income Tax Accounting*  4
ACC-313  Accounting Applications  4

Fifth Semester
ACC-232  Intermediate Accounting II**  4
ACC-362  Accounting Spreadsheets  4
ACC-491  Accounting Capstone**  3
-------  Humanities Elective  3

Total program credit hours  65

Optional Courses
ACC-949  Special Topics  1
ACC-200  Professionalism: Accounting Club  1
ACC-191  Financial Analysis  3

°Your COMPASS writing score will determine if you need to take prerequisite courses.

°Your COMPASS math score will determine if you need to take prerequisite courses.

*Courses are offered only in the fall semester.

**Courses are offered only in the spring semester.

Graduation Requirements
In order to graduate from the Accounting program, students must have a cumulative GPA of 2.0 or higher in all accounting courses as well as a cumulative program GPA of 2.0 or higher.

Business Administration: Financial Services

Business & Information Technology
203 Nielsen Hall
319-398-5416
www.kirkwood.edu/businessdept

Entry time
Fall, Spring, Summer

Award
Associate of Applied Science degree
2 years (5 semesters)

Accreditation
This program is accredited by ACBSP (Association of Collegiate Business Schools and Programs). ACBSP is the leading specialized accreditation association for business education supporting, celebrating and rewarding teaching excellence.

The Financial Services program is designed for students seeking careers with financial institutions and for those already in financial institutions wishing to attain advanced positions. This program provides an internship opportunity to give students real-world experience.

Career opportunities: personal banker; management trainee; credit analyst; customer service representative; financial advisor; trust representative; loan officer; financial analyst; insurance representative.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BUS-101</td>
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<tr>
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<td>Professionalism</td>
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<td>BUS-102</td>
<td>Introduction to Business</td>
<td>3</td>
</tr>
<tr>
<td>ENG-105</td>
<td>Composition I°</td>
<td>3</td>
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<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
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<tr>
<td>PSY-111</td>
<td>Introduction to Psychology</td>
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<tr>
<td>ADM-133</td>
<td>Business Math &amp; Calculators°</td>
<td>3</td>
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<tr>
<td></td>
<td></td>
<td>13</td>
</tr>
<tr>
<td>BUS-192</td>
<td>Professionalism Business</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Competition</td>
<td></td>
</tr>
<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>MGT-101</td>
<td>Principles of Management</td>
<td>3</td>
</tr>
<tr>
<td>ENG-108</td>
<td>Composition II:Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>
| OR
| ENG-106       | Composition II                                    |              |
| MKT-140       | Principles of Selling OR                          | 3            |
| SPC-101       | Fundamentals of Oral Communications OR             |              |
| SPC-112       | Public Speaking                                    |              |
|               |                                                   | 13           |
| ACC-152       | Financial Accounting OR                           | 4            |
| ACC-120       | Survey of Accounting                              |              |
| ECN-130       | Principles of Microeconomics OR                    | 3            |
| ECN-120       | Principles of Macroeconomics                       | 3            |
|               | Humanities Elective                                |              |
|               |                                                   | 10           |
| ACC-156       | Managerial Accounting                             | 4            |

<table>
<thead>
<tr>
<th>First Semester</th>
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</thead>
<tbody>
<tr>
<td>BUS-101</td>
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<tr>
<td>BUS-102</td>
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<tr>
<td>ENG-105</td>
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<tr>
<td>MGT-145</td>
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<td>PSY-111</td>
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<td>ADM-133</td>
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<td></td>
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<tr>
<td>BUS-192</td>
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<td></td>
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<tr>
<td>CSC-110</td>
</tr>
<tr>
<td>MGT-101</td>
</tr>
<tr>
<td>ENG-108</td>
</tr>
</tbody>
</table>
| OR
| ENG-106       | Composition II                                    |              |
| MKT-140       | Principles of Selling OR                          | 3            |
| SPC-101       | Fundamentals of Oral Communications OR             |              |
| SPC-112       | Public Speaking                                    |              |
|               |                                                   | 13           |
| ACC-152       | Financial Accounting OR                           | 4            |
| ACC-120       | Survey of Accounting                              |              |
| ECN-130       | Principles of Microeconomics OR                    | 3            |
| ECN-120       | Principles of Macroeconomics                       | 3            |
|               | Humanities Elective                                |              |
|               |                                                   | 10           |
| ACC-156       | Managerial Accounting                             | 4            |
ECN-120 Principles of Macroeconomics OR 3  
ECN-130 Principles of Microeconomics  
FIN-101 Principles of Banking* 3  
FIN-121 Personal Finance* 3  
------- Program Electives 3

Fifth Semester
BUS-185 Business Law 3  
BUS-932 Internship 3  
FIN-110 Money and Banking** 3  
FIN-130 Principles of Finance** 3  
MKT-180 Customer Service Strategies 1

Total program credit hours 65

Program Electives:
ACC-313 Accounting Applications 4  
ACC-362 Accounting Spreadsheets 4  
BUS-192 Business Professionalism: Competition 1  
MGT-130 Principles of Supervision 3  
MGT-139 Effective Team Building for Managers 1  
MGT-140 Time Management in the Workplace 1  
MGT-300 Introduction to Entrepreneurship 3  
MGT-205 Introduction to Global Trade 3  
MGT-206 Global Business Skills 3  
MKT-110 Principles of Marketing 3  
MKT-130 Social Media in Business 3

Your COMPASS writing score will determine if you need to take prerequisite courses.

Your COMPASS math score will determine if you need to take prerequisite classes.

*Courses are offered only in the fall semester.

**Courses are offered only in the spring semester.

Business Administration: Management  
Business & Information Technology  
203 Nielsen Hall  
319-398-5416  
www.kirkwood.edu/businessdept

Entry time  
Fall, Spring, Summer

Award  
Associate of Applied Science degree  
2 years (5 semesters)

Certificate options (See advisor for information)

Accreditation  
This program is accredited by ACBSP (Association of Colle-
giate Business Schools and Programs). ACBSP is the lead-
ing specialized accreditation association for business edu-
cation supporting, celebrating and rewarding teaching ex-
cellence.

The Management program provides an extensive selection of introductory, advanced, general and technical manage-
ment courses. The degree is designed for someone who would like to develop management skills for career ad-
vancement.

This program offers many management and general elec-
tives to provide students the opportunity to take courses that fit their specific needs. Certificate options are available for students who want to specialize in human resources, project management, entrepreneurship, social media, global perspectives, technical accounting, retail marketing, and sales.

Students may select to complete the entire degree online or combine the online courses with traditional face-to-face classes. Many options are available to provide flexibility and choices for students. Students should work with their advisor to develop a solid plan that best meets their education goals.

Career opportunities: front-line to middle-level manage-
ment; advancement into supervisory capacity; small busi-
ness owner.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BUS-101</td>
<td>Orientation to Business Professionalism</td>
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<td>BUS-102</td>
<td>Introduction to Business</td>
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<tr>
<td>ENG-105</td>
<td>Composition I</td>
<td>3</td>
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<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
<td>3</td>
</tr>
<tr>
<td>OR</td>
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<tr>
<td>PSY-111</td>
<td>Introduction to Psychology</td>
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<tr>
<td>MAT-102</td>
<td>Intermediate Algebra</td>
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First Semester

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<th>Course Number</th>
<th>Course Title</th>
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<tr>
<td>BUS-192</td>
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<td>Introduction to Computers</td>
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<tr>
<td>ENG-108</td>
<td>Composition II: Technical Writing</td>
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<td>OR</td>
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<td>ENG-106</td>
<td>Composition II</td>
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<td>SPC-101</td>
<td>Fundamentals of Oral Communication</td>
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<tr>
<td>OR</td>
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<td>SPC-112</td>
<td>Public Speaking</td>
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<tr>
<td>MKT-140</td>
<td>Principles of Selling</td>
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<td>MKT-101</td>
<td>Principles of Management</td>
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Second Semester

<table>
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<td>Human Resource Management</td>
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<td>MGT-121</td>
<td>Project Management Basics</td>
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<tr>
<td>MKT-110</td>
<td>Principles of Marketing</td>
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Third Semester

<table>
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<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MGT-130</td>
<td>Principles of Supervision</td>
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<tr>
<td>MGT-139</td>
<td>Effective Team Building for Managers</td>
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</tr>
<tr>
<td>MGT-140</td>
<td>Time Management in the Workplace</td>
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<tr>
<td>MGT-300</td>
<td>Introduction to Entrepreneurship</td>
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</tr>
<tr>
<td>MGT-205</td>
<td>Introduction to Global Trade</td>
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<tr>
<td>MGT-206</td>
<td>Global Business Skills</td>
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<tr>
<td>MKT-110</td>
<td>Principles of Marketing</td>
<td>3</td>
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<tr>
<td>MKT-130</td>
<td>Social Media in Business</td>
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</table>
Fourth Semester

<table>
<thead>
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<th>Course Title</th>
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<td>ACC-120</td>
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<td>MGT-130</td>
<td>Principles of Supervision</td>
<td>3</td>
</tr>
<tr>
<td>MGT-300</td>
<td>Introduction to Entrepreneurship</td>
<td>3</td>
</tr>
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<td>Humanities Elective</td>
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Fifth Semester

<table>
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<th>Course Title</th>
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<tbody>
<tr>
<td>ECN-120</td>
<td>Principles of Macroeconomics OR</td>
<td>3</td>
</tr>
<tr>
<td>ECN-130</td>
<td>Principles of Microeconomics</td>
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<tr>
<td>MGT-301</td>
<td>Management Capstone</td>
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<td>Management Electives</td>
<td>9</td>
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</table>

Total program credit hours 64

Electives

Management elective credit may be used to earn a certificate. See your advisor for online availability.

<table>
<thead>
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<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
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<td>ACC-156</td>
<td>Managerial Accounting*</td>
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</tr>
<tr>
<td>ACC-313</td>
<td>Accounting Applications*</td>
<td>3</td>
</tr>
<tr>
<td>ACC-362</td>
<td>Accounting Spreadsheets*</td>
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<td>BCA-205</td>
<td>Database/Spreadsheets</td>
<td>3</td>
</tr>
<tr>
<td>BUS-185</td>
<td>Business Law I</td>
<td>3</td>
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<tr>
<td>BUS-280</td>
<td>Fundamentals of Lean Process Improvement</td>
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<tr>
<td>BUS-932</td>
<td>Internship</td>
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<tr>
<td>ECN-120</td>
<td>Principles of Macroeconomics**</td>
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<tr>
<td>FIN-121</td>
<td>Personal Finance</td>
<td>3</td>
</tr>
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<td>MGT-124</td>
<td>Project Management Tools*</td>
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<tr>
<td>MGT-137</td>
<td>Developing Leadership Skills</td>
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<tr>
<td>MGT-139</td>
<td>Effective Team Building for Managers</td>
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<td>Time Management in the Workplace</td>
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<td>MGT-155</td>
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<tr>
<td>MGT-171</td>
<td>Human Resource Strategies and Tools*</td>
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<td>MGT-205</td>
<td>Introduction to Global Trade</td>
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<td>MGT-206</td>
<td>Global Business Skills</td>
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<td>MGT-305</td>
<td>Business Plans for Entrepreneurs*</td>
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<td>MKT-130</td>
<td>Social Media in Business*</td>
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<td>MKT-135</td>
<td>Content Marketing*</td>
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<td>MKT-190</td>
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Optional Courses

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<td>BUS-949</td>
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Human Resource Certificate Requirements

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<tr>
<td>MGT-130</td>
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<td>MGT-170</td>
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<td>Introduction to Entrepreneurship</td>
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Total program credit hours 15

Entrepreneurship Certificate Requirements

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Second Semester

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Total program credit hours 18

Project Management Certificate Requirements

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<td>MGT-121</td>
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Second Semester

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Third Semester

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Total program credit hours 12

Optional Courses

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<tr>
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Global Perspectives in Business Certificate Requirements

<table>
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<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
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<td>Credit Hours</td>
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<tr>
<td>----------------</td>
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<td>--------------</td>
</tr>
<tr>
<td>MGT-205</td>
<td>Introduction to Global Trade</td>
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<td>MGT-206</td>
<td>Global Business Skills</td>
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<td>MGT-190</td>
<td>International Marketing</td>
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<td>Global Perspectives Elective</td>
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</tbody>
</table>
Marketing promotes profitable exchanges in goods and services across all sectors—from solo entrepreneurs to small businesses, from global corporations to non-profits. Effective marketing allows essentially every kind of organization to grow and prosper allowing vast employment opportunities. Its the marketing professionals job to create, manage, and enhance brands. To some this is a scary time to be in marketing, as the very foundation of how we communicate with customers is being disrupted by the Internet and social media. Today they're just a few clicks away on your Facebook page, Twitter profile or Instagram feed. Marketing can even lead to better communities, locally and across the globe. These fields need professionals with a strong initiative and spirit of competition. Successful students also exhibit strong entrepreneurial, problem solving and interpersonal skills.

Through this program, students have the opportunity to earn certificates in Retail, Sales, and Social Media Marketing.

**Career opportunities:** buyer; sales; public relations; media planning, sales strategy; marketing research, and more

---

### Business Administration: Marketing

#### Business & Information Technology

203 Nielsen Hall  
319-398-5416  
www.kirkwood.edu/businessdept

#### Entry time

Fall, Spring, Summer

#### Award

Associate of Applied Science degree  
2 years (5 semesters)

#### Accreditation

This program is accredited by ACBSP (Association of Collegiate Business Schools and Programs). ACBSP is the leading specialized accreditation association for business education supporting, celebrating and rewarding teaching excellence.

Marketing promotes profitable exchanges in goods and services across all sectors—from solo entrepreneurs to small businesses, from global corporations to non-profits. Effective marketing allows essentially every kind of organization to grow and prosper allowing vast employment opportunities. Its the marketing professionals job to create, manage, and enhance brands. To some this is a scary time to be in marketing, as the very foundation of how we communicate with customers is being disrupted by the Internet and social media. Today they're just a few clicks away on your Facebook page, Twitter profile or Instagram feed. Marketing can even lead to better communities, locally and across the globe. These fields need professionals with a strong initiative and spirit of competition. Successful students also exhibit strong entrepreneurial, problem solving and interpersonal skills.

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### Technical Accounting Certificate Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ACC-152</td>
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</tr>
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<td>ACC-111</td>
<td>Introduction to Accounting</td>
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<tr>
<td>CSC-110</td>
<td>Introduction to Computers OR</td>
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<td>BCA-205</td>
<td>Database/Spreadsheets</td>
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### Global Perspectives Electives

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<tr>
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<tbody>
<tr>
<td>CLS-151</td>
<td>Understanding Cultures: Latin America</td>
<td>3</td>
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<tr>
<td>FLC-142</td>
<td>Elementary Chinese II</td>
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<td>FLF-142</td>
<td>Elementary French II</td>
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<td>FLG-142</td>
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<td>FLS-142</td>
<td>Elementary Spanish II</td>
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<td>GLS-120</td>
<td>Education Experience Abroad</td>
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<tr>
<td>MGT-300</td>
<td>Introduction to Entrepreneurship</td>
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<tr>
<td>REL-101</td>
<td>Survey of World Religions</td>
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---

### Total program credit hours

15

---

Your COMPASS writing score will determine if you need to take prerequisite courses.

Your COMPASS math score will determine if you need to take prerequisite classes.

*Prerequisite required.  See EagleNet, course catalog at www.kirkwood.edu/catalog or your advisor.

**Elective may not be used for Human Resource Certificate Option.

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### Degree Requirements

<table>
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<tr>
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<tr>
<td>ENG-105</td>
<td>Composition I</td>
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<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
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<tr>
<td>PSY-111</td>
<td>Introduction to Psychology</td>
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<tr>
<td>ADM-133</td>
<td>Business Math &amp; Calculators</td>
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### First Semester

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<td>MGT-145</td>
<td>Human Relations in Management</td>
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<td>PSY-111</td>
<td>Introduction to Psychology</td>
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<td>ADM-133</td>
<td>Business Math &amp; Calculators</td>
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### Second Semester

<table>
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<td>Introduction to Computers</td>
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<td>ENG-108</td>
<td>Composition II Technical Writing</td>
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<td>ENG-106</td>
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<td>Principles of Marketing</td>
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<td>Principles of Advertising</td>
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<td>MKT-180</td>
<td>Customer Service Strategies</td>
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<td>ACC-120</td>
<td>Survey of Accounting OR</td>
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Career Programs

Fifth Semester

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<td>ECN-120</td>
<td>Principles of Macroeconomics OR</td>
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<td>Principles of Microeconomics</td>
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<td>BUS-290</td>
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Marketing Elective 3

Total program credit hours 12

Social Media Marketing Certificate

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<td>Fundamentals of Web Programming</td>
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Total program credit hours 6

Optional Courses

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Retail Marketing Certificate Requirements

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<td>Principles of Selling</td>
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<tr>
<td>MKT-150</td>
<td>Principles of Advertising</td>
<td>3</td>
</tr>
<tr>
<td>MKT-160</td>
<td>Principles of Retailing</td>
<td>3</td>
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<td>Customer Services Strategies</td>
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Total program credit hours 14

Sales Certificate Requirements

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<td>Internship</td>
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<tr>
<td>MGT-140</td>
<td>Time Management in the Workplace</td>
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</table>

Total program credit hours 15

1. Your COMPASS writing score will determine if you need to take prerequisite courses.
2. Your COMPASS math score will determine if you need to take prerequisite courses.

Carpentry

Industrial Technologies
101 Jones Hall
319-398-4983
www.kirkwood.edu/industrialtech

Entry time
Fall

Award
Diploma
1 year (2 semesters)

Industry endorsements earned
OSHA 10 Construction; Adult First Aid with CPR.

The Carpentry program prepares students to enter the skilled building trades. Students are given a hands-on intensive introduction to the skills used by carpenters. The classroom experience combines lecture and lab activities that cover all aspects of a carpenter's job. Students may choose to pursue an Associate of Applied Science degree in the Construction Management program upon completion of the Carpentry program.

Career opportunities: residential carpenter; commercial carpenter; gateway to apprenticeship program.

For gainful employment information, including graduation rates, the median debt of students who completed the program and other information, visit www.kirkwood.edu/gainfulemployment.
### Degree Requirements

<table>
<thead>
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<td>CON-116</td>
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<td>CON-273</td>
<td>Carpentry Lab I</td>
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<td>CON-311</td>
<td>Building Construction Systems I</td>
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<td>Industrial Math II</td>
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**First Semester (Fall)**

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<tr>
<td>DRF-141</td>
<td>Engineering Drawings</td>
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<td>DRF-142</td>
<td>Engineering Design I OR</td>
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<tr>
<td>EGT-400</td>
<td>PLTW - Introduction to Engineering Design</td>
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<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
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<tr>
<td>MAT-745</td>
<td>Technical Mathematics I</td>
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<td>PHY-190</td>
<td>Physics I</td>
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**Second Semester (Spring)**

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<tr>
<th>Course Number</th>
<th>Course Title</th>
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<tr>
<td>CAD-140</td>
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<td>DRF-143</td>
<td>Engineering Design II</td>
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<tr>
<td>EGT-125</td>
<td>Applied Statics</td>
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<tr>
<td>MAT-746</td>
<td>Technical Mathematics II</td>
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<td>PHY-192</td>
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**Summer Term**

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<td>PSY-111</td>
<td>Introduction to Psychology</td>
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**Third Semester (Fall)**

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<td>Geometric Dimensioning and Tolerancing</td>
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<tr>
<td>EGT-124</td>
<td>Strength of Materials</td>
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<td>EGT-132</td>
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<td>EGT-146</td>
<td>Hydraulics</td>
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<td>MFG-202</td>
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</table>

#### CAD/Mechanical Engineering Technology

**Industrial Technologies**

101 Jones Hall  
319-398-4983  
www.kirkwood.edu/industrialtech

**Entry time**

Fall

**Award**

Associate of Applied Science degree  
2 years (4 semesters, 1 summer)  
Diploma  
1 year (2 semesters, 1 summer)

**Industry endorsement earned**

National Career Readiness Certificate; AutoDesk/CAD Certificate; AutoDesk/Inventor Certificate

Engineering technicians and provides skills for those already in the field to gain advancement to designer status. Students focus on engineering fundamentals and the means of conveying design intent from drawing layouts and symbols through geometric dimensioning and tolerancing.

Industry-standard CAD software is taught during all four semesters of the program to enhance employment opportunities. Competency in engineering fundamentals is built through courses in statics, strength of materials, kinematics, hydraulics, dynamics and machine design. A student can transfer credits from this program to UNI or William Penn University and work toward a B.S. in manufacturing or industrial technology.

**Career opportunities:** engineering technician; test lab technician; CAD operator/designer; technical writer; mechanical engineering assistant.

The CAD/Mechanical Engineering Technology curriculum prepares students for entry-level positions as mechanical engineers and provides skills for those already in the field to gain advancement to designer status. Students focus on engineering fundamentals and the means of conveying design intent from drawing layouts and symbols through geometric dimensioning and tolerancing.

Industry-standard CAD software is taught during all four semesters of the program to enhance employment opportunities. Competency in engineering fundamentals is built through courses in statics, strength of materials, kinematics, hydraulics, dynamics and machine design. A student can transfer credits from this program to UNI or William Penn University and work toward a B.S. in manufacturing or industrial technology.

**Career opportunities:** engineering technician; test lab technician; CAD operator/designer; technical writer; mechanical engineering assistant.

### Degree Requirements

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<td>Engineering Drawings</td>
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<td>DRF-142</td>
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**Second Semester (Spring)**

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**Summer Term**

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**Third Semester (Fall)**

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<td>CAD-237</td>
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Career Programs

Fourth Semester (Spring)

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Diploma Requirements

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<td>MAT-746</td>
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Summer Term

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<td>PSY-111</td>
<td>Introduction to Psychology</td>
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<td>Communications Elective OR</td>
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<td><strong>Total program credit hours</strong></td>
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*Students planning to transfer to a four-year college or university should consider substituting some or all of the following courses into the CAD/MET curriculum:

- ENG-105 Composition I AND ENG-108 Comp II: Technical Writing OR ENG-106 Composition FOR
- Communications Electives

CNC Machining Technology

Industrial Technologies
101 Jones Hall
319-398-4983
www.kirkwood.edu/industrialtech

Entry time
Fall

Award
Associate of Applied Science degree
2 years (4 semesters, 1 summer)
Diploma
1 year (2 semesters, 1 summer)

Industry endorsement earned
OSHA 10-General Industry; Adult First Aid with CPR; Forklift Class 1,3, 4, 5, 7; National Career Readiness Certificate; NIMS Level 1: CNC Credentials; AutoDesk/AutoCAD Certificate.

Computer Numerical Control (CNC) Machining provides instruction in the manufacturing of precision parts and products. The traditional production machinist role has changed to the type of production machining that requires many set-ups for short runs to meet just-in-time delivery demands of customers. People who enter this field must be flexible in performing operations and must have a basic knowledge of the computer numerical control of machine tools. Program graduates will be able to program, edit, set up, and operate CNC lathes and mills. CNC students study quality control methods known as statistical process control. Special quality control equipment, such as coordinate measuring machines, are taught in this program. An introduction to advanced automated production methods is also included. Students can transfer credits from this program to UNI and work toward a B.A. in Technology Management.

Career opportunities: machinist; mold builder; salesperson; job shop technician; CNC programmer/operator; quality control technician; tool and die maker.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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*Students planning to transfer to a four-year college or university should consider substituting some or all of the following courses into the CAD/MET curriculum:

- ENG-105 Composition I AND ENG-108 Comp II: Technical Writing OR ENG-106 Composition FOR
- Communications Electives

CNC Lathe Operator (NIMS)
MFG-292

CNC Mill Operator (NIMS)
MFG-297 (NIMS)

Machinist Trade Printreading I
MFG-120

Job Planning, Benchwork & Layout (NIMS)
MFG-286

Measurement, Materials & Safety (NIMS)
MFG-259

Turning Operations (Turning Between Centers - NIMS)
MFG-299

Turning Operations (Turning in a Chuck - NIMS)
MFG-324

Milling Machine Operations (NIMS)
MFG-297

Microcomputer Applications OR
IND-155

Introduction to Computers
CSC-110

Machinist Mathematics II
MAT-736

Machine Trade Printreading II
MFG-130

CNC Mill Operator (NIMS) OR
MFG-291

PLTW-Computer Integrated Manufacturing
EGT-450

CNC Lathe Operator (NIMS)
MFG-292

1 year (2 semesters, 1 summer)
MFG-332  CNC Mill Program and Setup (NIMS)  3
MFG-334  CNC Lathe Program and Setup (NIMS)  3
MFG-298  Surface Grinding Operations (NIMS)  2

**Summer Term**

MFG-281  CNC Punch Press Operations (NIMS)  3
MFG-287  Manual Press Brake Operator (NIMS)  3
MFG-339  CNC Press Brake Operator (NIMS)  2
MFG-420  Jig and Fixture Design  2

**Third Semester (Fall)**

MFG-341  CNC Lathe Operations (NIMS)  2
MFG-343  CNC Milling Operations (NIMS)  2
CAD-300  AutoCAD for Applied Engineering  2
CAD-310  Inventor for Applied Engineering  1
MAT-137  Applications of Geometry  1
CAD-237  Geometric Dimensioning and Tolerancing

Communications Elective  3
Humanities or History/Cultures  3
E elective

**Fourth Semester (Spring)**

MFG-283  Laser Cutting Operations  2
MFG-288  Water Jet Operations  2
MFG-317  Automated Production Methods  5
MFG-348  EDM Wire Operations (NIMS)  1
MGT-145  Human Relations in Management

OR
PSY-111  Introduction to Psychology  1
Communications Elective  3

**Total program credit hours**  79

Optional Courses

MFG-924  Honors Project  1
MFG-928  Independent Study  1

Diploma Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
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<td>Machinist Trade Printreading I</td>
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<td>MFG-286</td>
<td>Job Planning, Benchwork &amp; Layout (NIMS)</td>
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<td>MFG-259</td>
<td>Measurement, Materials &amp; Safety (NIMS)</td>
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<td>MFG-299</td>
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<tr>
<td>MFG-324</td>
<td>Turning Operations (Turning in a</td>
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**Second Semester (Spring)**

IND-155  Microcomputer Applications  OR  2
CSC-110  Introduction to Computers  1
MAT-736  Machinist Mathematics II  1
MFG-130  Machine Trade Printreading II  1
MFG-291  CNC Mill Operator (NIMS)  OR  3
EGT-450  PLTW-Computer Integrated Manufacturing

MFG-292  CNC Lathe Operator (NIMS)  3
MFG-332  CNC Mill Program and Setup (NIMS)  3
MFG-334  CNC Lathe Program and Setup (NIMS)  3
MFG-298  Surface Grinding Operations (NIMS)  2

**Summer Term**

MFG-281  CNC Punch Press Operations (NIMS)  3
MFG-287  Manual Press Brake Operator (NIMS)  3
MFG-339  CNC Press Brake Operator (NIMS)  2
MFG-420  Jig and Fixture Design  2

**Total program credit hours**  46

CNC Machining Technology tool requirements

Students in the CNC Machining Technology program are required to have a tool set for lab activities. During the first or second week of classes, a tool vendor will offer products to students at a considerable discount off the list prices. Instructors provide students with a list of minimum tool requirements. The cost of tools is estimated to be around $3,500, and payment plans are arranged directly with manufacturers.

Computer Software Development

Business & Information Technology

203 Nielsen Hall
319-398-5416
www.kirkwood.edu/businessdept

Entry time

Fall

Award

Associate of Applied Science degree

2 years (4 semesters, 1 summer)

Certificates in Java and .NET programming are available.

2 semesters

Those who at times can be both creative and logical, who enjoy working with computers, and especially those who would like to learn how to produce their own solutions for
business and other computing needs, should consider a career in Computer Software Development.

This degree helps graduates enter the growing and well-paid field of computer programming. Students learn various phases of software development including how to design, write, test and document computer programs with a variety of tools, using in-demand languages such as Java, C# and SQL. In addition to learning to program for desktop computers and other devices, students also explore internet programming with technologies such as ASP, JSP, HTML, CSS and JavaScript.

**Career opportunities:** computer programmer; business systems analyst; web designer; operations systems analyst; client/server application developer; internet programmer.

### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td><strong>First Semester</strong></td>
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<tr>
<td>CIS-121</td>
<td>Introduction to Programming Logic</td>
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<td>CIS-207</td>
<td>Fundamentals of Web Programming</td>
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<td>CSC-110</td>
<td>Introduction to Computers</td>
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<tr>
<td>ENG-105</td>
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<td>CIS-172</td>
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<td>CIS-332</td>
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<td>CIS-622</td>
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<td>SPC-101</td>
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<td>ENG-106</td>
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<tr>
<td>CIS-176</td>
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<td>CIS-504</td>
<td>Structured Systems Analysis</td>
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<td>CIS-280</td>
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**Technical Business Electives**

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<td>CIS-334</td>
<td>PHP/Apache/MySQL</td>
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<td>Computer Science</td>
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<tr>
<td>MAT-136</td>
<td>Trigonometry and Analytic Geometry</td>
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<td>MAT-140</td>
<td>Finite Math</td>
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<td>MAT-157</td>
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<td>MAT-165</td>
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<td>BUS-932</td>
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**Optional Courses**

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**Java Programming Certificate Requirements**

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<td>Introduction to Programming Logic</td>
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<tr>
<td><strong>Second Semester</strong></td>
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<tr>
<td>CIS-332</td>
<td>Database and SQL</td>
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<tr>
<td>CIS-172</td>
<td>Java</td>
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<tr>
<td>CIS-176</td>
<td>Java II</td>
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<tr>
<td>CIS-181</td>
<td>Java III</td>
<td>3</td>
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</table>

**Total program credit hours**

65

---

Note: The optional courses are not mandatory but can be used to fulfill the remaining credit hours. Students are encouraged to consult with their academic advisor for guidance.

---

**.NET Programming Certificate Requirements**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td><strong>First Semester</strong></td>
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<tr>
<td>CIS-121</td>
<td>Introduction to Programming Logic</td>
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<td><strong>Second Semester</strong></td>
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<tr>
<td>CIS-332</td>
<td>Database and SQL</td>
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<tr>
<td><strong>Total</strong></td>
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</tbody>
</table>
Career Programs

CIS-622 .NET Programming I 3

Third Semester
CIS-624 .NET Programming II 3

Fourth Semester
CIS-626 .NET Programming III 3

Total program credit hours 15

Your COMPASS writing score will determine if you need to take prerequisite classes.

Your COMPASS math score will determine if you need to take prerequisite classes.

See Degree Audit

Computer Support Specialist

Business & Information Technology
203 Nielsen Hall
319-398-5416
www.kirkwood.edu/businessdept

Entry time
Fall, Spring or Summer

Award
Associate of Applied Science degree
2 years (4 semesters)
Diploma options
1 year (2 semesters or 2 semesters, 1 summer)

Computer support specialists provide technical assistance to users as well as maintain, upgrade, and repair computer systems and networks. Students interested in this field should have an interest in working with people. Specialists constantly interact with customers and fellow employees as they answer questions and give valuable advice. They should also enjoy learning about new technology and be willing to work on both hardware and software systems. Good writing and communications skills are also required.

This degree focuses on a variety of IT skills that include hardware, software, networking and programming, as well as problem-solving and analytical skills. Some specialists may be involved with planning, coordinating and implementing an organization's information security.

Career opportunities: computer support specialists; technical support specialists; help desk technicians.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td></td>
<td>First Semester</td>
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<tr>
<td>CIS-135</td>
<td>Microcomputer Operating Systems</td>
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<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>COM-723</td>
<td>Workplace Communications OR</td>
<td></td>
</tr>
<tr>
<td>ENG-101</td>
<td>Elements of Writing OR</td>
<td></td>
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<tr>
<td>ENG-105</td>
<td>Composition I</td>
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<tr>
<td>MKT-180</td>
<td>Customer Service Strategies</td>
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<td>NET-122</td>
<td>Computer Hardware Basics</td>
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<td>NET-154</td>
<td>Networking Basics</td>
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<tr>
<td>COM-744</td>
<td>Oral Communication in the Workplace OR</td>
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<td>SPC-101</td>
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<tr>
<td>SPC-112</td>
<td>Public Speaking</td>
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<td>MGT-145</td>
<td>Human Relations in Management</td>
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<tr>
<td>NET-137</td>
<td>Advanced PC Concepts</td>
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<td>NET-235</td>
<td>CCNA Cisco 1</td>
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<tr>
<td>NET-785</td>
<td>Fundamentals of Desktop Support</td>
<td>3</td>
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<tr>
<td>NET-850</td>
<td>Special Topics for PC Technicians</td>
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<td>BCA-213</td>
<td>Intermediate Computer Business Applications</td>
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<td>CIS-128</td>
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<td>CIS-207</td>
<td>Fundamentals of Web Programming</td>
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<td>NET-174</td>
<td>LAN Administration</td>
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<tr>
<td>ACC-111</td>
<td>Introduction to Accounting OR</td>
<td>3</td>
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<td>ACC-152</td>
<td>Financial Accounting</td>
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<tr>
<td>BUS-290</td>
<td>Employment Search and Workplace Success</td>
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<tr>
<td>CIS-307</td>
<td>Introduction to Databases OR</td>
<td>3</td>
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<tr>
<td>CIS-332</td>
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<tr>
<td>MGT-121</td>
<td>Project Management Basics</td>
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<td>NET-600</td>
<td>Network Security Basics</td>
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<td>MAT-102</td>
<td>Intermediate Algebra OR</td>
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PC Technician Diploma Requirements

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<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td></td>
<td>First Semester</td>
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<tr>
<td>CIS-135</td>
<td>Microcomputer Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>COM-723</td>
<td>Workplace Communications OR</td>
<td></td>
</tr>
<tr>
<td>ENG-101</td>
<td>Elements of Writing OR</td>
<td></td>
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</tbody>
</table>

79
ENGL-105 Composition I 1
MKT-180 Customer Service Strategies 3
NET-122 Computer Hardware Basics 3
NET-154 Networking Basics 3

Second Semester
MGT-145 Human Relations in Management 3
NET-137 Advanced PC Concepts 3
NET-235 CCNA Cisco 1 3
NET-785 Fundamentals of Desktop Support 3
NET-850 Special Topics for PC Technicians 3
SPC-101 Fundamentals of Oral Communication OR
SPC-112 Public Speaking OR
COM-744 Oral Communication in the Workplace 3

Total diploma program credit hours 34

Your COMPASS writing score will determine if you need to take prerequisite classes.
Your COMPASS math score will determine if you need to take prerequisite classes.

Construction Management
Industrial Technologies
101 Jones Hall
319-398-4983
www.kirkwood.edu/industrialtech

Entry time
Fall

Award
Associate of Applied Science degree
2 years (4 semesters, 1 summer)
Certificate options (See advisor for information)
1 year (2 semesters)

Industry endorsements earned
OSHA 10-Construction; Adult First Aid with CPR; National Career Readiness Certificate. Optional credentials: LEED Green Associate; NCCR Certifications - Construction Technologist and Construction Supervisor.

The Construction Management program provides entry-level skills and knowledge for students who want to pursue one of the many careers available in the construction industry. Classes during the first year emphasize hands-on laboratory experiences in construction skills, architectural drafting and CAD, estimating, and microcomputer applications. The summer session allows students to gain practical experience during a full-time, paid internship in the construction field. Second-year classes emphasize skills and knowledge development in management, scheduling, estimating and legal issues.

Career opportunities: Construction managers and supervisors, building inspectors, project managers, sustainability specialists, material suppliers and cost estimators.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>First Semester (Fall)</td>
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<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>CON-116</td>
<td>Architectural Plans and Specs</td>
<td>2</td>
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<tr>
<td>CON-190</td>
<td>Residential Construction*</td>
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<tr>
<td>EGT-460</td>
<td>PLTW-Civil Engineering and Architecture OR</td>
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<td>EGR-460</td>
<td>PLTW-Civil Engineering and Architecture OR</td>
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<tr>
<td>CON-311</td>
<td>Building Construction Systems I</td>
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<td>CON-410</td>
<td>Construction Modeling</td>
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<tr>
<td>MAT-716</td>
<td>Industrial Math II*+</td>
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<table>
<thead>
<tr>
<th>Second Semester (Spring)</th>
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<tbody>
<tr>
<td>CON-272</td>
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<tr>
<td>CON-313</td>
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<td>CON-322</td>
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<td>COM-723</td>
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<td>CON-932</td>
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<td>GLS-120</td>
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<thead>
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<tr>
<td>CON-134</td>
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<tr>
<td>CON-316</td>
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<tr>
<td>ARC-300</td>
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<td>CON-335</td>
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<td>CON-400</td>
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<td>PHY-120</td>
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<table>
<thead>
<tr>
<th>Fourth Semester (Spring)</th>
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<tbody>
<tr>
<td>CAD-201</td>
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<td>CON-324</td>
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<td>CON-328</td>
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**Career Programs**

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<th>Credit Hours</th>
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<tbody>
<tr>
<td>CON-330</td>
<td>Construction Capstone</td>
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<td>ACC-111</td>
<td>Introduction to Accounting</td>
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</tr>
<tr>
<td>MGT-101</td>
<td>Principles of Management <strong>OR</strong></td>
<td>3</td>
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<tr>
<td>MGT-130</td>
<td>Principles of Supervision</td>
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**Optional Courses**

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<td>CON-924</td>
<td>Honors Project</td>
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<td>CON-928</td>
<td>Independent Study</td>
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**Construction Estimator Certificate Requirements**

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<th>Course Title</th>
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<tbody>
<tr>
<td>First Semester (Fall)</td>
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</tr>
<tr>
<td>CON-116</td>
<td>Architectural Plans and Specs</td>
<td>2</td>
</tr>
<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
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</tr>
<tr>
<td>CON-322</td>
<td>Residential Estimating</td>
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<th>Course Title</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>CON-335</td>
<td>Construction Planning and Scheduling</td>
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<tr>
<td>CON-324</td>
<td>Commercial Estimating</td>
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**Construction Supervision Certificate Requirements**

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<td>First Semester (Fall)</td>
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</tr>
<tr>
<td>CSC-110</td>
<td>Introduction to Computers <strong>OR</strong></td>
<td>2</td>
</tr>
<tr>
<td>IND-155</td>
<td>Microcomputer Applications</td>
<td>3</td>
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<tr>
<td>CON-116</td>
<td>Architectural Plans and Specs</td>
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<tr>
<td>CON-400</td>
<td>Construction Project Management</td>
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<tbody>
<tr>
<td>Second Semester (Spring)</td>
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</tr>
<tr>
<td>CON-335</td>
<td>Construction Planning and Scheduling</td>
<td>2</td>
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<tr>
<td>CON-134</td>
<td>Surveying and Site Layout</td>
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<tr>
<td>MGT-130</td>
<td>Principles of Supervision</td>
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<tr>
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**ACE Industry Certificate Requirements**

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<tr>
<td>First Semester (Fall)</td>
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<tr>
<td>EGT-460</td>
<td>PLTW-Civil Engineering and Architecture <strong>OR</strong></td>
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<td>EGR-460</td>
<td>PLTW-Civil Engineering and Architecture <strong>OR</strong></td>
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<tr>
<td>CON-311</td>
<td>Building Construction Systems 1</td>
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<tr>
<td>CON-116</td>
<td>Architectural Plans and Specs</td>
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<td>Residential Construction</td>
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<tr>
<td><strong>Second Semester (Spring)</strong></td>
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<tr>
<td>CON-272</td>
<td>Commercial Construction</td>
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<tr>
<td>CON-313</td>
<td>Building Construction Systems II</td>
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**Total program credit hours**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</table>
| *Enrollment requires a Pre-Algebra COMPASS score of 40 or above.*
| +Students planning to transfer to a four-year college or university should consider substituting the following course: Advanced Math Class FOR MAT-716 Industrial Math II

**Criminal Justice**

**Social Sciences**

1008 Cedar Hall  
319-398-1241  
www.kirkwood.edu/socialsciences

**Entry time**

Fall, Spring, Summer

**Award**

Associate of Applied Science (4 semesters)  
Associate of Arts Liberal Arts (transfer degree)

The A.A.S. degree opens doors to a possible career in criminal justice including positions in law enforcement and corrections. This two-year degree includes both general education and criminal justice courses.

**Career opportunities:** sheriff, police officer, highway patrol officer, corrections officer

**Degree Requirements**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>CRJ-100</td>
<td>Introduction to Criminal Justice</td>
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<tr>
<td>SOC-110</td>
<td>Introduction to Sociology</td>
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<tr>
<td>ENG-120</td>
<td>College Writing <strong>OR</strong></td>
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<tr>
<td>ENG-105</td>
<td>Composition I <strong>AND</strong></td>
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<tr>
<td>ENG-106</td>
<td>Composition II <strong>OR</strong></td>
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<tr>
<td>ENG-108</td>
<td>Composition II: Technical Writing</td>
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<tr>
<td>SPC-101</td>
<td>Fundamentals of Oral Communication</td>
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<tr>
<td><strong>Total program credit hours</strong></td>
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</tbody>
</table>

| Second Semester |
| CRJ-101       | Ethics in Criminal Justice                | 3            |
| CRJ-130       | Criminal Law                              | 3            |
| SCI-120       | Forensic Science                          | 3            |
| PHI-105       | Introduction to Ethics                    | 3            |
| **Total program credit hours** |                              | **15**       |
Career Programs

Third Semester
CRJ-120  Introduction to Corrections  3
CRJ-133  Constitutional Criminal Procedure  3
CRJ-200  Criminology  3
PHI-111  Basic Reasoning  3
--------  Science Elective  3

Fourth Semester
CRJ-141  Criminal Investigation  3
CRJ-201  Juvenile Delinquency  3
CRJ-202  Cultural Awareness for Criminal Justice  3
CRJ-220  Community-Based Corrections  3
CRJ-232  Community-Oriented Policing and Problem Solving  3

Total program credit hours  62

Degree Requirements
Course Number  Course Title  Credit Hours

First Semester
COM-723  Workplace Communications  OR  3
ENG-105  Composition I*  3
CSC-110  Introduction to Computers  3
HCM-100  Sanitation and Safety  2
HCM-109  Kitchen Essentials  1.5
HCM-138  Food Fundamentals  3
HCM-147  Culinary Techniques  1.5
HCM-260  Hospitality Math  OR  3
MAT-140  Finite Math*  1
HCM-324  College Orientation  1

Second Semester
HCM-117  Bakery Basics  3
HCM-140  Fabrication  3
HCM-161  Stocks and Sauces  1.5
HCM-181  International Cuisine  4
HCM-269  Garde Manger  1.5
HCM-315  Wine, Beer and Spirits Basics  3.5
HCM-321  Introduction to Hospitality Industry  1

Third Semester
HCM-166  Culinary Arts  4
HCM-204  Service Techniques  3
HCM-227  Menu Planning  1
HCM-231  Nutrition  2
HCM-273  Advanced Garde Manger  3
HCM-279  Hospitality Accounting  OR  3
ACC-152  Financial Accounting  1

Fourth Semester
COM-744  Oral Communication in the Workplace  OR  3
ENG-106  Composition II*  3
FLS-118  Spanish for Professionals: Hospitality  3
HCM-251  Purchasing, Receiving and Inventory  2
HCM-330  Hospitality Personnel Management  3
HCM-342  Hospitality Events and Catering (BOH)  3
HCM-530  Culinary Capstone  1
PSY-111  Introduction to Psychology  OR  3
MGT-145  Human Relations in Management*  18

and education opportunities are available for culinary students.

Career opportunities: chefs; cooks; catering managers; kitchen managers; other food service professionals.

Culinary Arts

Hospitality Arts
The Hotel at Kirkwood Center
319-848-8770
www.kirkwood.edu/hospitality

Entry time
Fall or Spring

Award
Associate of Applied Science degree
2 years (4 semesters)

Industry endorsements earned
National Career Readiness Certificate; National Restaurant Association’s Food Protection Manager Certificate

Accreditation
This program is fully accredited by the American Culinary Federation Education Foundation Accrediting Commission. This provides graduates with an opportunity for nationally-recognized certification upon completion of the program.

Learn culinary arts in a real-world setting. From day one you will get hands-on training and gain practical experience in management, food preparation and service.

Students assist in the daily operation of The Class Act Restaurant, a full-service restaurant at The Hotel at Kirkwood Center. The restaurant features fine dining for hotel and conference center guests, Kirkwood staff and the public. Students assist in planning, preparing and servicing catered events on campus during their last semester. Students are required to purchase professional uniforms and tools to use when in labs and kitchens.

Field trips to various types of food-related establishments and an optional trip to the industry’s national convention are also included in the course of study. International travel
Total program credit hours  
69.5

Optional Courses
HCM-130  Plated Desserts  1
HCM-402  Culinary Competition  2
HCM-404  Culinary Travel Studies  1
HCM-924  Honors Project  1
HCM-928  Independent Study  1

When transferring to a four-year school, see your advisor for course requirements.
*Those transferring to a four-year college or university may want to select this course.
>Enrollment in this course requires a Writing COMPASS score of 70 or above.
>Enrollment in this course requires a College Algebra COMPASS score of 76 or above.

Dental Assisting
Allied Health
2164 Linn Hall
319-398-5566
www.kirkwood.edu/alliedhealth

Entry time
Fall or Spring

Award
Diploma
1 year (3 semesters)
Associate of Applied Science degree after completion of additional required courses.
2 years (5 semesters)

Accreditation
The Dental Assisting program is accredited by the Commission on Dental Accreditation and has been granted the accreditation status of compliance without reporting requirements. The Commission is a specialized accrediting body recognized by the United States Department of Education. Successful completion of the program entitles graduates to take the National Dental Assistant Certification Examination. The Commission on Dental Accreditation can be contacted at 312-440-4653 or 211 East Chicago Avenue, Chicago, IL 60611.

Personal Characteristics
If you like to work with a variety of people, have a friendly manner that puts people at ease and want to provide patient care, consider a career in dental assisting. Other important qualities include the ability to work swiftly and skillfully, anticipate the needs of others and follow instructions.

Dental assistants help the dentist at chairside and also perform functions such as polishing teeth, taking X-rays, mixing materials and sterilizing instruments. Some assistants also manage the office and patient accounts, schedule appointments and purchase supplies. During this one-year program, you will gain classroom, laboratory and hands-on experience by working with patients at the College of Dentistry at the University of Iowa, at Veteran's Administration Medical Center in Iowa City and in private dental offices.

Career opportunities: private dental office; clinics; research/teaching; consulting; hospitals; sales and insurance claims; specialty practices such as orthodontics or children's dentistry.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<td>DEA-403</td>
<td>Dental Materials for the DA</td>
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<td>DEN-100</td>
<td>Fundamentals of Dentistry</td>
<td>3.5</td>
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<td>DEN-110</td>
<td>Dental Terminology*</td>
<td>2</td>
</tr>
<tr>
<td>DEN-120</td>
<td>Dental Anatomy*</td>
<td>3</td>
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<tr>
<td>HSC-107</td>
<td>Professionals in Health*</td>
<td>2</td>
</tr>
<tr>
<td>HSC-210</td>
<td>Health Skills I*</td>
<td>1</td>
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<tr>
<td>Second Semester</td>
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<tr>
<td>DEA-285</td>
<td>Oral Pathology for Dental Assisting*</td>
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<td>DEA-518</td>
<td>Dental Assisting II</td>
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<td>DEA-580</td>
<td>Dental Assisting Clinic I</td>
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<td>DEA-610</td>
<td>Specialty Dentistry</td>
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<td>DEN-130</td>
<td>Head and Neck Anatomy*</td>
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<td>DEN-200</td>
<td>Preventive Dentistry</td>
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<tr>
<td>DEN-300</td>
<td>Dental Radiography</td>
<td>3</td>
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<tr>
<td></td>
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<tr>
<td>COM-744</td>
<td>Oral Communication in the Workplace*</td>
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<td>COM-222</td>
<td>Communication for Health Care Professionals</td>
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<td>DEA-519</td>
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<td>Dental Office Procedures</td>
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<td>DEN-220</td>
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Associate of Applied Science Degree Courses

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<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td>ENG-105</td>
<td>Composition I*</td>
<td>3</td>
</tr>
<tr>
<td>PSY-111</td>
<td>Introduction to Psychology*</td>
<td>3</td>
</tr>
<tr>
<td>MAT-731</td>
<td>Introduction to Math*</td>
<td>2</td>
</tr>
<tr>
<td>------</td>
<td>Humanities Elective*</td>
<td>3</td>
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<tr>
<td>------</td>
<td>Electives*</td>
<td>6</td>
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</table>
Career Programs

Total Associate of Applied Science degree program credit 64.5 hours

This curriculum is for fall start. Curriculum for spring start is slightly different. Contact Allied Health for information.

*Courses may be taken before beginning the program.

NOTE: Minimum C- required in all technical Dental Assisting courses and DEN-100, DEN-120 and DEN-130.

Dental Hygiene

Allied Health
2164 Linn Hall
319-398-5566
www.kirkwood.edu/alliedhealth

Entry time
Fall

Award
Associate of Applied Science degree
2 years (5 semesters, including 1 summer)

Accreditation
The Dental Hygiene program is accredited by the Commission on Dental Accreditation and has been granted the accreditation status of compliance without reporting requirements. The Commission is a specialized accrediting body recognized by the United States Department of Education. Dental Hygiene graduates are eligible to take the National Board Dental Hygiene Examination and the regional board examinations of their choice. Successful completion of both board examinations is required to receive a license to practice dental hygiene. The Commission on Dental Accreditation can be contacted at 312-440-4653 or 211 East Chicago Avenue, Chicago, IL 60611.

Dental hygienists help prevent, detect and treat diseases of the mouth, playing a key role in the pursuit of optimal patient health via education and treatment planning. Hygienists work independently with patients.

Dental hygienists remove calculus deposits and stains from teeth, polish teeth, apply sealants and fluoride, take X-rays, record medical and dental histories, and educate patients on how proper brushing, flossing and eating habits can help maintain a healthy mouth.

Career opportunities: dental offices/clinics/hospitals; government agencies; insurance claims processing; specialty dental practices; sales; teaching.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIO-168</td>
<td>Human Anatomy and Physiology I with Lab**</td>
<td>4</td>
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<td>CHM-110</td>
<td>Introduction to Chemistry**</td>
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<td>CHM-111</td>
<td>Introduction to Chemistry Lab**</td>
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</tr>
<tr>
<td>MAT-731</td>
<td>Introduction to Math***</td>
<td>2</td>
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<tr>
<td><strong>First Semester</strong></td>
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</tr>
<tr>
<td>DEN-100</td>
<td>Fundamentals of Dentistry</td>
<td>3.5</td>
</tr>
<tr>
<td>DEN-120</td>
<td>Dental Anatomy*</td>
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<tr>
<td>DEN-130</td>
<td>Head and Neck Anatomy*</td>
<td>1.5</td>
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<tr>
<td>DEN-200</td>
<td>Preventive Dentistry</td>
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<tr>
<td>DHY-173</td>
<td>Dental Hygiene I</td>
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<td>HSC-107</td>
<td>Professionals in Health*</td>
<td>2</td>
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<td>HSC-210</td>
<td>Health Skills I*</td>
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<td><strong>Second Semester</strong></td>
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<td>BIO-173</td>
<td>Human Anatomy and Physiology II with Lab*</td>
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<td>CHM-132</td>
<td>Introduction to Organic and Biochemistry*</td>
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<td>DEN-300</td>
<td>Dental Radiography</td>
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<td>DHY-186</td>
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<tr>
<td>DHY-140</td>
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<td><strong>Third Semester</strong></td>
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<td>**</td>
</tr>
<tr>
<td>BIO-186</td>
<td>Microbiology*</td>
<td>4</td>
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<tr>
<td>DEN-220</td>
<td>Dental Nutrition*</td>
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<td>DHY-220</td>
<td>Dental Materials</td>
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<td>DHY-274</td>
<td>Local Anesthesia for the Dental Hygienist</td>
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<td>DHY-285</td>
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<tr>
<td><strong>Fourth Semester</strong></td>
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<tr>
<td>DHY-134</td>
<td>Therapeutics and Pain Control</td>
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<tr>
<td>DHY-211</td>
<td>Periodontology</td>
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<tr>
<td>DHY-250</td>
<td>Community Dental Health</td>
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<td>DHY-296</td>
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<td>SPC-101</td>
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<td>3</td>
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<tr>
<td>COM-222</td>
<td>Communication for Health Care Professionals*</td>
<td>3</td>
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<td><strong>Fifth Semester</strong></td>
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<tr>
<td>DHY-306</td>
<td>Dental Hygiene V</td>
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<td>PSY-111</td>
<td>Introduction to Psychology*</td>
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</tr>
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<td>SOC-110</td>
<td>Introduction to Sociology*</td>
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</table>

*Courses may be taken before beginning the clinical portion of the program.
**Completion of courses with a minimum grade of C- required before admission to the program.

+or MAT-700 Basic Math, 3 credits, or any college-level math course.

Note: Minimum C is required in all technical Dental Hygiene courses. Dental Hygiene graduates are eligible to take the National Board of Dental Hygiene Examination and the regional board examinations of their choice. Successful completion of both board examinations is required to receive a license to practice dental hygiene.

### Dental Technology

**Allied Health**

2164 Linn Hall
319-398-5566
www.kirkwood.edu/alliedhealth

**Entry time**

Fall

**Award**

Associate of Applied Science degree

2 years (5 semesters including 1 summer semester)

**Accreditation**

The Dental Technology program is accredited by the Commission on Dental Accreditation and has been granted the accreditation status of compliance without reporting requirements. The Commission is a specialized accrediting body recognized by the United States Department of Education. Graduates are eligible to take the Recognized Graduate examination, which is one of the first steps leading to certification as a certified dental technician (CDT). This examination is administered by the National Board of Certification in Dental Laboratory Technology. The Commission on Dental Accreditation can be contacted at 312-440-4653 or 211 East Chicago Avenue, Chicago, IL 60611.

The goal and challenge for a dental technician is to create a restoration that is a perfect match to a patient’s natural tooth. Artistic and creative abilities are valuable assets for a dental technician. By using several technologies, a dental technician improves patients’ quality of life, appearance and health, not to mention creates beautiful teeth and fabulous smiles. Although a majority of the work provided by dental technicians is done independently, they are valued members of the dental team.

Kirkwood's Dental Technology program - one of only 20 accredited programs in the nation and the only one in Iowa - prepares you in five specialty areas: dentures, partial dentures, ceramics, orthodontics, and crowns and bridges. During this program, you will work with commercial dental laboratories, the College of Dentistry and Hospital Dentistry at The University of Iowa and the Veterans Administration Medical Center in Iowa City to gain hands-on experience.

**Career opportunities:** large production laboratory; small multi-task laboratory; technical representative; research; hospital; dental school; owner-operator of laboratory and in-house laboratory.

### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td><strong>First Semester</strong></td>
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<tr>
<td>DEN-120</td>
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<tr>
<td>DLT-152</td>
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<td>DLT-156</td>
<td>Dental Anatomy Lab</td>
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<td>DLT-250</td>
<td>Foundation of Dental Technology</td>
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<td>DLT-251</td>
<td>Introduction to Dentures</td>
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<td>HSC-107</td>
<td>Professionals in Health*</td>
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<tr>
<td>MAT-731</td>
<td>Introduction to Math*+</td>
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<td>DLT-253</td>
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<td>DLT-254</td>
<td>Introduction to Crown and Bridge</td>
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<td>DLT-445</td>
<td>Orthodontics</td>
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<td>DLT-565</td>
<td>Occlusion</td>
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<td>SPC-101</td>
<td>Fundamentals of Oral Communication*</td>
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<td><strong>Third Semester</strong></td>
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<td>DLT-353</td>
<td>Dental Technology Industry</td>
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<tr>
<td>DLT-355</td>
<td>Digital Dentistry</td>
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<td>Introduction to Ceramics</td>
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<td><strong>Fourth Semester</strong></td>
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<tr>
<td>BCA-189</td>
<td>Microcomputer Literacy*</td>
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<tr>
<td>DLT-350</td>
<td>Fixed Dental Prosthodontics</td>
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<td>Removable Dental Prosthodontics</td>
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<td>DLT-851</td>
<td>DLT Clinic I</td>
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<td>ENG-105</td>
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<td>PSY-111</td>
<td>Introduction to Psychology OR</td>
<td>3</td>
</tr>
<tr>
<td>SOC-110</td>
<td>Introduction to Sociology</td>
<td>3</td>
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<td><strong>Fifth Semester</strong></td>
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### Optional Course

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<tr>
<td>DLT-450</td>
<td>Advance Orthodontics</td>
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*Courses may be taken before beginning the program.

+or MAT-700 Basic Math, 3 credits, or any college-level math course.

Note: Minimum C- required in all Dental Technology classes.
Diagnostic Assistant (Radiologic Technology)

Allied Health
2164 Linn Hall
319-398-5566
www.kirkwood.edu/alliedhealth

Entry time
Summer

Award
Associate of Applied Science degree

The Diagnostic Assistant degree is designed for Radiologic Technology students in partnership with the Mercy/St. Luke’s School of Radiologic Technology or Covenant Medical Center in Waterloo.

The two-year radiologic technology technical program is taught through Mercy/St. Luke’s Medical Center or Covenant Medical Center, begins each summer and has a separate application process.

Students can complete prerequisite courses at Kirkwood to become eligible to apply for the Mercy/St. Luke’s Medical Center or Covenant Medical Center program. After they complete a portion of the program, students can transfer those credits back to Kirkwood and receive a Diagnostic Assistant associate of applied science degree if the prerequisite courses were taken at Kirkwood.

Career opportunities: hospitals; outpatient clinics; physicians’ offices.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td>BCA-189</td>
<td>Microcomputer Literacy</td>
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<tr>
<td>BIO-168</td>
<td>Human Anatomy &amp; Physiology I w/ lab</td>
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<td>BIO-173</td>
<td>Human Anatomy &amp; Physiology II w/ lab</td>
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<td>HSC-115</td>
<td>Medical Terminology</td>
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<td>MAT-102</td>
<td>Intermediate Algebra</td>
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<td>PSY-111</td>
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<td>Fundamentals of Oral Communication</td>
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<td>Humanities Elective</td>
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<td>Electives* (from approved list)</td>
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Program Class List

- Mercy/St. Luke’s Technical Courses

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Total program credit hours 62

*Electives

Does not need to be taken as pre-requisites but must be completed before degree is awarded.

ADM-257 Professionalism in the Workplace 2

ASL-141 American Sign Language I 4

BUS-161 Human Relations 3

BUS-280 Fundamentals of Lean Process Improvement 3

HSC-107 Professionals in Health 2

PEH-111 Personal Wellness 3

PHI-105 Introduction to Ethics 3

PSY-121 Developmental Psychology 3

PSY-241 Abnormal Psychology 3

PSY-251 Social Psychology 3

RDG-130 Effective Reading Strategies 3

SDV-135 Job Seeking Skills 1

SDV-175 Tools for Life Seminar 3

SPC-132 Group Communication 3

Upon completion of Mercy/St. Luke’s School of Radiologic Technology program, 29 technical credits can be transferred to Kirkwood Community College toward an Associate of Applied Science (A.A.S.) degree.

Diesel Agriculture Technology

Ag Sciences
Washington Hall
319-398-5609
www.kirkwood.edu/agrisciences

Entry time
Fall

Award
Associate of Applied Science degree
2 years (4 semesters, 1 summer)

The Diesel Agriculture Technology program offers a two-year A.A.S. degree for students entering the workforce, in agriculture equipment or heavy equipment maintenance and repair. Today’s technicians not only diagnose and fix mechanical problems, they also must understand and troubleshoot the computer-controlled systems found in diesel engines, power trains and hydraulic systems. The program also provides industry training and professional development for graduates. Currently, more than 30 local businesses employ one or more former students who participated in our program.

Career opportunities: general service technician; specialized service technician; parts manager; warranty administrator; shop coordinator; owner/operator, teacher/trainer; safety inspector.

Degree Requirements

<table>
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<tr>
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<th>Course Title</th>
<th>Credit Hours</th>
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<td>ADM-257</td>
<td>Professionalism in the Workplace</td>
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<td>ASL-141</td>
<td>American Sign Language I</td>
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<td>BUS-161</td>
<td>Human Relations</td>
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<td>BUS-280</td>
<td>Fundamentals of Lean Process Improvement</td>
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<td>Professionals in Health</td>
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<td>PEH-111</td>
<td>Personal Wellness</td>
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<tr>
<td>PHI-105</td>
<td>Introduction to Ethics</td>
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<td>PSY-121</td>
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<tr>
<td>PSY-241</td>
<td>Abnormal Psychology</td>
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<tr>
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Upon completion of the Mercy/St. Luke’s School of Radiologic Technology program, 29 technical credits can be transferred to Kirkwood Community College toward an Associate of Applied Science (A.A.S.) degree.
First Semester (Fall)

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<thead>
<tr>
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<th>Course Title</th>
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<td>AGM-405</td>
<td>Ag Engines</td>
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<td>DSL-355</td>
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<td>MAT-715</td>
<td>Industrial Math I</td>
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Communications Elective 3

18

Second Semester (Spring)

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<tr>
<td>AGM-103</td>
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<tr>
<td>AGM-419</td>
<td>Machinery Servicing</td>
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<td>DSL-143</td>
<td>Fundamentals of Electricity</td>
<td>3</td>
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<td>DSL-345</td>
<td>Truck Engines</td>
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<td>DSL-355</td>
<td>Fundamentals of Internal Combustion Engines</td>
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<td>BUS-161</td>
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Communications Elective 3

14

(Summer)

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<td>DSL-630</td>
<td>Air Brakes and ABS</td>
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<td>DSL-642</td>
<td>Steering and Suspension</td>
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Third Semester (Fall)

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<td>AGM-422</td>
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<td>AGM-440</td>
<td>Power Shift Transmissions</td>
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Communications Elective 3

16

Fourth Semester (Spring)

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<td>AGM-409</td>
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<tr>
<td>AGM-414</td>
<td>Fundamentals of Air Conditioning</td>
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Communications Elective 3

18

Total program credit hours 73

Additional Information

It is possible upon graduation of Diesel Agriculture Technology to take the required Diesel Truck Technology classes Kirkwood offers and attain a second degree in a minimal amount of time. Please see an advisor for further details.

A commercial driver's license (CDL) is recommended for Kirkwood's Diesel programs. Students can take Kirkwood's Continuing Education CDL driving program offered at the end of the fall semester.

 Diesel Truck Technology

Ag Sciences
Washington Hall
319-398-5609
www.kirkwood.edu/agrisciences

Entry time
Fall

Award
Associate of Applied Science degree
ACE program – 17 months in length.

The Diesel Truck Technology program gives graduates training in diesel truck and diesel-powered equipment maintenance and repair. Courses include engine repair, welding, electricity and electronics, air conditioning, power-trains, mechanical and electronic fuel systems, air brakes, truck and trailer suspensions, and trailer service and repair.

Career opportunities: shop technicians; shop foremen; sales associates and sales managers; service managers; parts technicians and parts managers.

Degree Requirements

<table>
<thead>
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<tr>
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<td>Industrial Math I</td>
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Communications Elective 3

18

First Semester (Fall)

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Communications Elective 3

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Second Semester (Spring)

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<td>Combine Servicing</td>
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<td>AGM-422</td>
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Communications Elective 3

16

Summer Term

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<td>Cooling Systems</td>
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<td>DSL-630</td>
<td>Air Brakes and ABS</td>
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<td>DSL-642</td>
<td>Steering and Suspension</td>
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Third Semester (Fall)

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<tr>
<td>AGM-422</td>
<td>Diesel Fuel Systems</td>
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<td>AGM-932</td>
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<td>DSL-424</td>
<td>EFI Engine Systems</td>
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Communications Elective 3

15

Total program credit hours 64

Additional Information

A commercial driver's license (CDL) is recommended for Kirkwood's Diesel programs. Students can take Kirkwood's Continuing Education CDL driving program offered at the
end of the fall semester.

It is possible upon graduation of Diesel Truck Technology to take the required Diesel Agriculture Technology classes Kirkwood offers and attain a second degree in a minimal amount of time. Please see an advisor for further details.

**Early Childhood Education**

**Social Sciences**
1008 Cedar Hall
319-398-1241
www.kirkwood.edu/socialsciences

**Entry time**
Fall, Spring, Summer

**Award**
Associate of Applied Science (4 semesters)
Associate of Arts Liberal Arts (transfer degree)
2 years (5 semesters)

Diploma and Paraeducator Certification are also available. See program coordinator for information.

The Early Childhood Education program provides several options for students interested in the care and education of young children. Students in the program have opportunities to participate in a variety of community early childhood programs, including Head Start centers, kindergarten classrooms, voluntary four-year-old programs and child care centers. Whenever possible, experience in inclusive and diverse settings will be encouraged.

Students planning to pursue an Early Childhood Education degree at a four-year institution follow the Liberal Arts program requirements while at Kirkwood, completing general education and elective courses that prepare them for transfer. Students hoping to start their careers without transferring should work with the Early Childhood Education advisor to choose from the degree, diploma and certificate options.

Kirkwood has articulation agreements with a number of institutions offering degrees in early-childhood-related programs. By working with your advisor in Early Childhood Education, you can select courses that will meet the requirements of your transfer institution such as foreign language, laboratory science, diversity and grade point average.

**Early Childhood Paraeducator Certificate**
These courses are aligned with the Child Development Association competencies. In addition to receiving Kirkwood’s Early Childhood Education Paraeducator certificate, candidates are eligible for Iowa paraeducator certification Generalist and Area of Concentration - Early Childhood Education. The Iowa paraeducator certification is issued by the Iowa Board of Educational Examiners to candidates who have met requirements and completed the application process.

**Career opportunities:** lead teachers; assistant teachers; paraeducators; early childhood program directors and child care providers in a variety of early childhood programs including child care centers; child development homes; preschools and Head Start programs.

**Required Courses**

**A.A.S. Degree Requirements**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td><strong>First Semester (Fall)</strong></td>
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<tr>
<td>ECE-103</td>
<td>Introduction to Early Childhood Education</td>
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<td>ECE-158</td>
<td>Early Childhood Curriculum I</td>
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<td>ECE-170</td>
<td>Child Growth &amp; Development</td>
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<tr>
<td>ENG-105</td>
<td>Composition I*</td>
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<td>ENG-106</td>
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<td>Introduction to Psychology</td>
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<td>SPC-101</td>
<td>Fundamentals of Oral Communication</td>
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<td>ECE-133</td>
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<td>ECE-290</td>
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<td>EDU-248</td>
<td>Exceptional Persons</td>
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<td>ECE-221</td>
<td>Infant/Toddler Care &amp; Education</td>
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<td>ECE-243</td>
<td>Early Childhood Guidance</td>
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<td>ECE-262</td>
<td>Early Childhood Field Experience</td>
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**Early Childhood Recommended Electives**

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<td>ECE-928</td>
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<td>EDU-110</td>
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<td>EDU-119</td>
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<td>Inclusion and Adaption</td>
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<td>EDU-212</td>
<td>Educational Foundations</td>
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<td>EDU-240</td>
<td>Educational Psychology</td>
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<td>EDU-249</td>
<td>Cultural and Linguistic Diversity</td>
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<td>FLS-141</td>
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<td>LIT-105</td>
<td>Children’s Literature</td>
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Career Programs

Electroneurodiagnostic Technology

Allied Health
2164 Linn Hall
319-398-5566
www.kirkwood.edu/alliedhealth

Entry time
Fall

Award
Associate of Applied Science degree
2 years (5 semesters including 1 summer)

Accreditation
The Electroneurodiagnostic Technology program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). Graduates are prepared for the Registry Exam of American Board of Registration of Electroencephalographic and Evoked Potential Technologists.

Commission on Accreditation of Allied Health Education Programs
1361 Park Street, Clearwater, FL 33756, 727-210-2350.

Electroneurodiagnostics is the study and recording of electrical activity in the brain and nervous system. An Electroneurodiagnostic (END) Technologist uses an electroencephalograph (EEG) instrument to record electrical impulses transmitted by the brain and nervous system. These recordings assist physicians in the diagnosis of a variety of neurological problems—from headaches and dizziness to seizure disorders, strokes, degenerative brain diseases and sleep disorders.

This is a cooperative program between Kirkwood and the Department of Neurology at the University of Iowa Hospitals and Clinics. All technical course work for the program is through the Department of Neurology at the University of Iowa Hospitals and Clinics. The clinical experiences are at area hospitals and the Department of Neurology at the University of Iowa Hospitals and Clinics.

Career opportunities: hospitals; outpatient clinics; sleep labs.

Degree Requirements

<table>
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<th>Credit Hours</th>
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<tr>
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<td>END-100</td>
<td>Introduction to</td>
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<td>Electroneurodiagnostics</td>
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<td>HSC-107</td>
<td>Professionals in Health*</td>
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<td>HSC-117</td>
<td>Basic Medical Terminology*</td>
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<td>HSC-210</td>
<td>Health Skills I*</td>
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<td>MAT-731</td>
<td>Introduction to Math*</td>
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Second Semester

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<td>BIO-173</td>
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<td>END-200</td>
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<td>END-330</td>
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*Your writing placement score may require prerequisite courses.
+Leads to certification as a paraeducator.
### Degree Requirements

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<td>ELT-345</td>
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<tr>
<td>MAT-745</td>
<td>Technical Mathematics I</td>
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<td>Communications Elective*</td>
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<td>ELT-341</td>
<td>Electric Circuits II</td>
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<td>ELT-517</td>
<td>Active Devices I: Transistor Amplifiers</td>
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<tr>
<td>MAT-746</td>
<td>Technical Mathematics II</td>
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<tr>
<td>ELT-309</td>
<td>Digital Circuits [\textit{OR}]</td>
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<td>EGT-420</td>
<td>PLTW - Digital Electronics</td>
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<tr>
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<td>Active Devices II: Operational Amplifiers</td>
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<tr>
<td>MGT-145</td>
<td>Human Relations in Management [\textit{OR}]</td>
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<tr>
<td>PSY-111</td>
<td>Introduction to Psychology</td>
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<td>ELT-299</td>
<td>Introduction to LabView</td>
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<td>ELT-396</td>
<td>Communications Electronics</td>
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<td>ELT-616</td>
<td>Microprocessors I</td>
<td>4</td>
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<td>ELT-398</td>
<td>Communications Systems I</td>
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<tr>
<td>PHY-230</td>
<td>Technical Physics I</td>
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<td>ELT-399</td>
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<td>ELT-621</td>
<td>Microprocessors II</td>
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<td>ELT-845</td>
<td>Design Projects</td>
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<td>PHY-232</td>
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<td>ELT-277</td>
<td>Electronic Practices</td>
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<tr>
<td>ELT-345</td>
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</table>

**Total program credit hours** 77

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### Electronics Engineering Technology

#### Industrial Technologies

101 Jones Hall  
319-398-4983  
[www.kirkwood.edu/industrialtech](http://www.kirkwood.edu/industrialtech)

**Entry time**  
Fall

**Award**  
Associate of Applied Science degree  
2 years (4 semesters, 1 summer)  
Diploma  
3 semesters

**Industry endorsement earned**  
National Career Readiness Certificate

The Electronics Engineering Technology program balances theory and practical applications to help students design, test, analyze, operate and troubleshoot complex electronic systems. The program integrates LabVIEW®, a graphic-based programming language used by many of the major technology-based employers for data acquisition, process control and automated test instrumentation. Students can transfer more than 40 EET credit hours to UNI toward a B.S. in Electrical and Information Engineering Technology. The curriculum may also be modified to maximize credits transferable to BSEE and BSEET degree programs. EET graduates may also seek certification by the Electronics Technicians Association, International Inc.

**Career opportunities:** field-service technician; electronics design technician; electronics test technician; biomedical electronics technician; avionics technician; technical writer; computer-integrated manufacturing technician; advanced industrial manufacturing technician; electronic systems repair technician; computer repair technician; controls technician; security systems technician; radio communications technician; component test technician.
MAT-745 Technical Mathematics I 4
--- Communications Elective 3

**Second Semester (Spring)**
ELT-341 Electric Circuits II 5
ELT-517 Active Devices I: Transistor Amplifiers 6
MAT-746 Technical Mathematics II 4
--- Communications Elective 3

15

18

**Third Semester (Fall)**
ELT-309 Digital Circuits 3
ELT-518 Active Devices II: Operational Amplifiers 3
MGT-145 Human Relations in Management 3
OR
PSY-111 Introduction to Psychology 3
--- Humanities or History/Cultures Elective 3
12

45

*Students planning to transfer to a four-year college or university should consider substituting some or all of the following courses into the EET curriculum:

ENG-105 Composition I AND ENG-108 Comp. II: Technical Writing OR ENG-106 Composition FOR --- Communication electives

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**Energy Production and Distribution Technologies**

**Industrial Technologies**
101 Jones Hall
319-398-4983
www.kirkwood.edu/industrialtech

**Entry time**
Fall

**Award**
Associate of Applied Science degree
2 years (4 semesters, 1 summer)

**Industry endorsements earned**
Nacelle Rescue; Top of Nacelle Rescue; Hub Rescue; Confined Space Blade Rescue; Ladder Climb Ladder Rescue and Tower Self Rescue; Fire Extinguisher; Lock Out/Tag Out; Hy-Torq Hydraulic Torque Certification; Personal Protective Equipment; Fall Prevention and Protection; OSHA 30-General Industry; Electrostatic Discharge; Forklift Class 1, 3, 4, 5, 7; 50+ High Voltage Arc Flash; Residential Voltage Arc Flash; Rigging Lifting and Cribbing; JSEA-Job Safety & Environmental Analysis; Adult First Aid with CPR; National Career Readiness Certification; Rope Access; Tower Rescue; Snap-On Torque Certification.

Help power the future! You’ll learn about complex mechanical/electrical systems, including megawatt windmills, steam driven turbines and solar fields that turn sunlight into electricity. Plus, students can assemble, disassemble and troubleshoot parts and systems of a real 2.5 megawatt wind turbine. The four generators, hub, gear box, nacelle and other parts were donated by Clipper Windpower, Cedar Rapids, and give students valuable hands-on experience with these major components.

**Career opportunities:** wind energy specialist; photovoltaic installer; industrial mechanic; data acquisition specialist; electro-mechanical technician.

**Degree Requirements**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
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</tr>
<tr>
<td>ELE-233</td>
<td>Electrical Safety and Shop Methods</td>
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<tr>
<td>ELE-235</td>
<td>Electrical Theory, Measurement and Circuits</td>
<td>3</td>
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<tr>
<td>ELE-238</td>
<td>AC, Magnetism, Transformers and Relays</td>
<td>1</td>
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<tr>
<td>MAT-230</td>
<td>Maintenance Math I</td>
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<td>MAT-233</td>
<td>Maintenance Math II</td>
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<tr>
<td>IND-156</td>
<td>Microcomputers for the Trades</td>
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<tr>
<td>IND-167</td>
<td>Torqueing and Tensioning</td>
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<tr>
<td>ATR-300</td>
<td>Mechanical Drive Systems I</td>
<td>2</td>
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<td>Mechanical Drive Systems II</td>
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<td><strong>Second Semester</strong></td>
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<td>ELE-233</td>
<td>Electrical Safety and Shop Methods</td>
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<td>ELE-238</td>
<td>AC, Magnetism, Transformers and Relays</td>
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<td>MAT-230</td>
<td>Maintenance Math I</td>
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<td>MAT-233</td>
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<td>IND-156</td>
<td>Microcomputers for the Trades</td>
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<td>IND-167</td>
<td>Torqueing and Tensioning</td>
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<td>ATR-300</td>
<td>Mechanical Drive Systems I</td>
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<tr>
<td>ATR-302</td>
<td>Mechanical Drive Systems II</td>
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<td><strong>Summer Semester</strong></td>
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<tr>
<td>IND-175</td>
<td>Advanced Alignment</td>
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<tr>
<td>IND-187</td>
<td>Predictive Maintenance</td>
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<tr>
<td>IND-191</td>
<td>Preventive Maintenance</td>
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<td>IND-196</td>
<td>Fundamentals of Hydraulic and Pneumatic Systems</td>
<td>5</td>
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<td>Communications Elective</td>
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<tr>
<td><strong>Third Semester</strong></td>
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<tr>
<td>ELE-400</td>
<td>Basic Photovoltaic Systems for Install</td>
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<td>ELT-105</td>
<td>Introduction to Programmable Logic Controllers</td>
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<tr>
<td>ELT-128</td>
<td>Introduction to PLC Programming</td>
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</table>

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### Career Programs

**WTT-300** Wind Turbine Construction 3  
**WTT-350** Wind Turbine Commissioning 3  
**WTT-400** Wind Turbine Operations 3  
________ Social Science Elective 3  

**WTT-500** Wind Turbine Troubleshooting 4  
**WTT-450** Wind Turbine Maintenance 4  
**ELT-438** Data Acquisition and Analysis 2  
**PWL-300** Smart Grid Design and Technology 1  
**PWL-325** Electrical Distribution Systems 1  
**PWL-330** Power Cable Materials and Installation 1  
________ Humanities or History/Cultures Elective 3  
________ Communication Elective 3  

**WTT-450** Wind Turbine Maintenance 4  
**WTT-400** Wind Turbine Operations 3  
________ Social Science Elective 3  

**WTT-500** Wind Turbine Troubleshooting 4  
**WTT-450** Wind Turbine Maintenance 4  
**ELT-438** Data Acquisition and Analysis 2  
**PWL-300** Smart Grid Design and Technology 1  
**PWL-325** Electrical Distribution Systems 1  
**PWL-330** Power Cable Materials and Installation 1  
________ Humanities or History/Cultures Elective 3  
________ Communication Elective 3  

Total program credit hours 84  

### Entry-Level Firefighter  
**Industriual Technologies**  
101 Jones Hall  
319-398-4983  
www.kirkwood.edu/industrialtech

**Entry time**  
Fall or Spring

**Award**  
Associate of Applied Science degree  
2 years (4 semesters, 1 summer)  
Diploma  
1 year (2 semesters, 1 summer)  
Certificates options (See advisor for information)

**Industry endorsements and certifications earned**  
Firefighter I; Firefighter II; EMT (State and National); National Career Readiness Certificate

The Entry-Level Firefighter curriculum provides the skills sought by entry-level firefighters. Recent high school graduates or volunteers may use this program to improve their employment prospects in this competitive profession. This program features some evening and online classes.

**Career opportunities:** firefighter; emergency medical technician.

### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td><strong>First Semester (Fall)</strong></td>
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<tr>
<td>ENG-101</td>
<td>Elements of Writing</td>
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<td>FIR-127</td>
<td>Fire Behavior and Combustion</td>
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<tr>
<td>FIR-150</td>
<td>Fire Detection and Suppression</td>
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<td><strong>Second Semester (Spring)</strong></td>
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<tr>
<td>BCA-189</td>
<td>Microcomputer Literacy</td>
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<tr>
<td>FIR-110</td>
<td>History and Philosophy of the Fire Service</td>
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<td>FIR-124</td>
<td>Building Construction</td>
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<td>FIR-130</td>
<td>Fundamentals of Fire Prevention</td>
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<td>FIR-400</td>
<td>Fire &amp; Emergency Services Safety &amp; Survival</td>
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<td>Math Elective*</td>
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<td>FIR-140</td>
<td>Firefighter I - Unit I</td>
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<td>FIR-141</td>
<td>Firefighter I - Unit II</td>
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<td>FIR-142</td>
<td>Firefighter I - Unit III</td>
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<td>FIR-289</td>
<td>Firefighter I - Unit IV</td>
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<td><strong>Third Semester (Fall)</strong></td>
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<td>EMS-200</td>
<td>Emergency Medical Technician</td>
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<td>FIR-201</td>
<td>Firefighter II</td>
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<td>_______</td>
<td>One Fire Science Management Technical Course</td>
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<td><strong>Fourth Semester (Spring)</strong></td>
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<td>FIR-180</td>
<td>Chemistry of Hazardous Materials</td>
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<td>PSY-111</td>
<td>Introduction to Psychology</td>
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<td>_______</td>
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<tr>
<td>_______</td>
<td>Two Fire Science Management Technical Courses</td>
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<td><strong>Degree Total program credit hours</strong></td>
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<tr>
<td><strong>Fire Science Management Technical Courses</strong></td>
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<td>FIR-146</td>
<td>Firefighting Tactics and Strategy</td>
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<td>FIR-183</td>
<td>Hazardous Materials Management</td>
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<td>FIR-280</td>
<td>Instruction Techniques for Fire Science Training</td>
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<tr>
<td>FIR-330</td>
<td>Fire Service Company Officer</td>
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**Diploma Requirements**  

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<td><strong>First Semester (Fall)</strong></td>
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<tr>
<td>BCA-189</td>
<td>Microcomputer Literacy</td>
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<td>ENG-101</td>
<td>Elements of Writing</td>
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<td>FIR-127</td>
<td>Fire Behavior and Combustion</td>
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<tr>
<td>FIR-150</td>
<td>Fire Detection and Suppression</td>
<td>3</td>
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<tr>
<td>FIR-213</td>
<td>Principles of Emergency Services</td>
<td>3</td>
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</table>
Horticulture/Floral Careers

Ag Sciences

Career opportunities: floral designer; office management for small businesses; greenhouse specialist; production and distribution of floral products; interior plant maintenance; retail florist owner/manager; marketing/buying; wedding consultant; merchandising and display artist; wholesale florist; event planner.

For gainful employment information, including graduation rates, the median debt of students who completed the program and other information, visit www.kirkwood.edu/gainfulemployment.

Floral Careers

Ag Sciences
Horticulture/Floral Careers

319-398-5441
www.kirkwood.edu/agrisciences

Entry time

Fall

Award

Diploma

1 year (2 semesters, 1 summer)

The Floral Careers program provides students with advanced training in floral design, plant identification and care, retail flower shop operations, advertising, visual merchandising, inventory control, and order processing. Within the Floral Careers program, there is a major emphasis in wedding and funeral designs, purchasing and interior plant maintenance for the retail florist.

For gainful employment information, including graduation rates, the median debt of students who completed the program and other information, visit www.kirkwood.edu/gainfulemployment.

Certificate Requirements

Course Number Course Title Credit Hours
First Semester (Fall)
FIR-140 Firefighter I - Unit I 3
FIR-141 Firefighter I - Unit II 3
FIR-142 Firefighter I - Unit III 3
FIR-143 Firefighter I - Unit IV 3
Total program credit hours 14

Second Semester (Spring)
EMS-200 Emergency Medical Technician 8
FIR-110 History and Philosophy of the Fire Service 2
FIR-213 Principles of Emergency Services 3
Total program credit hours 13

Total program credit hours 22

Fire Science Certificate

Any 6 of the Following Courses

Course Number Course Title Credit Hours
FIR-124 Building Construction 3
FIR-127 Fire Behavior and Combustion 3
FIR-130 Fundamentals of Fire Prevention 3
FIR-146 Firefighting Tactics & Strategy 3
FIR-150 Fire Detection and Suppression Systems 3
FIR-180 Chemistry of Hazardous Materials 3
FIR-183 Hazardous Materials Management 3
FIR-280 Instructional Techniques for Fire Service Training 3
FIR-330 Fire Service Company Officer 3
FIR-400 Fire & Emergency Services Safety & Survival 3
Total program credit hours 18

*Student with a COMPASS Algebra score below 43 (or ACT math score below 18) should strongly consider taking MAT-076 Prep for College Math in the first semester.
Food Service Assistant

Hospitality Arts
The Hotel at Kirkwood Center
319-848-8770
www.kirkwood.edu/hospitality

Entry time
Fall or Spring

Award
Diploma
1 year (2 semesters)

The Food Service Assistant program provides students with the technical knowledge and skills required to enter the quality food preparation and service industry. Students prepare for their careers through practical experience in food preparation. Students are required to purchase uniforms and tools to use when in labs and kitchens.

Students assist in the operation of The Café on Kirkwood's main campus.

Food service workers assist cooks and chefs with the daily operations of kitchen and dining facilities. They perform a variety of tasks involved in preparing hot and cold food.

Career opportunities: food preparation worker; cooking assistant; cafeteria attendant.

Required Courses

<table>
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<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>HCM-100</td>
<td>Sanitation and Safety</td>
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<td>HCM-109</td>
<td>Kitchen Essentials</td>
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<td>HCM-138</td>
<td>Food Fundamentals</td>
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<tr>
<td>HCM-147</td>
<td>Culinary Techniques</td>
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<td>HCM-260</td>
<td>Hospitality Math</td>
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<td>HCM-324</td>
<td>College Orientation</td>
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<td>COM-723</td>
<td>Workplace Communications</td>
<td>3</td>
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<td></td>
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<td>MGT-145</td>
<td>Human Relations in Management</td>
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<tr>
<td>HCM-161</td>
<td>Stocks and Sauces</td>
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<td>HCM-269</td>
<td>Garde Manger</td>
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<td>HCM-117</td>
<td>Bakery Basics</td>
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<td>HCM-231</td>
<td>Nutrition</td>
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<td>HCM-932</td>
<td>Internship</td>
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<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
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<tr>
<td>Total program credit hours</td>
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Geographic Information Systems (GIS)

Business & Information Technology
203 Nielsen Hall
319-398-5416
www.kirkwood.edu/businessdept

Entry time
Fall

Award
Associate of Applied Science degree
2 years (4 semesters)
Certificate (See advisor for information)
1 year (2 semesters)

Track cougars. Locate wetlands. Map highways. Track shipments. Locate real estate. Map floods. GIS does it all. A degree in GIS allows you to combine your interest in technology with an interest in many other fields. GIS is rapidly gaining recognition as a primary means of dealing with information stored on maps. GIS careers exist in every imaginable discipline, with many applications in resource and environmental management, commercial business and marketing, urban and regional planning, defense, map production, research and public health.

Geospatial technology is one of the U.S. Department of Labor's High Demand/High Technology career fields. The demand for individuals with this training is global and will continue to grow faster than the supply of qualified graduates. Community colleges are critical to the sustainability and growth of the geospatial workforce. Kirkwood's two-year degree provides students with the skills necessary to work in this exciting, high-tech field.

Interested students can advance to a four-year degree by taking advantage of our unique relationship with University of Northern Iowa's Geography department.

Career opportunities: engineering technician; GIS analyst; GIS application specialist; GIS data specialist; GIS mapping assistant; GIS mapping technician; GIS specialist; GIS technician; surveyor technician.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
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<tr>
<td>ENG-105</td>
<td>Composition I</td>
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<td>GIS-110</td>
<td>Survey of Geographic Information Systems</td>
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<td>GIS-112</td>
<td>Introduction to ArcGIS</td>
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<td>MAT-107</td>
<td>Survey of Math OR</td>
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<td>MAT-102</td>
<td>Intermediate Algebra</td>
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<td>Second Semester</td>
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<td>CIS-128</td>
<td>Programming Concepts OR</td>
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<tr>
<td>CIS-121</td>
<td>Introduction to Programming Logic</td>
<td></td>
</tr>
</tbody>
</table>
Career Programs

GIS-120 Geospatial Data Collection 3
GIS-122 Governmental GIS 3
MAT-155 Statistical Ideas OR 3
MAT-157 Statistics 3
MGT-145 Human Relations in Management OR 3

PSY-111 Introduction to Psychology 3

Third Semester

CAD-928 Independent Study 1
CIS-307 Introduction to Databases 3
GIS-210 Mapping for Decision Making 3
GIS-212 Managing GIS Projects 3

Elective 1 3
Elective 2 3

Fourth Semester

ENG-106 Composition II OR 3
ENG-108 Composition II: Technical Writing OR 3
SPC-101 Fundamentals of Oral Communication 3
GIS-214 Internet Mapping Services 3
GIS-240 GIS Projects OR 3
BUS-932 Internship 3

Elective 1 3
Elective 2 3

Total program credit hours 62

Electives

Students should choose electives that focus on their particular area of interest with GIS.

AGP-440 Ag Applications of Digital Imagery 3
BIO-104 Introductory Biology with Lab 3
BIO-110 Basic Biological Concepts 3
BIO-195 Human Evolution 3
BUS-102 Introduction to Business 3
BUS-290 Employment Search and Workplace Success 1
CIS-207 Fundamentals of Web Programming 3
CON-134 Surveying and Site Layout 2
CRJ-100 Introduction to Criminal Justice 3
CRJ-200 Criminology 3
FIR-183 Hazardous Materials Management 3
GEO-115 Human Geography 3
GEO-121 World Regional Geography 3
GIS-130 Remote Sensing 3
GIS-220 GIS Field Study 3
MGT-121 Project Management Basics 3
MGT-300 Introduction to Entrepreneurship 3
PHS-170 Physical Geology 3
PHS-175 Environmental Geology 3
SOC-115 Social Problems 3
WAT-306 Wastewater Collection Systems 4

Geographic Information Systems (GIS) Certificate Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GIS-110</td>
<td>Survey of Geographic Information Systems</td>
<td>3</td>
</tr>
<tr>
<td>GIS-112</td>
<td>Introduction to ArcGIS</td>
<td>3</td>
</tr>
<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>GIS-207</td>
<td>Governmental GIS</td>
<td>3</td>
</tr>
<tr>
<td>Introduction to Databases</td>
<td></td>
<td>3</td>
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<tr>
<td>GIS-120</td>
<td>Geospatial Data Collection</td>
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<tr>
<td>GIS-122</td>
<td>Governmental GIS</td>
<td>3</td>
</tr>
<tr>
<td>Total program credit hours</td>
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<td>18</td>
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</tbody>
</table>

1 Your COMPASS writing score will determine if you need to take prerequisite classes.
2 Your COMPASS math score will determine if you need to take prerequisite classes.
3 Students planning to transfer to a four-year college or university may substitute PSY-111 Introduction to Psychology for MGT-145 Human Relations in Management.
4 Students should contact the program coordinator about selecting elective course work.

Students interested in pursuing a four-year degree in GIS should meet with the program coordinator prior to registering.

Golf Course and Athletic Turfgrass

Ag Sciences
Horticulture/Floral Careers
319-398-5441
www.kirkwood.edu/agrisciences

Entry time
Summer or Fall

Award
Associate of Applied Science degree
2 years (4 semesters, 1 summer)
Diploma (See advisor for information)
3 semesters

Through the classroom and extensive lab experiences, you'll learn design, installation and maintenance of turfgrass systems; understand cultural and chemical turf controls; install, design and repair irrigation systems; and operate and maintain turf equipment. You'll also focus on computer literacy, team building, club activities and leadership responsibilities. You'll have the best hands-on opportunities turfgrass education has to offer at our lab facilities.

Career opportunities: golf course assistant superintendent; athletic field manager; grounds director; lawn care company
foreman; sales representative for an equipment, fertilizer, chemical, seed, sod or spray company.

### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>AGH-110</td>
<td>Success in Horticulture</td>
<td>1</td>
</tr>
<tr>
<td>AGH-112</td>
<td>Introduction to Turfgrass Management</td>
<td>3</td>
</tr>
<tr>
<td>AGH-123</td>
<td>Woody Plant Materials</td>
<td>3</td>
</tr>
<tr>
<td>AGH-144</td>
<td>Landscape Construction</td>
<td>3</td>
</tr>
<tr>
<td>AGH-236</td>
<td>Plant Material Maintenance</td>
<td>3</td>
</tr>
<tr>
<td>AGH-150</td>
<td>Equipment Operations Lab</td>
<td>1</td>
</tr>
<tr>
<td>AGH-157</td>
<td>Equipment Operations</td>
<td>2</td>
</tr>
<tr>
<td>AGH-144</td>
<td>Landscape Construction</td>
<td>3</td>
</tr>
<tr>
<td>AGH-123</td>
<td>Woody Plant Materials</td>
<td>3</td>
</tr>
<tr>
<td>AGH-144</td>
<td>Landscape Construction</td>
<td>3</td>
</tr>
<tr>
<td>AGH-236</td>
<td>Plant Material Maintenance</td>
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### Spring Term I

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AGH-102</td>
<td>Horticulture Math</td>
<td>3</td>
</tr>
<tr>
<td>AGH-253</td>
<td>Insects and Diseases</td>
<td>3</td>
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<tr>
<td>AGH-279</td>
<td>Botany for Horticulture</td>
<td>2</td>
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<tr>
<td>AGH-405</td>
<td>Golf Course Maintenance</td>
<td>3</td>
</tr>
<tr>
<td>COM-723</td>
<td>Workplace Communications OR</td>
<td>3</td>
</tr>
<tr>
<td>ENG-105</td>
<td>Composition I</td>
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</table>

### Fall Term II

<table>
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<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>AGH-166</td>
<td>Turfgrass and Landscape Irrigation</td>
<td>2</td>
</tr>
<tr>
<td>AGH-282</td>
<td>Pesticide Application Certification - Horticulture</td>
<td>1</td>
</tr>
<tr>
<td>AGH-400</td>
<td>Athletic Field Maintenance</td>
<td>3</td>
</tr>
<tr>
<td>AGH-405</td>
<td>Golf Course Maintenance</td>
<td>3</td>
</tr>
<tr>
<td>BUS-161</td>
<td>Human Relations</td>
<td>3</td>
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<tr>
<td>COM-744</td>
<td>Oral Communication in the Workplace</td>
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### Summer

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AGC-313</td>
<td>Leadership in Agriculture**</td>
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<tr>
<td>AGH-102</td>
<td>Horticulture Math</td>
<td>3</td>
</tr>
<tr>
<td>AGH-123</td>
<td>Woody Plant Materials</td>
<td>3</td>
</tr>
<tr>
<td>AGH-144</td>
<td>Landscape Construction</td>
<td>3</td>
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<tr>
<td>AGH-236</td>
<td>Plant Material Maintenance</td>
<td>3</td>
</tr>
<tr>
<td>AGH-150</td>
<td>Equipment Operations Lab</td>
<td>1</td>
</tr>
<tr>
<td>AGH-157</td>
<td>Equipment Operations</td>
<td>2</td>
</tr>
<tr>
<td>AGH-221</td>
<td>Principles of Horticulture</td>
<td>3</td>
</tr>
<tr>
<td>AGH-211</td>
<td>Advanced Turfgrass Management</td>
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<td>COM-723</td>
<td>Workplace Communications OR</td>
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<tr>
<td>ENG-105</td>
<td>Composition I</td>
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### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AGH-110</td>
<td>Success in Horticulture</td>
<td>1</td>
</tr>
<tr>
<td>AGH-112</td>
<td>Introduction to Turfgrass Management</td>
<td>3</td>
</tr>
</tbody>
</table>

*Internship: Coordinator approval or 24 credit hours
**Leadership in Agriculture can be taken in either spring or fall.

### Graphic Communication Technology

**Business & Information Technology**

203 Nielsen Hall
319-398-5416
www.kirkwood.edu/businessdept

**Entry time**

Fall, Spring, Summer

**Award**

Associate of Applied Science degree
2 years (4 semesters, 1 summer)

Those interested in our program should have a strong interest in managing, manipulating and merging text and graphic components used to communicate information that sells a product or idea. Skills and interest in art and photography will increase enjoyment and overall design options within our program. Students should be able to work under tight deadlines both individually and as part of a team. Students need to be open to the fact that not all graphic solutions are computer-based.

The Graphic Communication Technology program prepares students for employment in the technical design and production area of the graphic communication industry. Following an introduction to the graphics industry, the core program develops students' practical knowledge and provides hands-on experience with current standards in graphic communication. Students learn design, layout, image
manipulation and illustration principles to applying final graphics used in 2D design, print, web and motion graphics, plus receive extensive experience working on Apple computers using industry standard software from Adobe.

**Career opportunities:** printing and publishing companies; advertising agencies; Web design; in-house graphics; design and marketing departments.

### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADM-133</td>
<td>Business Math and Calculators(^2)</td>
<td>3</td>
</tr>
<tr>
<td>ART-301</td>
<td>Design Fundamentals</td>
<td>3</td>
</tr>
<tr>
<td>ENG-101</td>
<td>Elements of Writing(^1)</td>
<td>3</td>
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<tr>
<td>GRA-101</td>
<td>Survey of Graphic Communications(^3)</td>
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<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
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<td><strong>Total</strong></td>
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**Second Semester (Spring)**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>ART-133</td>
<td>Drawing</td>
<td>3</td>
</tr>
<tr>
<td>ART-184</td>
<td>Photography(^4)</td>
<td>3</td>
</tr>
<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
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<tr>
<td>ENG-105</td>
<td>Composition I</td>
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</tr>
<tr>
<td>MKT-150</td>
<td>Principles of Advertising</td>
<td>3</td>
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<tr>
<td><strong>Total</strong></td>
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**Summer**

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credit Hours</th>
</tr>
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<tbody>
<tr>
<td>GRA-127</td>
<td>Illustrator I</td>
<td>3</td>
</tr>
<tr>
<td>GRA-131</td>
<td>Digital Layout</td>
<td>3</td>
</tr>
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<td><strong>Total</strong></td>
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**Third Semester (Fall)**

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<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>CIS-207</td>
<td>Fundamentals of Web Programming</td>
<td>3</td>
</tr>
<tr>
<td>GRA-128</td>
<td>Illustrator II</td>
<td>3</td>
</tr>
<tr>
<td>GRA-132</td>
<td>Digital Layout II</td>
<td>3</td>
</tr>
<tr>
<td>GRA-140</td>
<td>Digital Imaging</td>
<td>3</td>
</tr>
<tr>
<td>GRA-195</td>
<td>Introduction to Web Media</td>
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</tr>
<tr>
<td><strong>Total</strong></td>
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</table>

**Fourth Semester (Spring)**

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>GRA-141</td>
<td>Digital Imaging II</td>
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<tr>
<td>GRA-152</td>
<td>Web Design II</td>
<td>4.5</td>
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<tr>
<td>GRA-153</td>
<td>Web Media II</td>
<td>3</td>
</tr>
<tr>
<td>GRA-192</td>
<td>Production Techniques</td>
<td>4.5</td>
</tr>
<tr>
<td>GRA-199</td>
<td>Graphic Communication Job Shadow</td>
<td>1</td>
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<tr>
<td><strong>Total</strong></td>
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</table>

**Total program credit hours**

67

**Optional Courses**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>GRA-924</td>
<td>Honors Project</td>
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</tr>
<tr>
<td>GRA-928</td>
<td>Independent Study</td>
<td>1</td>
</tr>
</tbody>
</table>

\(^{2}\)Your COMPASS math score will determine if you need to take prerequisite classes.

\(^{3}\)GRA-101 Survey of Graphic Communication must be completed for admission into the technical sequence of graphics (GRA) courses.

\(^{4}\)Students may substitute ART-186 Digital Photography for ART-184 Photography.

Note: Students planning to transfer to a four-year college or university should verify transfer credits before proceeding with this program. See your advisor to discuss appropriate course selection.

---

**Health Information Technology**

**Allied Health**

2164 Linn Hall
319-398-5566
www.kirkwood.edu/alliedhealth

**Entry time**

Fall

**Award**

Associate of Applied Science degree
2 years (5 semesters, including 1 summer)
Medical Coding Diploma
1 year (3 semesters including 1 summer)

**Accreditation**

The Health Information Technology program is accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM). Graduates are eligible to take the national certification exam offered by the American Health Information Management Association (AHIMA) to become a registered health information technician (RHIT).

The Health Information Technology program is primarily offered online, with the exception of some courses and clinical rotations. The clinical rotations will need to be completed in a clinic setting throughout the state of Iowa. Students who complete the first three semesters of the Health Information Technology program at Kirkwood will earn a diploma in Medical Coding.

Health information technology (HIT) professionals collect, analyze and manage patient health information, then communicate with patients, physicians, nurses, administrators, lawyers and insurance companies about the information in these records.

Health information technicians assemble patient health information and make sure medical records are complete. HITs code each diagnosis and procedure and may communicate with physicians to clarify diagnoses or obtain additional information. HITs provide reliable and valid information that drives the health care industry.
Kirkwood’s HIT program focuses on medical coding as well as the management of health information. In addition to taking courses on campus, students also complete practicums at health facilities throughout the state.

**Career opportunities:** hospitals; long-term care facilities; physicians' offices; correctional facilities; home health agencies; mental health agencies; insurance companies; computer software companies.

### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-168</td>
<td>Human Anatomy &amp; Physiology I with Lab**.</td>
<td>4</td>
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<tr>
<td>CSC-110</td>
<td>Introduction to Computers***+</td>
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</tr>
<tr>
<td>HSC-115</td>
<td>Medical Terminology***+</td>
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**First Semester**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-173</td>
<td>Human Anatomy &amp; Physiology II with Lab*</td>
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<tr>
<td>HIT-220</td>
<td>Introduction to Medical Coding+</td>
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<tr>
<td>HIT-360</td>
<td>Introduction to HIT+</td>
<td>3</td>
</tr>
<tr>
<td>HSC-107</td>
<td>Professionals in Health*</td>
<td>2</td>
</tr>
<tr>
<td>MAT-731</td>
<td>Introduction to Math*</td>
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**Second Semester**

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>BCA-213</td>
<td>Intermediate Computer Business Applications**+</td>
<td>3</td>
</tr>
<tr>
<td>HIT-240</td>
<td>Advanced Coding &amp; Classification+</td>
<td>3</td>
</tr>
<tr>
<td>HIT-495</td>
<td>Medical Office Management- I*</td>
<td>2.5</td>
</tr>
<tr>
<td>HIT-550</td>
<td>Professional Practice Experience I*</td>
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</tr>
<tr>
<td>HSC-142</td>
<td>Elements of Pharmacology**+</td>
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**Third Semester**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>HIT-280</td>
<td>CPT-4 Coding+</td>
<td>3</td>
</tr>
<tr>
<td>HIT-291</td>
<td>Reimbursement Methods+</td>
<td>2.5</td>
</tr>
<tr>
<td>HIT-551</td>
<td>Professional Practice Experience II*</td>
<td>1</td>
</tr>
<tr>
<td>HSC-217</td>
<td>Introduction to Pathology**+</td>
<td>3</td>
</tr>
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</table>

**Fourth Semester**

<table>
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<th>Course Title</th>
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<tbody>
<tr>
<td>ENG-105</td>
<td>Composition I**+</td>
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<tr>
<td>HIT-350</td>
<td>Health Information Systems+</td>
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<tr>
<td>HIT-420</td>
<td>Legal Aspects of Health Information+</td>
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<tr>
<td>HIT-431</td>
<td>Quality Improvement+</td>
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<tr>
<td>HIT-552</td>
<td>Professional Practice Experience III*</td>
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**Fifth Semester**

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<tr>
<td>HIT-450</td>
<td>Health Statistics+</td>
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<tr>
<td>HIT-490</td>
<td>Health Management &amp;</td>
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### Medical Coding Diploma-First 3 Semesters of HIT

<table>
<thead>
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<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIO-173</td>
<td>Human Anatomy &amp; Physiology II with Lab*</td>
<td>4</td>
</tr>
<tr>
<td>HIT-220</td>
<td>Introduction to Medical Coding+</td>
<td>2.5</td>
</tr>
<tr>
<td>HIT-360</td>
<td>Introduction to HIT+</td>
<td>3</td>
</tr>
<tr>
<td>HSC-107</td>
<td>Professionals in Health*</td>
<td>2</td>
</tr>
<tr>
<td>MAT-731</td>
<td>Introduction to Math*</td>
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**Second Semester**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BCA-213</td>
<td>Intermediate Computer Business Applications**+</td>
<td>3</td>
</tr>
<tr>
<td>HIT-240</td>
<td>Advanced Coding &amp; Classification+</td>
<td>3</td>
</tr>
<tr>
<td>HIT-495</td>
<td>Medical Office Management- I*</td>
<td>2.5</td>
</tr>
<tr>
<td>HIT-550</td>
<td>Professional Practice Experience I*</td>
<td>2.5</td>
</tr>
<tr>
<td>HSC-142</td>
<td>Elements of Pharmacology**+</td>
<td>1</td>
</tr>
</tbody>
</table>

**Third Semester**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIT-280</td>
<td>CPT-4 Coding+</td>
<td>3</td>
</tr>
<tr>
<td>HIT-291</td>
<td>Reimbursement Methods+</td>
<td>2.5</td>
</tr>
<tr>
<td>HIT-551</td>
<td>Professional Practice Experience II*</td>
<td>1</td>
</tr>
<tr>
<td>HSC-217</td>
<td>Introduction to Pathology**+</td>
<td>3</td>
</tr>
</tbody>
</table>

**Total program credit hours** 77

*Courses may be taken before beginning the program.

**Courses must be completed with a C- or better prior to admission into the program.

+Courses are available online.

Courses not available online at this time.

### Horse Science Technology

**Ag Sciences**

Washington Hall  
319-398-5609  
www.kirkwood.edu/agriciences
The Horse Science Technology program prepares students for a variety of positions in equine industry. More than 50 percent of instruction takes place in a laboratory setting using the wide variety of Kirkwood-owned horses. Advanced students can train their own horses or horses sponsored for training.

The first year focuses on experiencing the equine industry. Studies include general health care, horsemanship, facility maintenance and mechanics. The second year allows the student to choose a course of study in equine training or equine business management. All students will take the core courses in conformation, lameness, genetics and breeding management.

Career opportunities: assistant trainers; associates in feed and tack stores; equine horse show and racehorse grooms; breeding farm managers; equine marketing assistants; equine health care assistants; horse show manager.

### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGE-261</td>
<td>Legs and Hoof</td>
<td>3</td>
</tr>
<tr>
<td>AGE-290</td>
<td>Horse Projects AND</td>
<td>2</td>
</tr>
<tr>
<td>AGE-230</td>
<td>Training 1 OR</td>
<td>3</td>
</tr>
<tr>
<td>AGE-272</td>
<td>5 credits from AGB, MKT or MGT Elective Courses</td>
<td>17</td>
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</table>

#### First Semester (Fall)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>AGC-210</td>
<td>Employment Seminar</td>
<td>1</td>
</tr>
<tr>
<td>AGE-202</td>
<td>Equine Genetics and Breeding Management</td>
<td>3</td>
</tr>
<tr>
<td>AGE-290</td>
<td>Horse Projects AND</td>
<td>2</td>
</tr>
<tr>
<td>AGE-231</td>
<td>Training II OR</td>
<td>3</td>
</tr>
<tr>
<td>AGE-272</td>
<td>5 credits from AGB, MKT or MGT Elective Courses</td>
<td>15</td>
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<tr>
<td>BUS-161</td>
<td>Human Relations OR</td>
<td>3</td>
</tr>
<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
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</tr>
<tr>
<td>COM-723</td>
<td>Workplace Communications</td>
<td>3</td>
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#### Fourth Semester (Spring)

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AGE-161</td>
<td>Instructing Horsemanship</td>
<td>3</td>
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<tr>
<td>AGE-206</td>
<td>Advanced Breeding Management</td>
<td>2</td>
</tr>
<tr>
<td>AGE-213</td>
<td>Management of the Racing Thoroughbred</td>
<td>1</td>
</tr>
<tr>
<td>AGE-241</td>
<td>Colt Starting</td>
<td>3</td>
</tr>
<tr>
<td>AGE-244</td>
<td>Long Lining and Driving Techniques</td>
<td>3</td>
</tr>
<tr>
<td>AGE-253</td>
<td>Horse Shows</td>
<td>2</td>
</tr>
<tr>
<td>AGE-256</td>
<td>Introduction to Farrier Science</td>
<td>1</td>
</tr>
<tr>
<td>AGE-270</td>
<td>Equestrian Drill Team</td>
<td>2</td>
</tr>
<tr>
<td>AGE-295</td>
<td>Western Style Training Project</td>
<td>3</td>
</tr>
<tr>
<td>AGS-307</td>
<td>Professional Horse Judging</td>
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### Total program credit hours

**72**

#### Optional Courses

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<tbody>
<tr>
<td>AGB-325</td>
<td>Agricultural Construction and Repair</td>
<td>3</td>
</tr>
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<td>AGE-107</td>
<td>Trail Riding</td>
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<tr>
<td>AGE-110</td>
<td>Introduction to Basic Riding</td>
<td>2</td>
</tr>
<tr>
<td>AGE-111</td>
<td>Advanced Western Horsemanship</td>
<td>3</td>
</tr>
<tr>
<td>AGE-112</td>
<td>Advanced Horsemanship Techniques</td>
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</tr>
<tr>
<td>AGE-161</td>
<td>Instructing Horsemanship</td>
<td>3</td>
</tr>
<tr>
<td>AGE-206</td>
<td>Advanced Breeding Management</td>
<td>2</td>
</tr>
<tr>
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<tr>
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<td>2</td>
</tr>
<tr>
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<tr>
<td>AGE-270</td>
<td>Equestrian Drill Team</td>
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<tr>
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<td>Western Style Training Project</td>
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<tr>
<td>AGS-307</td>
<td>Professional Horse Judging</td>
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### Career Programs

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<th>Credit Hours</th>
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<tbody>
<tr>
<td>AGE-209</td>
<td>Equine Anatomy &amp; Physiology</td>
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<tr>
<td>AGE-108</td>
<td>Horsemanship I</td>
<td>3</td>
</tr>
<tr>
<td>AGE-169</td>
<td>Equine Fitting &amp; Grooming</td>
<td>3</td>
</tr>
<tr>
<td>AGC-130</td>
<td>Mathematics I - Agriculture</td>
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<tr>
<td>AGC-313</td>
<td>Leadership in Agriculture</td>
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<tr>
<td>AGE-211</td>
<td>Equine Business Management I</td>
<td>3</td>
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<tr>
<td>COM-744</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
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<tr>
<td>AGE-121</td>
<td>Horse Evaluation</td>
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<tr>
<td>AGE-130</td>
<td>Horse Nutrition</td>
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<td>AGE-212</td>
<td>Equine Business Management II</td>
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### Third Semester (Fall)

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<tr>
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<td>Instructing Horsemanship</td>
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<td>Management of the Racing Thoroughbred</td>
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<tr>
<td>AGE-241</td>
<td>Colt Starting</td>
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<td>AGE-244</td>
<td>Long Lining and Driving Techniques</td>
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<tr>
<td>AGE-253</td>
<td>Horse Shows</td>
<td>2</td>
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<tr>
<td>AGE-256</td>
<td>Introduction to Farrier Science</td>
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<td>AGE-295</td>
<td>Western Style Training Project</td>
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<td>AGS-307</td>
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Career Programs

Second Semester

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<tr>
<td>AGC-103</td>
<td>AG Computer</td>
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<td>AGE-170</td>
<td>Health and Performance</td>
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<tr>
<td>Management of the Horse</td>
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<tr>
<td>AGE-109</td>
<td>Horsemanship II</td>
<td>3</td>
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<tr>
<td>COM-744</td>
<td>Oral Communication in the Workplace</td>
<td>3</td>
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<tr>
<td>AGE-172</td>
<td>Equine Ground Work</td>
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</tr>
<tr>
<td>AGE-211</td>
<td>Equine Business Management</td>
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</table>

Total program credit hours 17

Basic Equine Studies Certificate

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<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>AGE-169</td>
<td>Equine Fitting &amp; Grooming</td>
<td>3</td>
</tr>
<tr>
<td>AGE-170</td>
<td>Health and Performance</td>
<td>3</td>
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<tr>
<td>Management of the Horse</td>
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<tr>
<td>AGE-121</td>
<td>Horse Evaluation</td>
<td>3</td>
</tr>
<tr>
<td>AGE-212</td>
<td>Equine Business Management II</td>
<td>3</td>
</tr>
<tr>
<td>AGE-108</td>
<td>Horsemanship I</td>
<td>3</td>
</tr>
<tr>
<td>AGE-110</td>
<td>Introduction to Basic Riding</td>
<td>OR</td>
</tr>
<tr>
<td>AGE-270</td>
<td>Equestrian Drill Team</td>
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</table>

Total program credit hours 15

Equine Health Certificate

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AGE-209</td>
<td>Equine Anatomy &amp; Physiology</td>
<td>2</td>
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<tr>
<td>AGE-170</td>
<td>Health and Performance</td>
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</tr>
<tr>
<td>Management of the Horse</td>
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<tr>
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<tr>
<td>AGE-261</td>
<td>Legs and Hoof</td>
<td>3</td>
</tr>
<tr>
<td>AGE-202</td>
<td>Equine Genetics and Breeding</td>
<td>3</td>
</tr>
<tr>
<td>Management</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total program credit hours 14

*May be taken in the first or second semester.
**Taken in summer after all degree requirements are completed.

Hotel Management

Hospitality Arts
The Hotel at Kirkwood Center
319-848-8770
www.kirkwood.edu/hospitality

Entry time
Fall

Award
Associate of Applied Science degree
2 years (4 semesters, 1 summer)
Diploma
1 year (2 semesters, 1 summer)

Industry endorsements earned
National Career Readiness Certificate; National Restaurant Association's Food Protection Manager Certificate

The goal of this program is to prepare students to work in entry-level positions of responsibility within the hospitality industry. This industry has been expanding as part of the growing service economy, and there is a demand for individuals with a college education and work experience.

Students in this program learn about day-to-day operations of a lodging facility from practical experience working in The Hotel at Kirkwood Center. Course work exposes students to food and dining, management, hotel operations and other hospitality business topics.

Internships and on-the-job training are also important components of this program to help prepare students to work in the field. Students are required to complete an internship at The Hotel at Kirkwood Center, which is a full-service hotel. Students are required to purchase uniforms when training at The Hotel at Kirkwood Center. Students are also required to complete an externship at another property to experience different segments of the hotel industry.

Students may participate in the Disney Institute college program to complete part of their internship requirements. This exciting program is a paid internship that offers students unique benefits while working, learning and living at the Walt Disney Resort in Orlando, Florida.

Career opportunities: meeting/event planner; reservations supervisor; front office manager; sales manager; banquet captain; concierge; housekeeping supervisor; convention services manager; room service manager.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COM-723</td>
<td>Workplace Communications OR</td>
<td>3</td>
</tr>
<tr>
<td>ENG-105</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>HCM-100</td>
<td>Sanitation and Safety</td>
<td>2</td>
</tr>
<tr>
<td>HCM-260</td>
<td>Hospitality Math OR</td>
<td>3</td>
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<tr>
<td>MAT-140</td>
<td>Finite Math2</td>
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<tr>
<td>HCM-324</td>
<td>College Orientation</td>
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<tr>
<td>HCM-600</td>
<td>Introduction to Lodging Operations</td>
<td>2</td>
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<tr>
<td>HCM-601</td>
<td>Housekeeping and Laundry Operations</td>
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Total program credit hours 17
Second Semester

<table>
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<tr>
<th>Course Number</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>HCM-204</td>
<td>Service Techniques</td>
<td>3</td>
</tr>
<tr>
<td>HCM-279</td>
<td>Hospitality Accounting OR</td>
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</tr>
<tr>
<td>ACC-152</td>
<td>Financial Accounting</td>
<td>4</td>
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<tr>
<td>HCM-330</td>
<td>Hospitality Personnel Management</td>
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</tr>
<tr>
<td>HCM-597</td>
<td>Front Office Management</td>
<td>4</td>
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<tr>
<td>HCM-602</td>
<td>Introduction to Food and Bar Operations</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Summer after first year</td>
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<tr>
<td>HCM-933</td>
<td>Hotel Externship</td>
<td>3</td>
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<td></td>
<td>Total diploma credit hours</td>
<td>16</td>
</tr>
</tbody>
</table>
| Third Semester
| HCM-213       | Service Management (Lab)                   | 4            |
| HCM-310       | Hospitality Law                            | 3            |
| HCM-599       | Engineering and Risk Management            | 1            |
| HCM-934       | Internship Seminar                         | 2            |
| HCM-935       | Hotel Internship                           | 1            |
| MGT-145       | Human Relations in Management              | 3            |
| PSY-111       | Introduction to Psychology                 | 3            |
| MKT-110       | Principles of Marketing                    | 3            |
|               | Total diploma credit hours                | 3            |
| Fourth Semester
| COM-744       | Oral Communication/Workplace               | 3            |
| ENG-106       | Composition II                             | 3            |
| FLS-118       | Spanish for Professionals: Hospitality     | 3            |
| HCM-251       | Purchasing, Receiving and Inventory        | 2            |
| HCM-603       | Hotel Sales and Catering                   | 3            |
| HCM-614       | Leadership in Hospitality                  | 3            |
| HCM-924       | Honors Project (optional)                  | 1            |
|               | Total program credit hours                | 14           |

Total program credit hours 67

Hospitality Management Diploma

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
</table>
| First Semester
| ADM-928       | Independent Study (E-Portfolio)            | 1            |
| COM-723       | Workplace Communication                    | 3            |
| CSC-110       | Introduction to Computers                  | 3            |
| HCM-600       | Introduction to Lodging Operations         | 2            |
| MGT-145       | Human Relations in Management              | 3            |
| SPC-112       | Public Speaking                            | 3            |
|               | Second Semester                            |              |
| ADM-928       | Independent Study (E-Portfolio)            | 1            |
| BUS-928       | Independent Study (American Government)    | 3            |
| HCM-330       | Hospitality Personnel                      | 3            |

Human Services

Social Sciences
1008 Cedar Hall
319-398-1241
www.kirkwood.edu/socialsciences

Entry time
Fall, Spring, Summer

Award
Associate of Applied Science degree
2 years (5 semesters)
Associate of Arts Liberal Arts (transfer degree)

The Human Services program has a strong focus on human behaviors, social policy, social programs, communication, record keeping, interviewing, observing, group processes and problem solving. An important aspect of this program
is student involvement with community agencies, including observations and hands-on experiences.

The Behavioral Health Paraprofessional Diploma has a strong focus on community mental health and substance abuse issues. The students in the diploma program will engage with community providers, organizations and institutions to provide support and resources to individuals dealing with the above listed issues/concerns. Upon completion of the diploma and an Associate's degree the individual student may apply and sit for the national exam to become a certified alcohol and drug counselor.

**Career opportunities:** adolescent residential centers; advocacy groups; centers for drug and alcohol abuse; community action programs; community education and prevention programs; community mental health centers; correctional centers; crisis centers; facilities for people with mental illness; group homes/supervised apartment living; nursing homes; program for seniors; social/recreational programs; supported employment services.

### Required Courses

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
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<tr>
<td>ENG-105</td>
<td>Composition I</td>
<td>3</td>
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<tr>
<td>SOC-110</td>
<td>Introduction to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>HSV-101</td>
<td>Human Services Career</td>
<td>3</td>
</tr>
<tr>
<td>HSV-100</td>
<td>Mandatory Reporting Preparation</td>
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</tr>
<tr>
<td>HSV-131</td>
<td>Basic Problem Solving Skills</td>
<td>3</td>
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<tr>
<td>HSV-200</td>
<td>Health and Psychosocial Rehabilitation</td>
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<td>Health and Psychosocial Rehabilitation</td>
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<tr>
<td>HSV-813</td>
<td>Alcohol and Drug Counselor Field Experience and Seminar I</td>
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<td>HSV-814</td>
<td>Alcohol and Drug Counselor Field Experience and Seminar II</td>
<td>6</td>
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<td>13</td>
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<tr>
<td>ENG-106</td>
<td>Composition II</td>
<td>3</td>
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<td>SPC-101</td>
<td>Fundamentals of Oral</td>
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<tr>
<td>PSY-111</td>
<td>Introduction to Psychology</td>
<td>3</td>
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<td>HSV-110</td>
<td>Human Service Policy and Programs</td>
<td>3</td>
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<td>HSV-282</td>
<td>Health and Psychosocial Rehabilitation</td>
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<td>HSV-201</td>
<td>Loss, Trauma and Resilience</td>
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<td>HSV-287</td>
<td>Counseling Theories and Techniques</td>
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<td>HSV-292</td>
<td>Substance Abuse and Treatment</td>
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<td>HSV-298</td>
<td>Observation Skills</td>
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<td>HSV-120</td>
<td>Basic Problem Solving Skills</td>
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<tr>
<td>HSV-131</td>
<td>Loss, Trauma and Resilience</td>
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<td>HSV-292</td>
<td>Substance Abuse and Treatment</td>
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<td>HSV-287</td>
<td>Counseling Theories and Techniques</td>
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<td>Adaptation Strategies</td>
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<td>HSV-924</td>
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<tr>
<td>HSV-928</td>
<td>Independent Study</td>
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### Behavioral Health Paraprofessional Diploma Requirements

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<tr>
<th>Course Number</th>
<th>Course Title</th>
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<tr>
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<td>Human Services Career</td>
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<td>HSV-100</td>
<td>Mandatory Reporting Preparation</td>
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<tr>
<td>HSV-131</td>
<td>Basic Problem Solving Skills</td>
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<td>HSV-292</td>
<td>Substance Abuse and Treatment</td>
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<td>HSV-287</td>
<td>Counseling Theories and Techniques</td>
<td>3</td>
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<tr>
<td>HSV-200</td>
<td>Adaptation Strategies</td>
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</tr>
<tr>
<td>HSV-120</td>
<td>Observation Skills</td>
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<td>HSV-131</td>
<td>Basic Problem Solving Skills</td>
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<tr>
<td>HSV-201</td>
<td>Loss, Trauma and Resilience</td>
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<td>HSV-287</td>
<td>Counseling Theories and Techniques</td>
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<tr>
<td>HSV-292</td>
<td>Substance Abuse and Treatment</td>
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<tr>
<td>HSV-287</td>
<td>Counseling Theories and Techniques</td>
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<td>HSV-200</td>
<td>Adaptation Strategies</td>
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<tr>
<td>HSV-120</td>
<td>Marriage and Family</td>
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<tr>
<td>CRJ-100</td>
<td>Introduction to Criminal Justice</td>
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<td>Counseling Theories and Techniques</td>
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<td><strong>Third Semester</strong></td>
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<tr>
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### Total program credit hours

- First Semester: 13 credit hours
- Second Semester: 15 credit hours
- Third Semester: 15 credit hours
- Fourth Semester: 15 credit hours
- Total program credit hours: 76

### Optional Courses

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### Behavioral Health Paraprofessional Diploma Requirements

**Course Number**

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<td>Human Service Field Experience/ Seminar</td>
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<td>HSV-813</td>
<td>Alcohol and Drug Counselor Field Experience and Seminar I</td>
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<td>Alcohol and Drug Counselor Field Experience and Seminar II</td>
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**Total program credit hours:** 34

---

### Humane Officer Training

**Ag Sciences**

Animal Health Technology
319-398-5609
www.kirkwood.edu/agrisciences

**Entry time**

Fall
Career Programs

Award
Associate of Applied Science degree
2 years (5 semesters)

Communities across the nation are recognizing the need for well-trained humane law enforcement officers. Until recently, many animal care and control workers entered the field with little or no specialized training. Increased interaction with the public, public demand for humane animal care, limited euthanasia and adoption of shelter animals has put new demands for knowledgeable and professional shelter employees.

From humane investigation to interviewing witnesses, collecting evidence and report writing, the professional humane officer understands public safety and the law, possesses excellent communication skills, and demonstrates a high level of integrity, dependability, stress tolerance and self-control.

Career opportunities: municipal animal control agencies; non-profit humane societies; animal welfare inspector.

Required Courses

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<td>AGV-103</td>
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<td>Shelter Administration and Computer Applications</td>
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<td>Introduction to Criminal Justice</td>
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<tr>
<td>ENG-105</td>
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<td>Introduction to Psychology</td>
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<td>AGV-190</td>
<td>Animal Welfare and Shelter Management</td>
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<td>AGV-191</td>
<td>Animal Behavior and Restraint</td>
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<td>AGV-193</td>
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<td>Disaster Animal Response Training</td>
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<td>Large Animal Welfare</td>
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<td>AGV-196</td>
<td>Euthanasia Technician</td>
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<td>Constitutional Criminal Procedure</td>
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<td>ENG-108</td>
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Fourth Semester (Spring)

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<tr>
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<td>Basic Animal Investigation Techniques</td>
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<td>AGV-198</td>
<td>Wildlife ID and Management</td>
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<td>AGV-199</td>
<td>Veterinary Forensics</td>
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<td>CRJ-141</td>
<td>Criminal Investigation</td>
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<td>CRJ-202</td>
<td>Cultural Awareness for Criminal Justice Practitioners</td>
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Total program credit hours 68

Electives

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<td>Horse Evaluation</td>
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<td>AGE-130</td>
<td>Horse Nutrition</td>
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<td>AGN-220</td>
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<td>AGN-223</td>
<td>Aquatic Wildlife</td>
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<td>AGS-319</td>
<td>Animal Nutrition</td>
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<td>AGV-107</td>
<td>Pharmacy Skills</td>
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<td>AGV-120</td>
<td>Veterinary Medical Terminology</td>
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<td>AGV-143</td>
<td>Canine and Feline Nutrition</td>
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<td>AGV-201</td>
<td>Pet Grooming I</td>
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<td>AGV-202</td>
<td>Pet Groom II</td>
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<td>AGV-203</td>
<td>Pet Grooming III</td>
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<td>AGV-204</td>
<td>Pet Grooming IV</td>
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<td>Any transfer-level course</td>
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HVAC Installer
Industrial Technologies
101 Jones Hall
319-398-4983
www.kirkwood.edu/industrialtech

Entry time
Fall

Award
Diploma
1 year (2 semesters)

Industry endorsements earned
OSHA 10-General Construction; Adult First Aid with CPR.

The HVAC Installer program prepares students to enter the skilled trade of heating, ventilation and air conditioning installation. The program focuses primarily on residential and light commercial equipment and covers installation procedures, code requirements, electrical applications and refrigerant handling procedures. The one-year, hands-on program also includes system design and HVAC component operation.

The Plumbing-Heating-Cooling Contractors Association assisted the college in developing the curriculum to meet the needs of these challenging and rewarding careers.

Career opportunities: HVAC installer; HVAC repair; technician; sheet metal worker.
For gainful employment information, including graduation rates, the median debt of students who completed the program and other information, visit www.kirkwood.edu/gainfulemployment.

Degree Requirements

<table>
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<th>Course Number</th>
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<td>HCR-410</td>
<td>Electrical Applications I</td>
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<td>HCR-605</td>
<td>HVAC Installation I</td>
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<td>HCR-710</td>
<td>Fundamentals of Plan and Print Reading</td>
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<td>MAT-719</td>
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<td>HCR-450</td>
<td>Electrical Applications for HVAC II</td>
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<td>HCR-600</td>
<td>Pipe Joining Methods</td>
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HVAC Installer tool requirements

The tool requirement for the program includes a hand-held toolbox with basic hand tools. Also required are a few HVAC specialty tools and an electrical testing meter.

Industrial Maintenance Technology

Industrial Technologies

101 Jones Hall
319-398-4983
www.kirkwood.edu/industrialtech

Entry time

Fall

Award

Associate of Applied Science degree
2 years (4 semesters, 1 summer)
Diploma
1 year (2 semesters)

Industry endorsement earned

Forklift Class 1, 3, 4, 5, 7; OSHA 10-General Industry; 50+ High Voltage Arc Flash; Residential Voltage Arc Flash; Rigging, Lifting and Cribbing; JSEA-Job Safety & Environmental Analysis; Adult First Aid with CPR; National Career Readiness Certificate; Snap-On Torque Certification.

The Industrial Maintenance Technologies program prepares students for a broad range of industrial maintenance-related careers using industry-guided curriculum combined with practical hands-on labs.

First year studies focus on concepts and technologies that include, but are not limited to, basic electrical theory, motors and transformers, industrial controls and wiring, electrical print design and reading, industrial maintenance concepts (mechanical and electrical), applied physics and mathematics.

During the second year, students are introduced to a broad range of industrial technologies and processes that are commonplace in today's industrial environments. While in this program, students gain experience and skills in a wide variety of disciplines, such as basic construction and framing, plumbing, print reading, welding, fabrication and light machining.

Career opportunities: commercial electrician; plant maintenance technician; maintenance mechanic; maintenance electrician; millwright.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>First Year – First Semester</td>
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<tr>
<td>ELE-233</td>
<td>Electrical Safety and Shop Methods</td>
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<td>ELE-235</td>
<td>Electrical Theory, Measurement and Circuits</td>
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<td>ELE-238</td>
<td>AC, Magnetism, Transformers and Relays</td>
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<tr>
<td>MAT-230</td>
<td>Maintenance Math I</td>
<td>2</td>
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<td>MAT-233</td>
<td>Maintenance Math II</td>
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<td>IND-156</td>
<td>Microcomputers for the Trades</td>
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<td>IND-167</td>
<td>Torqueing and Tensioning</td>
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<tr>
<td>ATR-300</td>
<td>Mechanical Drive Systems I</td>
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<td>First Year – Second Semester</td>
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<td>PHY-180</td>
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<td>ELT-146</td>
<td>National Electrical Code and Electrical Wiring</td>
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<td>ELT-224</td>
<td>Motors and Transformers</td>
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<td>ATR-304</td>
<td>Introduction to Industrial Controls</td>
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<td>ATR-306</td>
<td>Industrial Control Circuits I</td>
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<td>IND-175</td>
<td>Advanced Alignment</td>
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<td>CON-355</td>
<td>Industrial Framing &amp; Construction</td>
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<td>Introduction to Programmable Logic Controllers</td>
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<td>Introduction to PLC Programming</td>
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### Electromechanical Technology Diploma Requirements

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#### First Year – First Semester

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<td>AC, Magnetism, Transformers and Relays</td>
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<td>MAT-230</td>
<td>Maintenance Math I</td>
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<td>Torqueing and Tensioning</td>
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<td>Mechanical Drive Systems I</td>
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#### First Year – Second Semester

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<td>National Electrical Code and Electrical Wiring</td>
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<td>Motors and Transformers</td>
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#### Total program credit hours

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<tbody>
<tr>
<td></td>
<td><strong>Total program credit hours</strong></td>
<td>36</td>
</tr>
</tbody>
</table>

### Interior Design

**Business & Information Technology**

203 Nielsen Hall  
319-398-5416  
www.kirkwood.edu/businessdept

**Entry time**

Fall

**Award**

Associate of Applied Science degree

2 years (5 semesters)

**Accreditation**

This program is accredited by ACBSP (Association of Collegiate Business Schools and Programs). ACBSP is the leading specialized accreditation association for business education supporting, celebrating and rewarding teaching excellence.

Interior Designers are creative business professionals who have the ability to innovatively solve design problems functionally and aesthetically while also improving the overall health, safety, and welfare of users through design.

The interior design program prepares and equips students to practice and serve the community by providing education and training in residential design, commercial design, sustainability, and other areas of specialization in the field of interior design.

This highly interactive program is taught with a student centered approach within a positive and respectful learning environment. Students are provided with a combination of classroom projects, hands on training, and classroom instruction that emphasizes ethical, creative, technical, and responsible problem solving through design. Students study all areas of interior design including but not limited to: Residential Design, Commercial Design, Hospitality Design, Product Design, Sustainable Design, Historical Design, Photoshop, SketchUp, and Revit. Students also learn professional practice concepts and are able to apply those concepts towards assembling a portfolio and resume which are then used to obtain an internship in the field of Interior Design. Additionally, students have the option of attending numerous field trips to major urban cities such as Chicago, Minneapolis, Kansas City and more. Other national and international trips are open to students at various times throughout the year.

For individuals interested in entering the Interior Design Program at Kirkwood Community College, existing knowledge of basic computer applications is highly recommended. If you are currently a high school student, any additional training or classes that you can take relating to art, design, or drafting will assist in building up your knowledge of design as you prepare to enter the Interior Design Program at Kirkwood Community College.

**Career opportunities:** Sales and Retail; Manufacturer’s Representative; Furniture Design; Kitchen Design and Dealerships; Residential design; Residential Staging; Commercial Design Firms; Contract Furniture Dealerships; Historic Preservation or Restoration; Interior Design and Architecture Firms; Interior Design Photography; Professional Rendering (Manual or Digital); Model Building; Upholstery Workrooms; Professional Organizations; Sustainability Consultant; Design Journalist; Lighting Design.
### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td></td>
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</tr>
<tr>
<td>ARC-300</td>
<td>Architectural Sketching</td>
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<tr>
<td>ENG-101</td>
<td>Elements of Writing OR</td>
<td>3</td>
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<tr>
<td>ENG-105</td>
<td>Composition I</td>
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<tr>
<td>INT-126</td>
<td>Introduction to Interior Design and Architecture</td>
<td>3</td>
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<tr>
<td>INT-128</td>
<td>Historical Interiors and Architecture</td>
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<td>INT-129</td>
<td>SketchUp for Interior Design</td>
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<td>MKT-140</td>
<td>Principles of Selling</td>
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<tr>
<td>ARC-185</td>
<td>Architectural Photoshop Techniques</td>
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<td>ART-133</td>
<td>Drawing</td>
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<tr>
<td>CAD-201</td>
<td>CAD REVIT</td>
<td>3</td>
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<tr>
<td>INT-132</td>
<td>Theories and Visual Application</td>
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<tr>
<td>INT-300</td>
<td>Textiles for Interior Design</td>
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<tr>
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<td><strong>Third Semester</strong></td>
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<td>CON-316</td>
<td>Sustainable Construction Science</td>
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<tr>
<td>INT-206</td>
<td>Residential Design I</td>
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<td>INT-207</td>
<td>Commercial Design I</td>
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<td>INT-211</td>
<td>CAD REVIT for Interior Design</td>
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<td>Business Math &amp; Calculators</td>
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<tr>
<td>INT-216</td>
<td>Residential Design II</td>
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<tr>
<td>INT-217</td>
<td>Commercial Design II</td>
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<tr>
<td>INT-218</td>
<td>Professional Practice and Development</td>
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<tr>
<td>INT-311</td>
<td>Global Perspectives in Interior Design OR</td>
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<tr>
<td>INT-312</td>
<td>Interior Design Topics OR</td>
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<tr>
<td>GLS-120</td>
<td>Education Experience Abroad</td>
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<tr>
<td>ENG-105</td>
<td>Composition I OR</td>
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<tr>
<td>ENG-106</td>
<td>Composition II OR</td>
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<td>INT-932</td>
<td>Internship</td>
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<td><strong>Total program credit hours</strong></td>
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#### Optional Courses

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<th>Credit Hours</th>
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<td>INT-928</td>
<td>Independent Study</td>
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</table>

1. Your COMPASS writing score will determine if you need to take prerequisite classes.
2. Your COMPASS math score will determine if you need to take prerequisite classes.

---

### Landscape Construction and Design

#### Ag Sciences
Horticulture/Floral Careers  
319-398-5441  
www.kirkwood.edu/agrisciences

#### Entry time
Summer or Fall

#### Award
Associate of Applied Science degree  
2 years (4 semesters, 1 summer)

A well-designed landscape adds beauty and value to any home or business. Proper installation of that design ensures that it will provide a functional outdoor space for years to come. In the Landscape Construction & Design program, design students can focus on creating those designs utilizing plant knowledge and artistic principles. Students will develop problem-solving skills as well as work with computer design software. New trends in sustainability and landscape maintenance will also be explored.

The construction track in this program allows students the opportunity to actually build what a designer would put on paper. These students will learn site layout, lighting and hardscape installation techniques. Classes in this part of the program would include information about the latest trends in construction materials, equipment and green building.

#### Career opportunities:
- Landscape designer for private homes or corporate campuses; garden center or greenhouse manager; salesperson; commercial grounds foreman; nursery production.

#### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
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<tr>
<td>AGC-313</td>
<td>Leadership in Agriculture</td>
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<tr>
<td>AGH-110</td>
<td>Success in Horticulture</td>
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<td>AGH-112</td>
<td>Introduction to Turfgrass Management</td>
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<td>AGH-144</td>
<td>Landscape Construction</td>
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<tr>
<td>AGH-152</td>
<td>Landscape Design Techniques</td>
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<tr>
<td>AGH-220</td>
<td>Plant Identification Suite I</td>
<td>3</td>
</tr>
<tr>
<td>AGH-236</td>
<td>Plant Material Maintenance</td>
<td>3</td>
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<tr>
<td>CON-134</td>
<td>Surveying and Site Layout</td>
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<td><strong>Spring Term I</strong></td>
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<tr>
<td>AGH-102</td>
<td>Horticulture Math</td>
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<td>AGH-221</td>
<td>Principles of Horticulture</td>
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<tr>
<td>COM-723</td>
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<td>CSC-110</td>
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<td>AGC-932</td>
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<tr>
<td>AGA-154</td>
<td>Fundamentals of Soil Science</td>
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<tr>
<td>AGH-240</td>
<td>Plant Identification Suite II</td>
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<td>COM-744</td>
<td>Oral Communication in the Workplace</td>
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<td>MGT-300</td>
<td>Introduction to Entrepreneurship</td>
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<tr>
<td>AGH-200</td>
<td>Landscape Estimating and Bidding</td>
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<td>AGH-253</td>
<td>Insects and Diseases</td>
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<td>AGH-301</td>
<td>Sustainable Site Management</td>
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<td>FLS-128</td>
<td>Conversational Spanish</td>
<td>3</td>
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<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
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<tr>
<td>OR</td>
<td>PSY-111</td>
<td>3</td>
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<td></td>
<td>Construction or Design Track course</td>
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**Construction Track courses**

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<tbody>
<tr>
<td>AGH-150</td>
<td>Equipment Operations</td>
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<tr>
<td>AGH-157</td>
<td>Equipment Operations Lab</td>
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<tr>
<td>AGH-166</td>
<td>Turfgrass and Landscape Irrigation</td>
<td>3</td>
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<tr>
<td>AGC-313</td>
<td>Leadership in Agriculture</td>
<td>1</td>
</tr>
<tr>
<td>AGH-300</td>
<td>Hardscape Installation Techniques</td>
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<tr>
<td>AGH-282</td>
<td>Pesticide Application Certification</td>
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**Design Track courses**

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<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>AGH-156</td>
<td>Landscape Design II</td>
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</tr>
<tr>
<td>AGH-158</td>
<td>Computer Applications for the Landscape Industry</td>
<td>2</td>
</tr>
<tr>
<td>AGH-302</td>
<td>Advanced Landscape Design</td>
<td>3</td>
</tr>
<tr>
<td>AGH-460</td>
<td>Design Capstone</td>
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**Optional courses**

<table>
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<th>Course Title</th>
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<tr>
<td>AGH-120</td>
<td>Herbaceous Plant Materials</td>
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<tr>
<td>AGH-127</td>
<td>Ornamental Plant Materials</td>
<td>3</td>
</tr>
<tr>
<td>AGH-131</td>
<td>Greenhouse Management</td>
<td>3</td>
</tr>
<tr>
<td>AGH-233</td>
<td>Plant Propagation I</td>
<td>3</td>
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<tr>
<td>AGH-275</td>
<td>Commercial Plant Production</td>
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</tr>
<tr>
<td>AGH-293</td>
<td>Landscape Business Operations</td>
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</tr>
</tbody>
</table>
Liberal Arts - Business Transfer

The Business transfer plan is a Liberal Arts Associate of Arts degree program designed to prepare the student who plans to transfer to a four-year college or university to earn a bachelor’s degree in business. Upon transferring, students may choose from accounting, finance, economics, management, MIS (management information systems), marketing and others.

Students must work closely with an advisor when registering each semester. After completion of required courses, students can transfer to such four-year schools as Coe College, Iowa State University, Mount Mercy University, Northwest Missouri State, the University of Iowa and the University of Northern Iowa. With the help of an advisor, a student can chart an academic program that will allow him or her to transfer with full junior class status.

Masonry Construction

Industrial Technologies
101 Jones Hall
319-398-4983
www.kirkwood.edu/industrialtech

Entry time
Fall

Award
Diploma
1 year (2 semesters)

Industry endorsements earned
OSHA 10-General Construction; Adult First Aid with CPR, scaffolding

The Masonry Construction curriculum prepares students to enter the trade of bricklaying. Students are given a hands-on intensive introduction to the skills used by bricklayers. Classroom experience takes place between an internship with an instructor of the program and the masonry field experience at the end of the program. The Internship is in-house, and field experience can be completed with the instructor or non-profit, if employers aren’t ready.

Career opportunities: brickmasons & blockmasons; helpers-brickmasons, blockmasons, stonemasons, tile, and marble; stonemasons; construction laborers

For gainful employment information, including graduation rates, the median debt of students who completed the program and other information, visit www.kirkwood.edu/gainfulemployment.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>MAS-118</td>
<td>Masonry Safety</td>
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<tr>
<td>MAS-129</td>
<td>Masonry Scaffold Builder and User</td>
<td>2</td>
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Second Semester (Spring)

<table>
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<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>CON-116</td>
<td>Architectural Plans and Specs</td>
<td>2</td>
</tr>
<tr>
<td>CON-275</td>
<td>Stone Concepts</td>
<td>2</td>
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<tr>
<td>MAS-218</td>
<td>Masonry Tools and Equipment II</td>
<td>2</td>
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<tr>
<td>MAS-222</td>
<td>Masonry Lab II</td>
<td>9</td>
</tr>
<tr>
<td>MAS-920</td>
<td>Field Experience</td>
<td>3</td>
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</tbody>
</table>

Total program credit hours 36

Tool Requirements
Students in the Masonry Construction program are required to purchase a tool set for use in lab activities and on-the-job training. The instructor provides a list of the minimum requirements. The tools are offered at cost, which is estimated to be around $250.

The student should also be prepared by the second day of regular scheduled classes with masonry, steel-toed boots. No shirt with less than a 3” sleeve and no baggy or loose fitting clothing. All students will be required to dress according to OSHA standards.

Medical Assisting

Allied Health
2164 Linn Hall
319-398-5566
www.kirkwood.edu/alliedhealth

Entry time
Fall, Spring, Summer

Award
Diploma
3 semesters (including 1 summer)
Associate of Applied Science degree
4 semesters

Accreditation
The Kirkwood Medical Assisting diploma program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Medical Assisting Education Review Board of the American Association of Medical Assistants Endowment (MAERB). After earning a Medical Assisting diploma, graduates are eligible to take the nationally-recognized Certified Medical Assistant exam. Most employers require certification within one year of graduation.

Commission on Accreditation of Allied Health Education Programs 1361 Park Street, Clearwater, FL 33756, 727-210-2350.

Personal Characteristics
Explore Medical Assisting if you are organized, interested in helping patients, have excellent communication skills and have a team-oriented attitude.
Medical assisting is a versatile health career involving clinical procedures, administrative skills and routine laboratory procedures. In the clinical area, medical assistants (MAs) take patients to the examination room, ask about and record symptoms, and measure the patient’s height, weight and blood pressure. MAs also prepare instruments for and assist with minor surgeries, obtain EKGs, give injections and draw blood for routine lab work. MAs may also be employed in an administrative position responsible for greeting patients, answering phones, scheduling appointments, and managing medical records, insurance payments and patient accounts.

Kirkwood’s one-year Medical Assisting program includes classroom and laboratory experience, and a clinical internship at a physician’s office. The program may also be taken on a part-time basis.

**Career opportunities**: physician’s family practice or specialty offices; hospitals/clinics; public health clinics; laboratories; phlebotomist; unit secretary; patient service representative.

### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
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</tr>
<tr>
<td>ADM-105</td>
<td>Introduction to Keyboarding*</td>
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<tr>
<td>BCA-189</td>
<td>Microcomputer Literacy*</td>
<td>1</td>
</tr>
<tr>
<td>BIO-161</td>
<td>Basic Anatomy &amp; Physiology*</td>
<td>3</td>
</tr>
<tr>
<td>HSC-107</td>
<td>Professionals in Health*</td>
<td>2</td>
</tr>
<tr>
<td>HSC-115</td>
<td>Medical Terminology*</td>
<td>4</td>
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<tr>
<td>HSC-210</td>
<td>Health Skills I*</td>
<td>1</td>
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<tr>
<td>MAP-123</td>
<td>Administrative Medical Office Procedures</td>
<td>3</td>
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<td></td>
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<td><strong>15</strong></td>
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<tr>
<td><strong>Second Semester</strong></td>
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<td></td>
</tr>
<tr>
<td>MAP-142</td>
<td>Medical Insurance &amp; Legalities</td>
<td>3</td>
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<tr>
<td>MAP-210</td>
<td>Medical Lab</td>
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<td>MAP-260</td>
<td>Basic Electrocardiology</td>
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<td>MAP-312</td>
<td>Medical Assisting Clinical Procedures</td>
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<td>MAP-501</td>
<td>Math for Medications</td>
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<td>MAP-513</td>
<td>Medical Assisting Pharmacology</td>
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<td><strong>Third Semester</strong></td>
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<td>MAP-618</td>
<td>Medical Assisting Externship++</td>
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<td>PSY-111</td>
<td>Introduction to Psychology*</td>
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<td>SPC-101</td>
<td>Fundamentals of Oral Communication* OR</td>
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<tr>
<td>COM-222</td>
<td>Communication for Health Care Professionals*</td>
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<td></td>
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<td><strong>13</strong></td>
</tr>
<tr>
<td><strong>Fourth Semester</strong></td>
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<tr>
<td>ENG-105</td>
<td>Composition I*</td>
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<td>Social Science Elective*</td>
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**Total Associate of Applied Science degree program credit hours**: 60.5

### Medical Assisting Diploma Requirements

<table>
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<tr>
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<tr>
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</tr>
<tr>
<td>ADM-105</td>
<td>Introduction to Keyboarding*</td>
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<td>BCA-189</td>
<td>Microcomputer Literacy*</td>
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<td>Basic Anatomy &amp; Physiology*</td>
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<td>HSC-107</td>
<td>Professionals in Health*</td>
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<tr>
<td>HSC-115</td>
<td>Medical Terminology*</td>
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<td>HSC-210</td>
<td>Health Skills I*</td>
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<td>MAP-123</td>
<td>Administrative Medical Office Procedures</td>
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<td>MAP-142</td>
<td>Medical Insurance and Legalities</td>
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<td>MAP-618</td>
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</table>
| **Total Diploma program credit hours**: 42.5

*Courses may be taken before beginning the program.

++No program (MAP) courses may be taken with externship. Proof of compliance completion must be done prior to registration for externship.

Note: Minimum C- is required in all MAP courses, in addition to BIO-161, HSC-107, HSC-115 and HSC-210.

### Medical Laboratory Technology

#### Allied Health
2164 Linn Hall
319-398-5566
www.kirkwood.edu/alliedhealth

**Entry time**: Fall

**Award**: Associate of Applied Science degree (granted from Hawkeye Community College)
2 years (5 semesters, including 1 summer)
Accreditation
This program is accredited by the National Accrediting Agency for Clinical Laboratory Services, a non-profit organization that independently accredits clinical laboratory science programs.

The Medical Laboratory Technology program prepares students with entry-level skills in clinical laboratory science. Students learn complex laboratory procedures with limited supervision. They will use a number of instruments in the laboratory for sterilizing, analyzing and testing, and will handle test slides and fragile equipment. Students will use math to make solutions or to record test results, and use laboratory computer systems in some settings. Students will need to keep the laboratory clean and well-organized.

Kirkwood Community College is an academic affiliate with the Medical Laboratory Technology program at Hawkeye Community College. Students must complete requirements for admission at both Kirkwood Community College and Hawkeye Community College.

Students will train in a 24-week hospital laboratory assignment. Graduates are awarded an Associate of Applied Science (A.A.S.) degree from Hawkeye Community College and are eligible for the Board of Registry by American Society of Clinical Pathology Exam and National Credentialing Agency Exam for Laboratory Personnel. The program is accredited by the National Accrediting Agency for Clinical Laboratory Science.

Students will be able to take general education classes at Kirkwood. Some Medical Laboratory Technology classes will be over the Iowa Communications Network and can be taken at Kirkwood. This program starts each fall. Clinics may be arranged locally.

Career opportunities: hospital; clinic and physician office labs; blood collection and blood testing facilities; public health laboratories; veterinary offices; industrial laboratories.

Degree Requirements

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<thead>
<tr>
<th>Course Number</th>
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<th>Credit Hours</th>
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<td>BIO-161</td>
<td>Basic Anatomy and Physiology*</td>
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<td>Introduction to Chemistry*</td>
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<td>MAT-700</td>
<td>Basic Math*</td>
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<td>PSY-111</td>
<td>Introduction to Psychology* OR</td>
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<td>SOC-110</td>
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<td>SPC-101</td>
<td>Fundamentals of Oral Communication*</td>
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<td>BIO-113</td>
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<td>MLT-130</td>
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<td>MLT-250</td>
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<td>MLT-240</td>
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<td>MLT-252</td>
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<td>Immunohematology+</td>
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<td>Immunology &amp; Serology+</td>
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<td>MLT-283</td>
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<td>MLT-284</td>
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<td>MLT-285</td>
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<td>MLT-288</td>
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</table>

*Courses may be taken before beginning the program.

**24 weeks of clinics with periodic lecture days. May be scheduled in local area.

+Register through Hawkeye Community College.

Medical Transcription
Allied Health
2164 Linn Hall
319-398-5566
www.kirkwood.edu/alliedhealth

Entry time
Fall

Award
Diploma/Certificate
2 semesters

Personal characteristics
Explore medical transcription if you enjoy word processing, have keen hearing, an interest in health care, and excellent grammar, punctuation and spelling skills. A high level of concentration for extended periods of time is also important.
Increasing requirements for patient care documentation provide numerous opportunities for medical transcriptionists. Physicians and other health care providers use state-of-the-art electronic technology to dictate and transmit highly technical and confidential information for their patients. These medical professionals rely on skilled medical transcriptionists to transform the spoken word into comprehensive records that accurately communicate medical information.

Medical transcriptionists are specialists in medical language and health care documentation. They interpret and transcribe dictation by physicians and other health care professionals regarding patient assessment, therapeutic procedures, clinical courses, diagnoses and prognoses.

**Career opportunities:** physician’s offices; laboratories; medical transcription businesses; rehabilitation centers; hospitals; legal offices; insurance companies; medical libraries

For gainful employment information, including graduation rates, the median debt of students who completed the program and other information, visit www.kirkwood.edu/gainfulemployment.

**Degree Requirements**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td><strong>First Semester</strong></td>
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<td>BIO-161</td>
<td>Basic Anatomy &amp; Physiology*</td>
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<td>HIT-360</td>
<td>Introduction to HIT+</td>
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<td>HIT-420</td>
<td>Legal Aspects of Health Information+</td>
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<td>HSC-115</td>
<td>Medical Terminology++</td>
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<td>MTR-102</td>
<td>Professionalism in Medical Transcription+</td>
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<td><strong>Second Semester</strong></td>
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<tr>
<td>HSC-107</td>
<td>Professionals in Health++</td>
<td>2</td>
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<td>HSC-142</td>
<td>Elements of Pharmacology++</td>
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<td>HSC-217</td>
<td>Introduction to Pathology++</td>
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<td>MAT-731</td>
<td>Introduction to Math</td>
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<td>MTR-150</td>
<td>Career Medical Transcription</td>
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<td>SPC-101</td>
<td>Fundamentals of Oral Communications* or Communication for Health Care Professionals*</td>
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<td>COM-222</td>
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**Medical Transcription Certificate Requirements**

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<td>HIT-420</td>
<td>Legal Aspects of Health Information+</td>
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<td>HSC-115</td>
<td>Medical Terminology++</td>
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<td>MTR-102</td>
<td>Professionalism in Medical</td>
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<td><strong>Second Semester</strong></td>
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<td>MTR-113</td>
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<td><strong>Total program credit hours</strong></td>
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*Courses may be taken before beginning the program.

+Courses are available online.

**Network and System Administration**

**Business & Information Technology**

203 Nielsen Hall
319-398-5416
www.kirkwood.edu/businessdept

**Entry time**

Fall

**Award**

Associate of Applied Science degree

2 years (5 semesters)

**Certificate options**

Network and system administrators work in a fast-paced and challenging area of technology that designs, builds, integrates, maintains, and secures local area networks. They design and support server systems and related software, as well as provide end-user support for all LAN-based applications. After completing a common course of study for the first three semesters, Network and System Administration majors will choose from among three specialty areas to match individual interests and employment availability. These areas of specialization are Network Administration, System Administration, and Security / Virtualization.

Network Administration students will specialize in LAN and WAN infrastructure including wireless, desktop systems, and protocol suites.

System Administration students will specialize in server hardware and software, directory services, scripting, and storage management.

Security and virtualization students will specialize in system firewalls, secure group policy, access control lists, information management with disaster recovery, virtual network design and implementation, and virtual switching and routing.

In addition to training for the specialization, this program also focuses on communication skills, professionalism, critical thinking and problem solving, teamwork and life-long learning that are essential for success in the workplace and in life.

The program strives to be vendor neutral to give the graduate the greatest breadth of preparation. In addition to the degree and with additional study, coursework should prepare the student for some of the following industry creden-
Career Programs

Programs depending upon the area of specialization: CompTIA A+; CompTIA Network+; Microsoft Certified Solution Associate-Windows 7 and 8; Internet and Computing Core Certification; CompTIA Linux+; Cisco Certified Entry Networking Technician; EMC’s Information Storage Associate; Cisco Certified Network Associate; Microsoft Certified Solutions Associate - Server 2008/2012; VMware Certified Professional - Datacenter Virtualization.

Career opportunities: network field technician; network engineer; network support technician; network control operator; assistant network administrator; assistant systems administrator

Degree Requirements

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<tr>
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<th>Course Title</th>
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<td>Composition I</td>
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<td>NET-137</td>
<td>Advanced PC Concepts</td>
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<td>NET-174</td>
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<td>NET-235</td>
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<td>NET-338</td>
<td>Directory Concepts</td>
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<td>NET-630</td>
<td>Cyber Law and Ethics</td>
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<td>NET-561</td>
<td>Directory Administration</td>
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<td>Network Cabling</td>
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<td>NET-599</td>
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<td>Network Security Basics</td>
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<td>PSY-111</td>
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<td>NET-184</td>
<td>Wide Area Network (WAN) Basics</td>
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<td>NET-323</td>
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System Administration Track

Fourth Semester

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<td>Information Storage Management</td>
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<td>NET-600</td>
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<td>TCP/IP for Networking</td>
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Total program credit hours 76

Optional Classes - System Administration Track

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Network and System Administration Certificate Requirements

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<tr>
<td>NET-122</td>
<td>Computer Hardware Basics</td>
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Second Semester

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Third Semester

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<td></td>
<td><strong>3</strong></td>
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</tbody>
</table>

Total program credit hours **18**

Network Security Certificate Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>NET-165</td>
<td>Network Plus</td>
<td>3</td>
</tr>
<tr>
<td>NET-630</td>
<td>Cyber Law and Ethics</td>
<td>3</td>
</tr>
<tr>
<td></td>
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</table>

Second Semester

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>NET-174</td>
<td>LAN Administration</td>
<td>3</td>
</tr>
<tr>
<td>NET-235</td>
<td>CCNA Cisco 1</td>
<td>3</td>
</tr>
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<td></td>
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</table>

Third Semester

<table>
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<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>NET-600</td>
<td>Network Security Basics</td>
<td>3</td>
</tr>
<tr>
<td>NET-618</td>
<td>Network Defense &amp; Remote</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Access Configuration</td>
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Fourth Semester

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<th>Course Title</th>
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<tr>
<td>NET-619</td>
<td>Network Attacks: Detection,</td>
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</tr>
<tr>
<td></td>
<td>Analysis &amp; Countermeasures</td>
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<tr>
<td></td>
<td></td>
<td><strong>3</strong></td>
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</tbody>
</table>

Total program credit hours **21**

1 Your COMPASS writing score will determine if you need to take prerequisite classes.
2 Your COMPASS math score will determine if you need to take prerequisite classes.

Nursing - LPN/RN

Nursing
2172 Linn Hall
319-398-5563
319-398-4489
www.kirkwood.edu/nursing

Entry time
Fall, Spring, Summer
(evening/weekend program begins each fall and spring)

Award
Associate of Applied Science degree
2 years (6 semesters) plus prerequisites
Diploma
1 year (3 semesters) plus prerequisites

Accreditation
The Nursing program is approved by the Iowa Board of Nursing, River Point Business Park, 400 S.W. 8th Street, Suite B, Des Moines, IA 50309-4685; 515-281-3255; http://www.iowa.gov/nursing.

Personal Characteristics
Consider a career in nursing if you would like to effect positive change in the healthcare industry and advocate for patients, families, and communities to improve their health and prevent illness. Your communication, collaboration, critical thinking, and time management skills will be improved and refined to care for a diverse patient population.

Nursing is the largest health care profession in the United States. The Bureau of Labor Statistics indicates that employment among nurses will grow faster than average for all occupations through 2014.

The first two semesters of the Practical Nursing (PN) and Associate Degree Nursing (ADN) programs are identical and provide a core of knowledge and skills that are common to both nursing roles. Kirkwood nursing classes cover medical, surgical, geriatric, maternal-child, mental health and home health nursing over the five-semester program. Patient care skills are learned in a supervised lab setting. Clinical experience begins in the first semester. Students receive clinical experience in all of the major areas of nursing and complete their clinics in area hospitals, nursing homes, clinics, mental health facilities, home health agencies and a variety of specialty clinics.

Additional requirement
All students are required to complete CNA training and successfully pass the written and skills examination before beginning the technical and clinical portion of the program. Students may obtain CNA training through Kirkwood’s Continuing Education. Students must be on the state of Iowa’s registry. Go to www.kirkwood.edu/ce for more information.

Career opportunities: hospitals; long-term care facilities; home health care; Hospice; nurse educator; public health; clinics; school nursing; military; correctional nursing; wellness centers; occupational-industry.

Practical Nursing Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-168</td>
<td>Human Anatomy &amp; Physiology I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>with Lab**</td>
<td>OR</td>
</tr>
</tbody>
</table>
## Career Programs

### First Semester
- **BIO-173**: Human Anatomy & Physiology II with Lab OR Human Physiology 4
- **BIO-180**: Human Physiology 3
- **BIO-177**: Human Anatomy** 2

### Second Semester
- **PNN-128**: Foundations of Nursing I 4.5
- **PNN-190**: Health Assessment Across the Lifespan 2.5
- **PNN-195**: Foundations of Nursing Simulation Lab I 1.5
- **PNN-180**: Pharmacology I 1.5
- **PNN-701**: Foundations of Nursing Clinic I 1.5
- **PSY-111**: Introduction to Psychology* 3

### Third Semester
- **PNN-129**: Foundations of Nursing II 3.75
- **PNN-702**: Foundations of Nursing Clinic II 1.5
- **PNN-182**: Pharmacology II 1.5
- **PNN-436**: Nursing Care of the Growing Family 3.25
- **PSY-121**: Developmental Psychology* 3

### Fourth Semester
- **ADN-500**: Professional Roles III: Transitions 2
- **ADN-160**: Nursing Care of Specific Populations 3
- **ADN-730**: Nursing Care of Specific Populations Clinic 2.25
- **BIO-186**: Microbiology 4
- **ENG-105**: Composition I* OR College Writing* 3

### Fifth Semester
- **ADN-170**: Concepts of Nursing 5.5
- **ADN-740**: Concepts of Nursing Clinic 3
- **SPC-101**: Fundamentals of Oral Communication* OR Humanities Elective 3

### Sixth Semester
- **ADN-180**: Advanced Concepts of Nursing 4
- **ADN-750**: Advanced Concepts of Nursing Clinic 3.5
- **SOC-110**: Introduction to Sociology 3

### Total Associate Degree Nurse credit hours 81.25

*Courses may be taken before beginning the Nursing technical and clinical portion of the program. They should be completed prior to or during the semester they are listed in.

**Completion of courses with a minimum of a C- required prior to acceptance.

## Occupational Therapy Assistant

### Allied Health
- 2164 Linn Hall
- 319-398-5566
- www.kirkwood.edu/alliedhealth

### Entry time
- Fall

### Award
- Associate of Applied Science degree
- 2 years (5 semesters, including 1 semester)

### Accreditation
- The Occupational Therapy Assistant program is accredited by the Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA), located at 47120 Montgomery Lane, Suite 200, Bethesda, MD 20814-3449. ACOTE’s telephone number c/o AOTA is 301-652-AOTA and its Web address is www.acoteonline.org. OTA graduates can take the national OTA certification exam administered by the National Board for Certification in Occupational Therapy (NBCOT). Successful completion of the exam leads to the Certified Occupational Therapy Assistant (COTA) designation. Most states, including Iowa, require a license to practice.

Occupational therapy assistants (OTAs) work with patients of all ages and help them learn skills to lead independent lives. OTAs work under the supervision of an occupational therapist (OT) to provide hands-on services to clients who are learning new ways to succeed in the occupation of life. This program starts each year in the fall.

### Career opportunities:
- school systems; assisted living facilities; hospitals; outpatient clinics; long-term care facilities; private practice.
Course Number | Course Title | Credit Hours
--- | --- | ---
BIO-161 | Basic Anatomy & Physiology* | 3
HSC-107 | Professionals in Health* | 2
OTA-100 | Foundations of Occupational Therapy | 3
OTA-150 | Occupational Therapy Assistant Medical Terminology or Medical Terminology | 1.5
HSC-115 | Basic Medical Terminology | or
HSC-117 | Basic Medical Terminology | or
OTA-207 | OT Methods I | 3
OTA-208 | Occupational Development | 2.5
PSY-111 | Introduction to Psychology* | 3
OTA-211 | Psychosocial Dysfunction | 4
OTA-212 | Functional Kinesiology | 3
OTA-306 | OT Methods II | 3
OTA-308 | Physical Dysfunction I | 4
OTA-309 | Physical Dysfunction II | 4
OTA-851 | OTA Fieldwork I-B** | 1
ENG-105 | Composition I | 3
OTA-205 | OTA Management | 2
OTA-200 | Community Health and Special Populations | 4
OTA-406 | OT Methods III | 3
OTA-410 | Pediatric Interventions for the OTA | 2
OTA-411 | Geriatric Interventions for the OTA | 1.5
OTA-853 | OTA Fieldwork I-C** | 2.5
OTA-854 | OTA Fieldwork II-B** | 6
OTA-855 | OTA Fieldwork II-C** | 2.5
--- | Humanities Elective* | 3
OTA-409 | Professional Development | 2
OTA-852 | OTA Fieldwork II-A** | 6
OTA-854 | OTA Fieldwork II-B** | 6
OTA-855 | OTA Fieldwork II-C** | 2.5
--- | | 18
OTA-409 | Professional Development | 2
OTA-852 | OTA Fieldwork II-A** | 6
OTA-854 | OTA Fieldwork II-B** | 6
OTA-855 | OTA Fieldwork II-C** | 2.5
--- | | 18

Total program credit hours | 80

*Courses may be taken before beginning the technical portion of the program.

**Indicates a course which involves off-campus clinical experience.

Note: Minimum grade of C is required in all technical OTA courses.

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### Paralegal

#### Social Sciences

1008 Cedar Hall
319-398-1241
www.kirkwood.edu/socialsciences

#### Entry time

Fall, Spring, Summer

#### Award

Associate of Applied Science (4 semesters)
Associate of Arts Liberal Arts (transfer degree)

Students planning to pursue a degree at a four-year institution follow the Liberal Arts program requirements while at Kirkwood, completing general education and Paralegal elective courses that prepare them to transfer.

Paralegals are legal professionals who assist attorneys. An attorney may delegate any legal work to a paralegal except tasks that involve giving legal advice or representing a client in court (although paralegals may assist at trial). Iowa prohibits the practice of law by non-attorneys.

Kirkwood’s American Bar Association approval helps prepare students for entry level positions in the paralegal market. The plan of study also provides career-enhancing credentials for people already employed in law related work. Graduates work in law firms, corporate legal departments and other business and government offices such as prosecutors' offices, banks, title companies, and insurance companies.

The program coordinator shall have discretion to evaluate and approve the transfer of all legal specialty courses. A maximum transfer of eight credits of legal specialty course work is allowed. Paralegal Internship (PRL-932) must be taken through Kirkwood Community College.

Graduates who have gone on to law school after completing their bachelor’s degree have found their paralegal education at Kirkwood served as an excellent pre-law experience. In addition, any student wishing to explore law careers will find program courses useful. Paralegal Studies Orientation, the first law class, satisfies three credit hours of social science requirement toward an A.A. (Associate of Arts) or A.A.S. (Associate of Applied Science) degree. It is recommended that you work closely with your paralegal advisor.

Transfer Plan: To transfer to a four-year college or university, complete the Kirkwood Liberal Arts A.A. degree. Fulfiling elective credits in Paralegal classes provides opportunities to explore the discipline, build your resume, and prepare for transfer.

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### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRL-101</td>
<td>Paralegal Studies Orientation</td>
<td>3</td>
</tr>
</tbody>
</table>
Career Programs

ENG-105 Composition I 3
SPC-101 Fundamentals of Oral Communication 3
PHI-105 Introduction to Ethics 3
CRJ-100 Introduction to Criminal Justice 3

Second Semester
PRL-105 Legal Ethics 1
PRL-110 Fundamentals of Legal Research and Writing 2
PHI-111 Basic Reasoning 3
ENG-108 Composition II: Technical Writing 3
OR
ENG-106 Composition II 3
--------- Math/Science Elective 3
--------- Program Elective 2
--------- Humanities or History/Culture Elective 3

Third Semester
PRL-130 Torts 2
PRL-175 Contracts 2
PRL-111 Advanced Legal Research and Writing 2
POL-111 American National Government 3
--------- Math/Science Elective 3
--------- Literature Elective 3

Fourth Semester
PRL-176 Civil Litigation 3
PRL-932 Internship 3
--------- Humanities or History/Culture Elective 3
--------- Math/Science Elective 3

Total program credit hours  63

Program Electives:
PRL-120 Investigation for Paralegals 2
PRL-136 Bankruptcy Law 2
PRL-140 Business Organization Law 2
PRL-145 Secured Transactions 2
PRL-150 Real Estate Law 2
PRL-160 Family Law 2
PRL-165 Estate Planning/Administration 2
PRL-180 Employment Law Topics 2
PRL-181 Workers’ Compensation 2
PRL-189 Criminal Law and Procedure for the Paralegal 2

www.kirkwood.edu/paramedic

Entry time
Spring

Award
Associate of Applied Science degree
2 years (5 semesters)

Paramedics provide the highest level of pre-hospital emergency care. The paramedic is an allied health professional whose primary focus is to provide advanced emergency medical care for critical and emergent patients who access the emergency medical system. This individual possesses the complex knowledge and skills necessary to provide patient care and transportation. Paramedics function as part of a comprehensive EMS response, under physician oversight. They perform interventions with the basic and advanced equipment typically found on an ambulance. The paramedic is a link between the scene into the health care system.

Paramedics provide advanced care in a variety of settings. Utilizing critical thinking skills, paramedics rapidly assess, treat and stabilize injured or ill patients and provide transport to or between hospitals. Settings may include ground and air ambulances, emergency departments, critical care units or cardiac cath labs. Along with advanced assessment techniques, paramedics utilize medications, cardiac monitoring and interpreting, defibrillation and advanced invasive skills as guided by state and local protocols, as well as the medical direction of each service.

The Paramedic program follows the current National Emergency Medication Services Education Standards from the National Highway Traffic Safety Administration. The standards prepare the EMT and AEMT for the more advanced scope of practice of the paramedic. This allied health program has a mandatory background check for clinical purposes.

Career opportunities: ambulance services; fire departments; hospitals; law enforcement agencies; other health care facilities.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Must be taken before acceptance into the program)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO-161</td>
<td>Basic Anatomy &amp; Physiology*</td>
<td>3</td>
</tr>
<tr>
<td>EMS-200</td>
<td>Emergency Medical Technician*</td>
<td>8</td>
</tr>
<tr>
<td>OR</td>
<td>Advanced Emergency Medical Technician</td>
<td></td>
</tr>
<tr>
<td>EMS-300</td>
<td>Basic Medical Terminology*</td>
<td>2.5</td>
</tr>
<tr>
<td>MAT-731</td>
<td>Introduction to Math**</td>
<td>2</td>
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<tr>
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Prerequisites**

Paramedic

Healthcare Simulation Center
2006 Linn Hall
319-398-1269
## Career Programs

### First Semester

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO-181</td>
<td>Homeostatic Physiology*</td>
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</tr>
<tr>
<td>EMS-641</td>
<td>Introduction to Paramedicine</td>
<td>3</td>
</tr>
<tr>
<td>EMS-642</td>
<td>Pharmacology for Paramedicine</td>
<td>3</td>
</tr>
<tr>
<td>PSY-111</td>
<td>Introduction to Psychology*</td>
<td>3</td>
</tr>
<tr>
<td>SPC-101</td>
<td>Fundamentals of Oral Communication* OR</td>
<td>3</td>
</tr>
<tr>
<td>SPC-112</td>
<td>Public Speaking OR</td>
<td></td>
</tr>
<tr>
<td>COM-222</td>
<td>Communication for Health Care Professionals*</td>
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### Second Semester

<table>
<thead>
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<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>EMS-643</td>
<td>Cardiorespiratory Paramedicine</td>
<td>3</td>
</tr>
<tr>
<td>EMS-644</td>
<td>Paramedic Clinical I</td>
<td>3</td>
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<tr>
<td>EMS-645</td>
<td>Paramedic I</td>
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<tr>
<td>ENG-105</td>
<td>Composition I*</td>
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### Third Semester

<table>
<thead>
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<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BCA-189</td>
<td>Microcomputer Literacy*</td>
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</tr>
<tr>
<td>EMS-646</td>
<td>Paramedic Clinical II</td>
<td>4</td>
</tr>
<tr>
<td>EMS-647</td>
<td>Paramedic II</td>
<td>3.5</td>
</tr>
<tr>
<td>EMS-648</td>
<td>Special Patient Populations in Emergency Medical Services</td>
<td>4</td>
</tr>
<tr>
<td>EMS-649</td>
<td>Trauma &amp; Environmental Emergencies</td>
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### Fourth Semester

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<th>Course Title</th>
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<tbody>
<tr>
<td>EMS-650</td>
<td>Medical and Psychological Emergencies</td>
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<tr>
<td>EMS-651</td>
<td>Paramedic Fieldwork</td>
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<tr>
<td>EMS-652</td>
<td>Paramedic Clinical III</td>
<td>4</td>
</tr>
<tr>
<td>EMS-653</td>
<td>Paramedic III</td>
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<tr>
<td>------</td>
<td>Humanities Elective*</td>
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</table>

### Total program credit hours 15.5

*Courses may be taken before beginning the paramedic core curriculum portion of the program.

**Prerequisite courses must be taken before acceptance into the program.

+or Math-700 Basic Math, 3 credits, or any other college-level math course.

Current paramedics may also complete the degree requirements, with credit awarded for previous EMS course work.

## Parks and Natural Resources

### Ag Sciences
Horticulture/Floral Careers
319-398-5441
www.kirkwood.edu/agrisciences

### Entry Time
Summer or Fall

### Award
Associate of Applied Science degree
2 years (4 semesters)
Diploma
3 semesters

If you enjoy the outdoors and have a deep concern for preserving and managing our precious natural resources, take a look at our Parks and Natural Resources program. As a student in this program, you’ll learn to maintain and build campgrounds and lake areas; identify and manage fish, amphibians, reptiles, mammals, and nesting and game birds; operate and maintain equipment; manage plant material and land; and maintain park facilities.

### Career opportunities:
working in a city or county park as a park attendant or naturalist; working in conservation, landscaping or environmental education; working for a county conservation district.

### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGH-110</td>
<td>Success in Horticulture</td>
<td>1</td>
</tr>
<tr>
<td>AGH-123</td>
<td>Woody Plant Materials</td>
<td>3</td>
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<tr>
<td>AGH-282</td>
<td>Pesticide Application Certification</td>
<td>1</td>
</tr>
<tr>
<td>AGN-105</td>
<td>Applications of Natural Resources</td>
<td>3</td>
</tr>
<tr>
<td>AGN-132</td>
<td>Plant Management for Parks</td>
<td>3</td>
</tr>
<tr>
<td>COM-744</td>
<td>Oral Communication in the Workplace</td>
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<tr>
<td>------</td>
<td>Humanities Elective</td>
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### Total program credit hours 17
### Career Programs

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<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td>AGH-150</td>
<td>Equipment Operations Lab</td>
<td>1</td>
</tr>
<tr>
<td>AGH-157</td>
<td>Equipment Operations</td>
<td>2</td>
</tr>
<tr>
<td>AGN-250</td>
<td>Park Maintenance Programs</td>
<td>3</td>
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<tr>
<td>COM-723</td>
<td>Workplace Communication</td>
<td>3</td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
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#### Summer

<table>
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<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AGC-932</td>
<td>Internship</td>
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#### Fall Term II

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<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AGH-152</td>
<td>Landscape Design Techniques</td>
<td>3</td>
</tr>
<tr>
<td>AGN-140</td>
<td>Native Plants</td>
<td>3</td>
</tr>
<tr>
<td>AGN-220</td>
<td>Avian Wildlife</td>
<td>3</td>
</tr>
<tr>
<td>AGN-223</td>
<td>Aquatic Wildlife</td>
<td>3</td>
</tr>
<tr>
<td>AGN-244</td>
<td>Wildlife Management</td>
<td>3</td>
</tr>
<tr>
<td>AGN-248</td>
<td>Natural Resources Appreciation</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
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#### Spring Term II

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<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AGA-154</td>
<td>Fundamentals of Soil Science</td>
<td>3</td>
</tr>
<tr>
<td>AGN-226</td>
<td>Mammalian Wildlife</td>
<td>3</td>
</tr>
<tr>
<td>AGN-235</td>
<td>Park and Recreation Administration</td>
<td>3</td>
</tr>
<tr>
<td>AGN-240</td>
<td>Natural Resources Interpretation</td>
<td>3</td>
</tr>
<tr>
<td>MGT-145</td>
<td>Human Relations in Management OR</td>
<td>3</td>
</tr>
<tr>
<td>BUS-161</td>
<td>Human Relations</td>
<td>15</td>
</tr>
<tr>
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<td><strong>Total</strong></td>
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#### Optional Courses

<table>
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<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AGN-270</td>
<td>Watershed Assessment and Management</td>
<td>3</td>
</tr>
<tr>
<td>AGN-300</td>
<td>Rain Gardens and Bioretention Cells</td>
<td>3</td>
</tr>
<tr>
<td>AGN-260</td>
<td>Wildland Firefighter Training</td>
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### Diploma Requirements

#### Fall Term I

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGH-102</td>
<td>Horticulture Math</td>
<td>3</td>
</tr>
<tr>
<td>AGH-123</td>
<td>Woody Plant Materials</td>
<td>3</td>
</tr>
<tr>
<td>COM-723</td>
<td>Workplace Communications</td>
<td>3</td>
</tr>
<tr>
<td>MGT-145</td>
<td>Human Relations in Management OR</td>
<td>3</td>
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<tr>
<td>BUS-161</td>
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#### Spring Term I

<table>
<thead>
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<th>Course Title</th>
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<tbody>
<tr>
<td>AGA-154</td>
<td>Fundamentals of Soil Sciences</td>
<td>3</td>
</tr>
<tr>
<td>AGH-144</td>
<td>Landscape Construction</td>
<td>3</td>
</tr>
<tr>
<td>AGH-150</td>
<td>Equipment Operations Lab</td>
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<td>AGH-157</td>
<td>Equipment Operations</td>
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<td>AGN-250</td>
<td>Park Maintenance Programs</td>
<td>3</td>
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<td></td>
<td><strong>Total</strong></td>
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</table>

### Total program credit hours

- Fall Term I: 16 credit hours
- Fall Term II: 18 credit hours
- Spring Term II: 15 credit hours
- Total: 69 credit hours

#### Pet Grooming

**Ag Sciences**

Washington Hall

319-398-5609

www.kirkwood.edu/agrisciences

### Entry time

- Fall

### Award

- Diploma
- 1 years (2 semesters, 1 summer)

As a pet grooming student, you’ll learn to groom and maintain the appearance of pets, usually dogs. Grooming includes brushing and cutting the pet’s hair, trimming toenails, bathing the pet and cleaning its ears. After successfully completing the one-year program, you’ll receive a diploma in Pet Grooming and Pet Shop Management.

### Career opportunities:

- veterinary clinics; pet stores; pet salons; kennels.

For gainful employment information, including graduation rates, the median debt of students who completed the program and other information, visit www.kirkwood.edu/gainfulemployment.

### Degree Requirements

#### First Semester (Fall)

<table>
<thead>
<tr>
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<td>AGV-201</td>
<td>Pet Grooming I</td>
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<td>AGV-202</td>
<td>Pet Grooming II</td>
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<tr>
<td>AGV-400</td>
<td>Grooming Shop Management I</td>
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<td>BUS-161</td>
<td>Human Relations</td>
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<td>COM-723</td>
<td>Workplace Communications</td>
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<td><strong>Total</strong></td>
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#### Second Semester (Spring)

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<td>AGV-143</td>
<td>Canine &amp; Feline Nutrition</td>
<td>3</td>
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<tr>
<td>AGV-203</td>
<td>Pet Grooming III</td>
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<tr>
<td>AGV-204</td>
<td>Pet Grooming IV</td>
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<td>AGV-401</td>
<td>Grooming Shop Management II</td>
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<td>BUS-149</td>
<td>Small Business Financial Management</td>
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<td>COM-744</td>
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<td></td>
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### Total program credit hours

- First Semester: 15 credit hours
- Second Semester: 18 credit hours
- Total: 33 credit hours
Pharmacy Technician
Healthcare Simulation Center
2006 Linn Hall
319-398-7660
www.kirkwood.edu/pharmtech

Entry time
Fall or Spring

Award
Diploma
2 semesters

Personal Characteristics
Attention to detail and conscientiousness are essential as well as the ability to function as a member of a health care team in a variety of settings. The pharmacy technician often is required to work quickly and efficiently under the direct supervision of the pharmacist. The position may require standing on one’s feet for extended periods of time.

The pharmacy technician, under the supervision of a pharmacist, assists in day-to-day pharmacy operations. Pharmacy technicians work in hospitals or retail pharmacies receiving written prescriptions, taking prescription refill requests, preparing intravenous medications, operating computer and automation systems, applying prescription and auxiliary labels to medication bottles, pricing and controlling inventory and preparing insurance claim forms.

Graduates are eligible to take a national Pharmacy Technician certification exam. National certification is required for employment as a pharmacy technician in Iowa and many other states.

Career opportunities: retail pharmacies; hospital pharmacies; medical clinic pharmacies; home health agencies.

For gainful employment information, including graduation rates, the median debt of students who completed the program and other information, visit www.kirkwood.edu/gainfulemployment.

Degree Requirements

<table>
<thead>
<tr>
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<th>Credit Hours</th>
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<tr>
<td>ADM-105</td>
<td>Introduction to Keyboarding</td>
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<td>BCA-189</td>
<td>Microcomputer Literacy</td>
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<td>BIO-161</td>
<td>Basic Anatomy &amp; Physiology</td>
<td>3</td>
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<td>HSC-107</td>
<td>Professionals in Health</td>
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<tr>
<td>HSC-142</td>
<td>Elements of Pharmacology</td>
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<tr>
<td>MAT-102</td>
<td>Intermediate Algebra</td>
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<td>COM-222</td>
<td>Communication for Health Care Professionals</td>
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<tr>
<td>SPC-101</td>
<td>Fundamentals of Oral Communication</td>
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</table>

Total program credit hours 30.5

Note: Minimum C- is required in the core course, PHR-170

Physical Therapist Assistant
Allied Health
2164 Linn Hall
319-398-5566
www.kirkwood.edu.alliedhealth

Entry time
Fall

Award
Associate of Applied Science degree
2 years (5 semesters, including 1 summer)

Accreditation
The Physical Therapist Assistant program is accredited by the Commission on Accreditation of Physical Therapy Education (CAPTE) of the American Physical Therapy Association (APTA). PTA graduates qualify to take the licensure exam given by the Federation of State Boards in Physical Therapy. Licensure is granted by the Iowa Board of Physical Therapy and Occupational Therapy Examiners. Most states, including Iowa, require a license to practice as a PTA. Annual continuing education hours are required to maintain a license.

Commission on Accreditation in Physical Therapy Education Department of Accreditation, American Physical Therapy Association, 111 North Fairfax Street, Alexandria, VA 22314, 703-706-3245, www.apta.org/CAPTE.

Personal Characteristics
Physical therapist assistants (PTAs) work closely with physical therapists (PTs) to provide services to people with physical disabilities. Patient treatments may include strengthening, flexibility, aerobic condition, exercise, balance activities, functional training, gait training, modalities and other therapeutic interventions. Patient and caregiver education is provided by the PT or PTA.

The PT performs an initial patient evaluation and identifies patient problems and goals, then outlines a plan of care. The PTA assists the PT by carrying out all or part of the plan of care, monitoring the patient’s progress and documenting the care.

Students have two short-term and two long-term clinical experiences that allow them to gain hands-on experience with a variety of patients. Clinic sites are located across Iowa and in neighboring states. This program has mandatory background checks and other compliance items that need to be completed for clinic participation. This program begins each year in the fall.
Career Programs

Career opportunities: hospitals; home health; industry; nursing homes; rehabilitation centers; outpatient clinics - orthopedics, sports medicine, pediatrics, etc.; school systems.

**Degree Requirements**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
<td>BIO-110</td>
<td>Basic Biological Concepts*</td>
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<tr>
<td>MAT-107</td>
<td>Survey of Math</td>
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<td>PHY-120</td>
<td>Introductory Physics</td>
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<td>BIO-168</td>
<td>Human Anatomy &amp; Physiology I with Lab**</td>
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<td>HSC-107</td>
<td>Professionals in Health**</td>
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<td>HSC-210</td>
<td>Health Skills I**</td>
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<td>Introduction to PTA</td>
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<td>PTA-120</td>
<td>Kinesiology</td>
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<td>PTA-140</td>
<td>Functional Motor Development</td>
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<td>PTA-192</td>
<td>PTA Modalities I</td>
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<tr>
<td>BIO-173</td>
<td>Human Anatomy and Physiology with Lab II**</td>
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<td>PTA-110</td>
<td>Fundamentals for PTA***</td>
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<td>PTA-150</td>
<td>Pathophysiology</td>
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<td>PTA-193</td>
<td>PTA Modalities II</td>
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<td>SPC-101</td>
<td>Fundamentals of Oral Communication**</td>
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<td>COM-222</td>
<td>Communication for Health Care Professionals**</td>
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<tr>
<td><strong>Summer Term</strong></td>
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<td>ENG-105</td>
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<td>PTA-160</td>
<td>PTA Procedures I</td>
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<td>PTA-161</td>
<td>PTA Procedures II</td>
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<td>PTA-301</td>
<td>PTA Clinic I***</td>
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<tr>
<td>PSY-111</td>
<td>Introduction to Psychology**</td>
<td>3</td>
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<tr>
<td>PTA-210</td>
<td>Orthopedics</td>
<td>3</td>
</tr>
<tr>
<td>PTA-230</td>
<td>Rehab for Medical Conditions</td>
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<tr>
<td>PTA-240</td>
<td>Neurology</td>
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<td>PTA-302</td>
<td>PTA Clinic II***</td>
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<td>Humanities Elective**</td>
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<td>PTA-250</td>
<td>PTA Career Essentials</td>
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<tr>
<td>PTA-431</td>
<td>PTA Clinic III***</td>
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</table>

**Total program credit hours** 75

*If needed, BIO-110 Basic Biological Concepts should be taken before BIO-168 Human Anatomy and Physiology, not concurrently.

**Courses may be taken before beginning the technical portion of the program.

***Indicates a course which involves off-campus clinical experience.

Note: Minimum C required in the preparatory courses, BIO-168, BIO-173 and all technical PTA courses.

PTA graduates qualify to take the licensure exam given by the Federation of State Boards in Physical Therapy. Licensure is granted by the Iowa Board of Physical Therapy and Occupational Therapy Examiners. Most states, including Iowa, require a license to practice as a PTA.

**Plumbing Technology**

**Industrial Technologies**

101 Jones Hall  
319-398-4983  
www.kirkwood.edu/industrialtech

**Entry time**

Fall

**Award**

Diploma  
1 year (2 semesters)

**Industry endorsements earned**

OSHA 10-General Construction; Adult First Aid with CPR.

The Plumbing Technology program provides entry-level skills and knowledge for students preparing to enter the plumbing industry. Classes in the first semester focus on safety, hand and power tools, materials, pipe joining methods, code book layout, plan and print reading and trade calculations. Hands-on classes concentrate on pipe joining, pipe materials and basic pipe fitting practices.

The second semester covers plumbing code requirements, installation requirements for drain, waste and vent systems, water pipe systems, gas pipe systems, gas venting systems, cross connection and backflow prevention. The hands-on class includes design and construction of a three-fixture washroom group and testing and troubleshooting backflow prevention devices.

**Career opportunities:** plumbing installation technician; plumbing maintenance technician; plumbing service technician; plumbing apprenticeship program.

For gainful employment information, including graduation rates, the median debt of students who completed the program and other information, visit www.kirkwood.edu/gainfulemployment.
Respiratory therapists, also known as respiratory care practitioners, provide treatment, evaluation, monitoring and management of patients with breathing disorders or cardiovascular problems. Respiratory therapists administer oxygen, perform cardiopulmonary resuscitation, manage mechanical ventilators, administer medications, monitor cardiopulmonary systems and measure lung function. Respiratory therapists treat all types of patients: premature infants whose lungs are not fully developed, elderly patients with chronic asthma or emphysema, as well as emergency care for heart attack, stroke, drowning or shock.

Respiratory therapists work closely with physicians, nurses and other health care professionals to provide direct care to children and adults, including delivery of oxygen, administration of aerosolized drugs, endotracheal intubation, suctioning, management of life support, weaning of ventilation of life support, insertion of arterial lines, management of tracheotomies, drawing and interpretation of arterial blood gas samples. Advanced skills include intravenous, chest tube and central line insertions, as well as bronchoscopy procedures. The Respiratory Therapist curriculum consists of classroom, laboratory and hospital-based clinical experiences at area hospitals and in-home health. This program begins each Fall semester.

Career opportunities: hospitals; training centers; hospital outreach programs; pharmaceutical sales; sleep labs; outpatient clinics; home health agencies; health education; medical research, physician offices.

Respiratory Therapist
Allied Health
2164 Linn Hall
319-398-5566
www.kirkwood.edu/alliedhealth

Entry time
Fall

Award
Associate of Applied Science degree
2 years (5 semesters, including 1 summer)

Accreditation
The Respiratory Therapy program is accredited by the Commission on Accreditation for Respiratory Care. Upon completion of the Respiratory Therapy program you should have the skills and knowledge needed to sit for the CRTT (Certified Respiratory Therapy Technician) entry-level exam, and the RRT (Registered Respiratory Therapist) advanced exam, both administered by the National Board of Respiratory Care (NBRC). The exams listed are required for employment and licensure within the state of Iowa and the Respiratory Therapy profession.

Personal Characteristics
Respiratory therapy may be for you if you are naturally curious and would enjoy learning about and applying your knowledge of respiratory technology directly to patient care. Your ability to assess technical problems and make independent decisions is important. You should also have good eye-hand coordination, possess basic competence in science and math, have good communication skills and an ability to convey technical knowledge.

Degree Requirements

<table>
<thead>
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<th>Credit Hours</th>
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<td>PLU-130</td>
<td>Plumbing Theory I</td>
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<td>PLU-140</td>
<td>Plumbing Practices I</td>
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<td>PLU-148</td>
<td>Plan &amp; Print Reading for Plumbing</td>
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<td>PLU-932</td>
<td>Internship</td>
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<tr>
<td>Plumbing Math Concepts</td>
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<td>Plumbing Theory II</td>
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<tr>
<td>Advanced Plan &amp; Print Reading</td>
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<tr>
<td>Workplace Communications OR</td>
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<tr>
<td>Oral Communication in the Workplace</td>
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Total program credit hours 35

Second Semester (Spring)

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<td>Plumbing Theory II</td>
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<td>Workplace Communications OR</td>
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Career Programs

Degree Requirements

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<th>Course Title</th>
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<td>BIO-161</td>
<td>Basic Anatomy &amp; Physiology**</td>
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<td>BIO-186</td>
<td>Microbiology**</td>
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<tr>
<td>CHM-110</td>
<td>Introduction to Chemistry**</td>
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Prerequisites

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<tr>
<td>ENG-105</td>
<td>Composition I*</td>
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<td>HSC-107</td>
<td>Professionals in Health*</td>
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<td>HSC-115</td>
<td>Medical Terminology*</td>
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<td>HSC-210</td>
<td>Health Skills I*</td>
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<tr>
<td>MAT-102</td>
<td>Intermediate Algebra*</td>
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<tr>
<td>RCP-120</td>
<td>Cardiopulmonary Assessment</td>
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<td>RCP-210</td>
<td>Introduction to Respiratory Care</td>
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<table>
<thead>
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<td>Health Skills I*</td>
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<td>Intermediate Algebra*</td>
<td>4</td>
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<tr>
<td>Cardiopulmonary Assessment</td>
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<td>Introduction to Respiratory Care</td>
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<table>
<thead>
<tr>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
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<td>Introduction to Psychology*</td>
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<tr>
<td>Respiratory Care I</td>
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<td>Respiratory Physiology</td>
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</tr>
<tr>
<td>Respiratory Care Clinic I</td>
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</tr>
<tr>
<td>Fundamentals of Oral Communication*</td>
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</table>

<table>
<thead>
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<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>Introduction to Psychology*</td>
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<td>Respiratory Care I</td>
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<tr>
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Second Semester (Spring)

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<tr>
<th>Course Number</th>
<th>Course Title</th>
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<td>RCP-300</td>
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<td>Fundamentals of Oral Communication*</td>
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<td>Fundamentals of Oral Communication*</td>
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<tr>
<td>Fundamentals of Oral Communication*</td>
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</table>
In addition to management and food service techniques, instruction covers related technical subjects including nutrition, purchasing, sanitation, computers, human relations and legal aspects of the hospitality industry. This major prepares students for entry-level management positions.

Students assist in the daily operation of The Class Act, a full-service restaurant at The Hotel at Kirkwood Center. The restaurant features fine dining for hotel and conference center guests, Kirkwood staff and the public. Students assist in planning, preparing for and servicing catered events on campus during their last semester. Students are required to purchase professional uniforms and tools to use when in labs and service areas.

Career opportunities: restaurants; casinos; hospitals; cruise ships; catering; country clubs; hotels and resorts; colleges; long-term care facilities; corporate dining.

### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<td>Composition I</td>
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<td>MAT-140</td>
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<td>COM-744</td>
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<tr>
<td>FLS-118</td>
<td>Spanish for Professionals: OR</td>
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**Restaurant Management**

**Hospitality Arts**
The Hotel at Kirkwood Center
319-848-8770
www.kirkwood.edu/hospitality

**Entry time**
Fall or Spring

**Award**
Associate of Applied Science degree
2 years (4 semesters)

**Industry endorsement earned**
National Career Readiness Certificate; National Restaurant Association’s Food Protection Manager Certificate

**Accreditation**
This program is fully accredited by the American Culinary Federation Education Foundation Accrediting Commission. This provides graduates with nationally-recognized certification upon completion.

**Personal Characteristics**
Students in Kirkwood’s Hospitality Arts programs prepare for their careers through practical experience in management, food preparation and service at The Hotel at Kirkwood Center. International education opportunities are also available.
Career Programs

Hospitality

HCM-251 Purchasing, Receiving and Inventory 2
HCM-340 Hospitality Events and Catering (FOH) 3
MGT-145 Human Relations in Management OR 3
PSY-111 Introduction to Psychology 14

Total program credit hours 62.5

Optional Course
HCM-924 Honors Project 1

When transferring to a four-year school, see your advisor for course requirements. Those transferring to a four-year college or university may want to substitute the following courses:

- PSY-111 Introduction to Psychology FOR MGT-145 Human Relations in Management
- ENG-105 Composition I FOR COM-723 Workplace Communication
- ACC-152 Financial Accounting FOR HCM-279 Hospitality Accounting
- ENG-106 Composition II FOR COM-744 Oral Communications in the Workplace
- MAT-140 Finite Math FOR HCM-260 Hospitality Math

1Enrollment in this course requires a Writing COMPASS score of 70 or above.
2Enrollment in this course requires a College Algebra COM-PASS score of 76 or above.

Surgical Technology

Allied Health
2164 Linn Hall
319-398-5566
www.kirkwood.edu/alliedhealth

Entry time
Spring (Cedar Rapids site)
Fall (Distance Education options only*)

Award
Diploma
1 year (3 semesters, including summer)
Associate of Applied Science degree after completion of additional required courses:
2 years (5 semesters, including 1 summer)

Accreditation
The Surgical Technology program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) in collaboration with the American College of Surgeons (ACS) and the Association of Surgical Technologies (AST) based on the recommendations of the Accreditation Review Committee on Education in Surgical Technology and Surgical Assisting (ARC/STSA).

Students who complete a Skilled-Trade four- or five-year apprenticeship program approved by the U.S. Department of Labor, Office of Apprenticeship (OA) can automatically articulate 46 college credits toward completion of this associate of applied science (AAS) degree. This leaves only 18 credit hours of prescribed general education courses needed to earn the AAS degree. Completion of this AAS degree also enables students with the option of transferring the credits from this program to the University of Northern Iowa to pursue a Bachelor of Arts in Technology Management.

This program is designed for those who do not have college degrees and are interested in pursuing further opportunities in supervisory and management positions in the trades.

Surgical Technology

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Entry time
Spring (Cedar Rapids site)
Fall (Distance Education options only*)

Award
Diploma
1 year (3 semesters, including summer)
Associate of Applied Science degree after completion of additional required courses:
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will apply to take the Certified Surgical Technologist test before graduation. The Accreditation Review Committee on Education in Surgical Technology and Surgical Assisting (ARC/STSA) can be contacted at: 6 West Dry Creek Circle, Littleton, CO 80120, 303-694-9262, http://www.arcstsa.org.

Surgical technologists are allied health professionals who are an integral part of the team of medical practitioners providing surgical care to patients in a variety of settings. Surgical technologists work under medical supervision to facilitate the safe and effective conduct of invasive surgical procedures. This individual works under the supervision of a surgeon to ensure the operating room or environment is safe, that equipment functions properly, and that the operative procedure is conducted under conditions that maximize patient safety.

A surgical technologist possesses expertise in the theory and application of sterile and aseptic technique and combines the knowledge of human anatomy, surgical procedures, and implementation tools and technologies to facilitate a physician's performance of invasive therapeutic and diagnostic procedures.

The laboratory portion of the program, which reinforces concepts learned in class, is held in operating suites at area hospitals or the surgical technology lab at Kirkwood. Students have clinical experiences in hospitals and actively participate on operating room teams during surgery while clinical preceptors oversee their work.

*Distance Education locations: Indian Hills Community College, Northeast Iowa Community College. See advisor for Distance Education curriculum.

Career opportunities: hospital operating rooms; sales representative; ambulatory surgery centers; teaching, hospital labor and delivery; hospital central supply; advancement to management positions possible with experience and education.

This curriculum is for the Cedar Rapids based program or the spring start. Curriculum for the Distance Education program, or fall start, is slightly different. Contact Allied Health for information.

**AAS Degree Requirements**

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<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>BIO-161</td>
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<td>3</td>
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<tr>
<td>BIO-182</td>
<td>Basic Microbiology*</td>
<td>1.5</td>
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<tr>
<td>HSC-107</td>
<td>Professionals in Health*</td>
<td>2</td>
</tr>
<tr>
<td>HSC-115</td>
<td>Medical Terminology</td>
<td>4</td>
</tr>
<tr>
<td>HSC-210</td>
<td>Health Skills I*</td>
<td>1</td>
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<td>SUR-126</td>
<td>Surgical Technology I</td>
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<td>SUR-128</td>
<td>Surgical Technology I Lab</td>
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<th>Course Title</th>
<th>Credit Hours</th>
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**Third Semester**

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<td>SPC-101</td>
<td>Fundamentals of Oral Communication* OR</td>
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<td>COM-222</td>
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<td>ENG-105</td>
<td>Composition I*</td>
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<td>PSY-111</td>
<td>Introduction to Psychology*</td>
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<td>MGT-101</td>
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<td>BIO-182</td>
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<td>Medical Terminology</td>
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**Total Associate of Applied Science degree program credit hours** 66

**Diploma Requirements**

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### Career Programs

**Communication** OR **Communication for Health Care Professionals**

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<td>SUR-523</td>
<td>Surgical Technology Practicum II</td>
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</table>

**Total diploma program credit hours**: 46

*Courses may be taken before beginning the program.*

+ or MAT-700 Basic Math, 3 credits, or any college-level math course.

Surgical Technology students will apply to take the Certified Surgical Technologist test.

Students must receive a C in all technical courses in the Surgical Technology program and a C- in BIO-161 Basic Anatomy and Physiology.

### Telecommunications Technology

**Industrial Technologies**

101 Jones Hall  
319-398-4983  
[www.kirkwood.edu/industrialtech](http://www.kirkwood.edu/industrialtech)

#### Entry time

- Fall

#### Award

- Associate of Applied Science degree  
  2 years (4 semesters, 1 summer)  
- Diploma  
  1 year (2 semesters, 1 summer)

#### Industry endorsement earned

- National Career Readiness Certificate

The Telecommunications Technology program gives students the education and skills necessary to succeed in the high-tech world of telecommunication. During the first year, students receive a fundamental introduction to the basics of electrical circuits and system design and maintenance. During the second year, students concentrate on fiber optics, telephony and other subjects critical to the understanding of telecommunication systems.

Students complete a paid internship at a telecommunications firm between their first and second years, which allows them to experience the job market firsthand. One of the highlights of this program is the state-of-the-art telecommunication lab located on campus. Students can transfer credits from this program to the University of Northern Iowa and work toward a Bachelor of Arts in technology management.

#### Career opportunities:

- Fiber optics installation and repair; network management; field installer; field technician; voice and data network management; service center technician; sales and service.

### Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tr>
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<tr>
<td>ELT-402</td>
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<td>ELT-427</td>
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<td>ELT-304</td>
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<td>CSC-110</td>
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<td>ELT-408</td>
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<td>Multiplexing I</td>
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<td>ELT-455</td>
<td>Transmission Circuits I</td>
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</tr>
<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>OR</td>
<td></td>
</tr>
<tr>
<td>PSY-111</td>
<td>Introduction to Psychology</td>
<td>3</td>
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<tr>
<td></td>
<td>Communications Elective</td>
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<tr>
<td><strong>Total program credit hours</strong>:</td>
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### Diploma Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester (Fall)</strong></td>
<td></td>
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</tr>
<tr>
<td>ELT-402</td>
<td>Introduction to Communication Systems</td>
<td>3</td>
</tr>
<tr>
<td>ELT-427</td>
<td>Telephony Circuits I</td>
<td>3</td>
</tr>
<tr>
<td>MAT-745</td>
<td>Technical Mathematics I</td>
<td>4</td>
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<tr>
<td>NET-154</td>
<td>Networking Basics</td>
<td>3</td>
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<td></td>
<td>Communications Elective</td>
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<td><strong>Total program credit hours</strong>:</td>
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Career Programs

Second Semester (Spring)

<table>
<thead>
<tr>
<th>Course Number</th>
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<tbody>
<tr>
<td>ELT-304</td>
<td>Introduction to Electrical Circuits</td>
<td>4</td>
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<tr>
<td>ELT-401</td>
<td>Advanced Electrical Circuits</td>
<td>4</td>
</tr>
<tr>
<td>ELT-500</td>
<td>LAN Design &amp; Protocols</td>
<td>3</td>
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<tr>
<td>ELT-506</td>
<td>Router Basics</td>
<td>3</td>
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Summer Term

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<tr>
<td>ELT-880</td>
<td>Telecommunications Internship</td>
<td>3</td>
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<td></td>
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</table>

Total program credit hours 33

Veterinary Assistant

Ag Sciences
Washington Hall
319-398-5609
www.kirkwood.edu/agrisciences

Entry time
Fall

Award
Diploma
1 year (2 semesters, 1 summer)

As a Veterinary Assistant student, you’ll prepare for a career working with animals in a variety of settings such as veterinary clinics, boarding kennels and grooming salons. You’ll study animal diseases and disease prevention, small animal pharmacology, pet grooming, kennel management, animal behavior, nutrition, legal principles, human relations, communication and computer science.

Career opportunities: veterinary assistants; veterinary receptionists; animal control officers; animal health product sales; retail pet supply sales.

For gainful employment information, including graduation rates, the median debt of students who completed the program and other information, visit www.kirkwood.edu/gainfulemployment.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>AGV-107</td>
<td>Pharmacy Skills</td>
<td>3</td>
</tr>
<tr>
<td>AGV-120</td>
<td>Veterinary Medical Terminology</td>
<td>1</td>
</tr>
<tr>
<td>AGV-143</td>
<td>Canine and Feline Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>AGV-201</td>
<td>Pet Grooming I</td>
<td>3</td>
</tr>
<tr>
<td>AGV-300</td>
<td>Clinical Veterinary Experience</td>
<td>2</td>
</tr>
<tr>
<td>COM-723</td>
<td>Workplace Communications</td>
<td>3</td>
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Summer Term

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<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AGC-932</td>
<td>Internship (coordinator approval)</td>
<td>6</td>
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<td></td>
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</tbody>
</table>

Total program credit hours 45

Veterinary Technician

Ag Sciences
Washington Hall
319-398-5609
www.kirkwood.edu/agrisciences

Entry time
Summer

Award
Associate of Applied Science degree
2 years (4 semesters, 2 summers)

Accreditation
This program is accredited by the AVMA (American Veterinary Medical Association) Committee on Veterinary Technician Education and Activities (CVTEA). For more information, go to www.avma.org.

Veterinary technicians provide professional technical support to veterinarians, biomedical researchers and other scientists. They also care for hospitalized patients; assist the doctor in surgery; perform physical exams, lab work and technical procedures (blood draws, IV placement); take health histories and X-rays; give and monitor anesthesia; provide client education; and perform reception duties.

At Kirkwood, veterinary technician students work with a variety of animals including dogs, cats, horses, cows, pigs, birds, snakes, guinea pigs, hamsters and rats. A strong background in biological sciences is needed for this program.

Career opportunities: small, mixed or large animal practices; humane societies; animal shelters; zoos; specialty veterinary practices; pet shops; biological research labs; animal control agencies; veterinary teaching hospitals; state and federal agencies.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGC-115</td>
<td>Ag Career Orientation</td>
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<tr>
<td>AGV-120</td>
<td>Veterinary Medical Terminology</td>
<td>1</td>
</tr>
<tr>
<td>AGV-126</td>
<td>Animal Anatomy &amp; Physiology I</td>
<td>3</td>
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</tbody>
</table>
The HOBET and COMPASS exams may be taken at the Cedar Rapids campus test center in 2055 Cedar Hall. There is a $25 fee for the HOBET exam payable at the test center. The COMPASS is free.

### Water Environmental Technology

**Industrial Technologies**
319-398-5678
www.kirkwood.edu/industrialtech

**Entry time**
Fall, Spring or Summer

**Award**
Associate of Applied Science degree
2 years (4 semesters, 1 summer)
Diploma
1 year (2 semesters, 1 summer)

This innovative program provides students with real-world experience with either a one-year or two-year program for preparation in the water and wastewater fields. The two-year degree includes technical study in water/wastewater procedures, complemented by math, science, social science, humanities classes as well as an internship. The Water Environmental Technology program comes to you via Environmental Technology Online. The classes were developed by the Kirkwood Community College, Environmental Training Center. Students may transfer credits from this program to the University of Northern Iowa toward a bachelor’s degree in technology management.

Graduates of this program work in municipal water and wastewater treatment plants and the collection systems and distribution systems that serve them. All operators are required by law to be certified. This program provides training and educational experiences that will prepare you for certification examinations. Work experience requirements must be met before you are eligible to take an examination for certification. Be sure to refer to the certifying body in your state to determine eligibility.

**Career opportunities:** municipal water utilities; municipal wastewater treatment plants; rural water systems; industrial waste treatment facilities; engineering firms; privately owned water/wastewater plants.

**Degree Requirements**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHM-110</td>
<td>Introduction to Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>WAT-306</td>
<td>Wastewater Collection Systems</td>
<td>4</td>
</tr>
<tr>
<td>WAT-307</td>
<td>Wastewater Treatment I</td>
<td>4</td>
</tr>
<tr>
<td>WAT-308</td>
<td>Wastewater Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Communications Elective*</td>
<td>3</td>
</tr>
<tr>
<td>MAT-102</td>
<td>Intermediate Algebra*</td>
<td>4</td>
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<tr>
<td>WAT-300</td>
<td>Water Analysis</td>
<td>3</td>
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### Course Title Details

**Spring Term I**

<table>
<thead>
<tr>
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<th>Credit Hours</th>
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<tbody>
<tr>
<td>AGV-140</td>
<td>Veterinary Pharmacology</td>
<td>3</td>
</tr>
<tr>
<td>AGV-146</td>
<td>Large Animal Care</td>
<td>3</td>
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<tr>
<td>AGV-161</td>
<td>Animal Nursing I</td>
<td>3</td>
</tr>
<tr>
<td>AGV-167</td>
<td>Veterinary Clinic Pathology I</td>
<td>3</td>
</tr>
<tr>
<td>ENG-106</td>
<td>Composition II OR</td>
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</tr>
<tr>
<td>SPC-101</td>
<td>Fundamentals of Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
<td>3</td>
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</table>

**Summer Term**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>AGC-932</td>
<td>Internship</td>
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</table>

**Fall Term II**

<table>
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<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>AGC-210</td>
<td>Employment Seminar</td>
<td>1</td>
</tr>
<tr>
<td>AGV-144</td>
<td>Fundamentals of Small Animal Nutrition</td>
<td>3</td>
</tr>
<tr>
<td>AGV-162</td>
<td>Animal Nursing II</td>
<td>3</td>
</tr>
<tr>
<td>AGV-168</td>
<td>Veterinary Clinic Pathology II</td>
<td>3</td>
</tr>
<tr>
<td>AGV-175</td>
<td>Small Animal and Cage Bird Medicine</td>
<td>4</td>
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<tr>
<td>BIO-186</td>
<td>Microbiology</td>
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**Spring Term II**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
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<tbody>
<tr>
<td>AGV-163</td>
<td>Animal Nursing III</td>
<td>3</td>
</tr>
<tr>
<td>AGV-169</td>
<td>Veterinary Clinic Pathology III</td>
<td>3</td>
</tr>
<tr>
<td>AGV-171</td>
<td>Large Animal and Poultry Medicine</td>
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</tr>
<tr>
<td>AGV-179</td>
<td>Lab Animal Medicine</td>
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<td>Humanities Elective</td>
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</table>

**Total program credit hours**

81

**Entrance Requirements**
Prospective students take the HOBET placement exam and COMPASS exam, which is Kirkwood's reading, writing and math placement test. There are minimum HOBET score requirements for admission to the program: Composite: 66%; Reading: 70%; Mathematics: 70%; Science: 60%; and English and Language Usage: 65%. For more information about the HOBET exam, visit www.studyguidezone.com/hobettest.htm.
### Water Environmental Technology Diploma Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
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<td></td>
</tr>
<tr>
<td>WAT-300</td>
<td>Water Analysis</td>
<td>3</td>
</tr>
<tr>
<td>WAT-304</td>
<td>Water Treatment I</td>
<td>4</td>
</tr>
<tr>
<td>WAT-305</td>
<td>Water Distribution Systems</td>
<td>4</td>
</tr>
<tr>
<td>MAT-102</td>
<td>Intermediate Algebra*</td>
<td>4</td>
</tr>
<tr>
<td>Second Semester</td>
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<td></td>
</tr>
<tr>
<td>CHM-110</td>
<td>Introduction to Chemistry</td>
<td>3</td>
</tr>
<tr>
<td>WAT-306</td>
<td>Wastewater Collection Systems</td>
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</tr>
<tr>
<td>WAT-307</td>
<td>Wastewater Treatment I</td>
<td>4</td>
</tr>
<tr>
<td>WAT-308</td>
<td>Wastewater Analysis</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>Communications Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Third Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WAT-932</td>
<td>Internship</td>
<td>3</td>
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<td>Total program credit hours</td>
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### Wastewater Specialist Diploma Requirements

<table>
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<th>Course Number</th>
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<tbody>
<tr>
<td>First Semester</td>
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<tr>
<td>WAT-301</td>
<td>Basic Mechanical Maintenance &amp; Pumps</td>
<td>3</td>
</tr>
<tr>
<td>WAT-306</td>
<td>Wastewater Collection Systems</td>
<td>4</td>
</tr>
<tr>
<td>WAT-307</td>
<td>Wastewater Treatment I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Communications Elective*</td>
<td>3</td>
</tr>
<tr>
<td>Second Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENV-115</td>
<td>Environmental Science*</td>
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</tr>
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<td>WAT-210</td>
<td>Wastewater Treatment: Industrial</td>
<td>4</td>
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<tr>
<td>WAT-308</td>
<td>Wastewater Analysis</td>
<td>3</td>
</tr>
<tr>
<td>WAT-932</td>
<td>Internship</td>
<td>3</td>
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<tr>
<td>Third Semester</td>
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<td></td>
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<tr>
<td>MAT-102</td>
<td>Intermediate Algebra*</td>
<td>4</td>
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<tr>
<td>Total program credit hours</td>
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</table>

*Courses may be taken before beginning the program.

### Web Technologies

**Business & Information Technology**

203 Nielsen Hall  
319-398-5416  
www.kirkwood.edu/businessdept

**Entry time**

Fall, Spring, Summer

**Award**

Associate of Applied Science degree  
2 years (4 semesters)  
Certificates options
Web Technologies provides students with the opportunity to pursue an associate degree built on a strong base of Web-related course work, tailored to the student’s individual interest with one of three elective emphasis areas. For those who do not presently need or have time to complete a degree, there are also two shorter certificate options available.

This degree appeals to students with a range of interests connected with the Web. Students begin with a set of basic courses covering HTML and CSS, Web media, and introductory computer and programming skills. As the program progresses, students learn various aspects of Web design and development through courses emphasizing the workflow associated with the planning process, site design and the use of standard technologies, such as content management systems, to provide client solutions. Students also consider the business side of the Web development through courses in marketing and e-commerce, learning about current topics such as Web analytics and search engine optimization along with payments, catalogs and shopping carts. The use of scripting, PHP and databases is also included.

**Web Development emphasis options:**

For students wishing to go further with programming, two elective concentrations are offered. The first emphasizes the Java programming language and culminates in a course in creating dynamic interactions with Java Server Pages. The second, based on Microsoft technology, emphasizes the Visual Basic language and culminates in the use of ASP.NET for providing dynamic pages and Web services. Both options include a course in client-side scripting.

**Web Graphic Design emphasis option:**

For students wishing to focus on design, there is an elective concentration in Web graphic design, which includes an additional course in digital layout, alongside courses covering several professional graphics tools, including Adobe Photoshop, Illustrator and Flash.

**Career opportunities:** digital developer; Web editor; eBusiness Web designer; Web graphics designer; information technology designer; Web marketing specialist; interactive marketer; website content manager; multimedia/Web specialist; Web software developer; Web application developer; Web systems manager.

**Degree Requirements**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Semester</td>
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</tr>
<tr>
<td>BCA-302</td>
<td>Graphics &amp; Multimedia for the Web</td>
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<tr>
<td>CIS-121</td>
<td>Introduction to Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>CIS-207</td>
<td>Fundamentals of Web Programming</td>
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</tr>
<tr>
<td>CSC-110</td>
<td>Introduction to Computers</td>
<td>3</td>
</tr>
<tr>
<td>MAT-102</td>
<td>Intermediate Algebra$^2$</td>
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**Second Semester**

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<thead>
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<th>Course Title</th>
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<tbody>
<tr>
<td>BCA-290</td>
<td>Web Design Principles</td>
<td>3</td>
</tr>
<tr>
<td>CIS-307</td>
<td>Introduction to Databases OR</td>
<td>3</td>
</tr>
<tr>
<td>CIS-332</td>
<td>Database &amp; SQL</td>
<td>3</td>
</tr>
<tr>
<td>ENG-105</td>
<td>Composition I$^1$</td>
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<tr>
<td>MKT-110</td>
<td>Principles of Marketing</td>
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<td><strong>Emphasis area course</strong></td>
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**Third Semester**

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<th>Course Title</th>
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<tr>
<td>BCA-320</td>
<td>Content Management Systems</td>
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</tr>
<tr>
<td>BUS-151</td>
<td>Introduction to E-Commerce</td>
<td>3</td>
</tr>
<tr>
<td>CIS-334</td>
<td>PHP/Apache/MySQL</td>
<td>3</td>
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<tr>
<td></td>
<td><strong>Emphasis area course</strong></td>
<td><strong>3</strong></td>
</tr>
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**Fourth Semester**

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<th>Course Title</th>
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<tbody>
<tr>
<td>BCA-800</td>
<td>Web Technologies Capstone</td>
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<tr>
<td>BUS-290</td>
<td>Employment Search &amp; Workplace</td>
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<tr>
<td>CIS-280</td>
<td>Client Side Scripting</td>
<td>3</td>
</tr>
<tr>
<td>ENG-106</td>
<td>Composition II OR</td>
<td>3</td>
</tr>
<tr>
<td>SPC-101</td>
<td>Fundamentals of Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>MGT-145</td>
<td>Human Relations in Management</td>
<td>3</td>
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<tr>
<td></td>
<td><strong>Emphasis area courses</strong></td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
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</tbody>
</table>

**Total program credit hours** 62

**Emphasis Area Courses**

**Graphic Design - Take 3 of these 4 (CIS-307 above)**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>GRA-127</td>
<td>Illustrator I</td>
<td>3</td>
</tr>
<tr>
<td>GRA-131</td>
<td>Digital Layout</td>
<td>3</td>
</tr>
<tr>
<td>GRA-140</td>
<td>Digital Imaging</td>
<td>3</td>
</tr>
<tr>
<td>GRA-195</td>
<td>Introduction to Web Media</td>
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</table>

**Open Source Programming (CIS-332 above)**

<table>
<thead>
<tr>
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<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-172</td>
<td>Java</td>
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<tr>
<td>CIS-176</td>
<td>Java II</td>
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<tr>
<td>CIS-181</td>
<td>Java III</td>
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</table>

**Microsoft Programming (CIS-332 above)**

<table>
<thead>
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<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-622</td>
<td>.NET Programming I</td>
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</tr>
<tr>
<td>CIS-624</td>
<td>.NET Programming II</td>
<td>3</td>
</tr>
<tr>
<td>CIS-626</td>
<td>.NET Programming III</td>
<td>3</td>
</tr>
</tbody>
</table>

**Web Development Certificate Requirements**

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-121</td>
<td>Introduction to Programming Logic</td>
<td>3</td>
</tr>
<tr>
<td>CIS-207</td>
<td>Fundamentals of Web Programming</td>
<td>3</td>
</tr>
<tr>
<td>CIS-307</td>
<td>Introduction to Databases OR</td>
<td>3</td>
</tr>
<tr>
<td>CIS-332</td>
<td>Databases &amp; SQL</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>9</strong></td>
</tr>
</tbody>
</table>
Career Programs

Second Semester
CIS-280  Client Side Scripting  3
BCA-290  Web Design Principles  3
CIS-334  PHP/ApacheMySQL  3

Total program credit hours  18

Web Design Certificate Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS-207</td>
<td>Fundamentals of Web Programming</td>
<td>3</td>
</tr>
<tr>
<td>BCA-302</td>
<td>Graphics and Multimedia for the Web</td>
<td>3</td>
</tr>
<tr>
<td>MKT-110</td>
<td>Principles of Marketing</td>
<td>3</td>
</tr>
</tbody>
</table>

Total program credit hours  18

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT-764</td>
<td>Welding Mathematics I</td>
<td>2</td>
</tr>
<tr>
<td>MAT-707</td>
<td>Algebra Mastery I</td>
<td>2</td>
</tr>
<tr>
<td>WEL-102</td>
<td>Virtual Reality Welding</td>
<td>2</td>
</tr>
<tr>
<td>WEL-105</td>
<td>Welding Principles</td>
<td>2</td>
</tr>
<tr>
<td>WEL-110</td>
<td>Welding Blueprint Reading</td>
<td>2</td>
</tr>
<tr>
<td>WEL-156</td>
<td>Welding Skills I</td>
<td>4</td>
</tr>
<tr>
<td>WEL-157</td>
<td>Welding Skills II</td>
<td>4</td>
</tr>
</tbody>
</table>

Total program credit hours  18

*Your COMPASS writing score will determine if you need to take prerequisite classes.

*Your COMPASS math score will determine if you need to take prerequisite classes.

Welding

Industrial Technologies
101 Jones Hall
319-398-4983
www.kirkwood.edu/industrialtech

Entry time
Fall or Spring
(daytime and evening classes available)

Award
Associate of Applied Science degree
2 years (4 semesters)
Certificate
2 semesters

Certification
Welder qualification to American Welding Society codes is available in several welding processes. This program also offers a Shielded Metal Arc Weld Certificate.

Industry endorsement earned
OSHA 10-General Industry; Adult First Aid with CPR; Forklift Class 1, 3, 4, 5, 7; National Career Readiness Certificate; American Welding Society (AWS) certifications; American Society of Mechanical Engineers (ASME) qualifications.

Students in the welding program can choose a certificate or an Associate of Applied Science degree. The associate degree program includes Shielded Metal Arc Welding, Gas Metal Arc Welding, Gas Tungsten Arc Welding and Pipe Welding. Graduates of this program can transfer to the University of Northern Iowa to pursue a Technology Management Bachelor of Arts degree.

Career opportunities: trade unions such as Ironworkers, Plumbers and Pipefitters, and Boilermakers; production welder; welding fabrication; weld shop owner; maintenance welder; welding inspection; welding instructor; welding equipment sales.

Degree Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>MAT-707</td>
<td>Algebra Mastery I</td>
<td>2</td>
</tr>
<tr>
<td>WEL-102</td>
<td>Virtual Reality Welding</td>
<td>2</td>
</tr>
<tr>
<td>WEL-105</td>
<td>Welding Principles</td>
<td>2</td>
</tr>
<tr>
<td>WEL-110</td>
<td>Welding Blueprint Reading</td>
<td>2</td>
</tr>
<tr>
<td>WEL-156</td>
<td>Welding Skills I</td>
<td>4</td>
</tr>
<tr>
<td>WEL-157</td>
<td>Welding Skills II</td>
<td>4</td>
</tr>
</tbody>
</table>

Total program credit hours  18

Second Semester (Spring)
MAT-765  Welding Mathematics II  3
WEL-128  Brazing/Soldering  2
WEL-130  Oxyacetylene Welding  2
WEL-184  Gas Metal Arc Welding  3
WEL-208  Introduction to Fabrication  2

Total program credit hours  15

Third Semester (Fall)
CSC-110  Introduction to Computers  3
WEL-113  Welding Blueprint Reading/Pipe  1
WEL-185  Advanced Gas Metal Arc Welding  3
WEL-192  Gas Tungsten Arc Welding  4
WEL-302  Pipe Welding/SMAW  2

Total program credit hours  13

Fourth Semester (Spring)
MGT-145  Human Relations in Management  3

OR

PSY-111  Introduction to Psychology  3

Total program credit hours  18

Total program credit hours  65

Shielded Metal Arc Welding Certificate Requirements

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>WEL-156</td>
<td>Welding Skills I</td>
<td>4</td>
</tr>
<tr>
<td>WEL-157</td>
<td>Welding Skills II</td>
<td>4</td>
</tr>
</tbody>
</table>

Total program credit hours  8
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credit Hours</th>
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</thead>
<tbody>
<tr>
<td>MAT-764</td>
<td>Welding Mathematics I</td>
<td>2</td>
</tr>
<tr>
<td>MAT-052</td>
<td>Pre-Algebra</td>
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</tr>
<tr>
<td>WEL-110</td>
<td>Welding Blueprint Reading</td>
<td>2</td>
</tr>
<tr>
<td>WEL-146</td>
<td>AWS Bend Test</td>
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</tr>
</tbody>
</table>

Total program credit hours: 16
## Arts and Sciences Core Courses

**Applicable to A.A. and A.S. degree requirements. One diversity course is required for the A.A. degree. Courses with (D) before the course number satisfy the diversity requirement.**

### Communication - Speech

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>SPC-101</td>
<td>Fundamentals of Oral Communication</td>
<td>3</td>
</tr>
<tr>
<td>or SPC-112</td>
<td>Public Speaking</td>
<td>3</td>
</tr>
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</table>

### Communication - Writing

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
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</thead>
<tbody>
<tr>
<td>ENG-120</td>
<td>College Writing (Composition I-II equivalent)</td>
<td>5</td>
</tr>
<tr>
<td>or ENG-105</td>
<td>Composition I</td>
<td>3</td>
</tr>
<tr>
<td>and ENG-106</td>
<td>Composition II</td>
<td>3</td>
</tr>
<tr>
<td>or ENG-108</td>
<td>Composition II: Technical Writing</td>
<td>3</td>
</tr>
</tbody>
</table>

### History - Cultures

**Students seeking an A.A. degree complete two History-Cultures courses. Students seeking an A.S. degree complete any three History - Cultures or Humanities courses.**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>(D) ANT-105</td>
<td>Cultural Anthropology</td>
<td>3</td>
</tr>
<tr>
<td>(D) ASL-171</td>
<td>American Sign Language II</td>
<td>4</td>
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<tr>
<td>(D) ASL-241</td>
<td>American Sign Language III</td>
<td>3</td>
</tr>
<tr>
<td>(D) ASL-271</td>
<td>American Sign Language IV</td>
<td>3</td>
</tr>
<tr>
<td>(D) CLS-140</td>
<td>Understanding Cultures: The Mideast</td>
<td>3</td>
</tr>
<tr>
<td>(D) CLS-151</td>
<td>Understanding Cultures: Latin America</td>
<td>3</td>
</tr>
<tr>
<td>(D) CLS-159</td>
<td>Understanding Cultures: Indigenous Central America</td>
<td>3</td>
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<tr>
<td>(D) CLS-165</td>
<td>Understanding Cultures: Modern Japan</td>
<td>3</td>
</tr>
<tr>
<td>(D) CLS-167</td>
<td>Understanding Cultures: Modern China</td>
<td>3</td>
</tr>
<tr>
<td>(D) FLC-241</td>
<td>Intermediate Chinese I</td>
<td>4</td>
</tr>
<tr>
<td>(D) FLC-242</td>
<td>Intermediate Chinese II</td>
<td>4</td>
</tr>
<tr>
<td>(D) FLF-142</td>
<td>Elementary French II</td>
<td>4</td>
</tr>
<tr>
<td>(D) FLF-241</td>
<td>Intermediate French I</td>
<td>4</td>
</tr>
<tr>
<td>(D) FLF-242</td>
<td>Intermediate French II</td>
<td>4</td>
</tr>
<tr>
<td>(D) FLG-142</td>
<td>Elementary German II</td>
<td>4</td>
</tr>
<tr>
<td>(D) FLG-241</td>
<td>Intermediate German I</td>
<td>4</td>
</tr>
<tr>
<td>(D) FLG-242</td>
<td>Intermediate German II</td>
<td>4</td>
</tr>
<tr>
<td>(D) FLS-142</td>
<td>Elementary Spanish II</td>
<td>4</td>
</tr>
<tr>
<td>(D) FLS-241</td>
<td>Intermediate Spanish I</td>
<td>4</td>
</tr>
<tr>
<td>(D) FLS-242</td>
<td>Intermediate Spanish II</td>
<td>4</td>
</tr>
<tr>
<td>HIS-121</td>
<td>Ancient Mediterranean World</td>
<td>3</td>
</tr>
<tr>
<td>HIS-122</td>
<td>Europe-Age of Monarchy</td>
<td>3</td>
</tr>
<tr>
<td>HIS-123</td>
<td>Europe-Age of Revolution</td>
<td>3</td>
</tr>
<tr>
<td>HIS-124</td>
<td>Europe-Age of Nationalism</td>
<td>3</td>
</tr>
<tr>
<td>HIS-135</td>
<td>Modern World Military History</td>
<td>3</td>
</tr>
<tr>
<td>HIS-151</td>
<td>U.S. History to 1877</td>
<td>3</td>
</tr>
<tr>
<td>HIS-152</td>
<td>U.S. History Since 1877</td>
<td>3</td>
</tr>
<tr>
<td>(D) HIS-221</td>
<td>Holocaust/Genocide: Memory &amp; Literature</td>
<td>3</td>
</tr>
<tr>
<td>(D) HIS-254</td>
<td>American Indian History</td>
<td>3</td>
</tr>
<tr>
<td>HIS-291</td>
<td>History of Science</td>
<td>3</td>
</tr>
<tr>
<td>(D) REL-101</td>
<td>Survey of World Religions</td>
<td>3</td>
</tr>
<tr>
<td>(D) REL-120</td>
<td>Judaism, Christianity &amp; Islam</td>
<td>3</td>
</tr>
<tr>
<td>(D) REL-125</td>
<td>Introduction to Islam</td>
<td>3</td>
</tr>
<tr>
<td>(D) REL-130</td>
<td>Intro to Religions of the East</td>
<td>3</td>
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<tr>
<td>(D) REL-140</td>
<td>Religion in the United States</td>
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</tr>
<tr>
<td>REL-145</td>
<td>Intro to Christianity</td>
<td>3</td>
</tr>
<tr>
<td>(D) REL-160</td>
<td>Religions of China</td>
<td>3</td>
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</tbody>
</table>

### Humanities

**Students seeking an A.A. degree complete one course from group 1, one course from group 2 and one course from group 1, 2 or 3.**

#### Group 1 - Introductory Art & Humanities

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>ART-101</td>
<td>Art Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>ART-163</td>
<td>Sculpture</td>
<td>3</td>
</tr>
<tr>
<td>ART-173</td>
<td>Ceramics</td>
<td>3</td>
</tr>
<tr>
<td>ART-184</td>
<td>Photography</td>
<td>3</td>
</tr>
<tr>
<td>ART-186</td>
<td>Digital Photography</td>
<td>3</td>
</tr>
<tr>
<td>ART-203</td>
<td>Art History I</td>
<td>3</td>
</tr>
<tr>
<td>ART-204</td>
<td>Art History II</td>
<td>3</td>
</tr>
<tr>
<td>ART-420</td>
<td>Introduction to Glass</td>
<td>3</td>
</tr>
<tr>
<td>DRA-101</td>
<td>Introduction to Theatre</td>
<td>3</td>
</tr>
<tr>
<td>DRA-116</td>
<td>Film Analysis</td>
<td>3</td>
</tr>
<tr>
<td>DRA-125</td>
<td>Introduction to Play Analysis</td>
<td>3</td>
</tr>
<tr>
<td>HUM-105</td>
<td>Working in America</td>
<td>3</td>
</tr>
<tr>
<td>HUM-116</td>
<td>Encounters in Humanities</td>
<td>3</td>
</tr>
<tr>
<td>HUM-123</td>
<td>U.S. Film History</td>
<td>3</td>
</tr>
<tr>
<td>HUM-124</td>
<td>World Film History</td>
<td>3</td>
</tr>
<tr>
<td>HUM-190</td>
<td>Culture and Technology</td>
<td>3</td>
</tr>
<tr>
<td>MUS-100</td>
<td>Music Appreciation</td>
<td>3</td>
</tr>
<tr>
<td>MUS-127</td>
<td>Great Composers</td>
<td>3</td>
</tr>
<tr>
<td>PHI-101</td>
<td>Introduction to Philosophy</td>
<td>3</td>
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<tr>
<td>PHI-105</td>
<td>Introduction to Ethics</td>
<td>3</td>
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<tr>
<td>PHI-111</td>
<td>Basic Reasoning</td>
<td>3</td>
</tr>
<tr>
<td>PHI-130</td>
<td>Philosophy of Human Nature</td>
<td>3</td>
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</table>

#### Group 2 - Literature

**(Prereqs: ENG-105 or ENG-120)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIT-203</td>
<td>Forms of Literature: Story Cycle</td>
<td>3</td>
</tr>
<tr>
<td>LIT-204</td>
<td>Forms of Literature: Nonfiction</td>
<td>3</td>
</tr>
<tr>
<td>LIT-205</td>
<td>Forms of Literature: Drama</td>
<td>3</td>
</tr>
<tr>
<td>LIT-206</td>
<td>Forms of Literature: Fiction</td>
<td>3</td>
</tr>
</tbody>
</table>
Students seeking an A.A. degree complete six credit hours from Group A below. See an adviser for requirements specific to your degree.

**Group A**

- BIO-104 Introductory Biology with Lab 3
- BIO-112 General Biology I 4
- BIO-113 General Biology II 4
- BIO-124 Botany for Non-Majors 4
- BIO-154 Human Biology 3
- BIO-189 Microbes and Society 3
- BIO-190 Introductory Biotechnology 3
- BIO-195 Human Evolution 3
- CHM-110 Intro to Chemistry 3
- CHM-111 Intro to Chemistry Lab 1
- CHM-132 Intro Organic & Biochemistry 4
- CHM-165 General Chemistry I 4
- CHM-175 General Chemistry II 4
- ENV-115 Environmental Science 3
- PHS-151 Intro to Astronomy 3
- PHS-170 Physical Geology* OR 3
- PHS-175 Environmental Geology* 3
- PHS-171 Physical Geology Lab 1
- PHS-176 Environmental Geology Lab 1
- PHS-180 Evolution of the Earth 3
- PHS-181 Evolution of the Earth Lab 1
- PHY-120 Introductory Physics 3
- PHY-162 College Physics I 4
- PHY-172 College Physics II 4
- PHY-212 Classical Physics I 5
- PHY-222 Classical Physics II 5
- SCI-120 Forensic Science 3
- SCI-122 Forensic Science Lab 1

*Only one Geology course can count as Science credit.

**Science**

**Group B**

- BIO-168 Human Anatomy & Physiology I w/ Lab 4
- BIO-173 Human Anatomy & Physiology II w/ Lab 4
- BIO-186 Microbiology 4
- CHM-262 Organic Chemistry I 4.5
- CHM-272 Organic Chemistry II 4.5

**Social Science**

**Students seeking an A.A. degree complete 3 courses. Students seeking an A.S. degree complete 2 courses.**

- CRJ-100 Introduction to Criminal Justice 3
- CRJ-200 Criminology 3
- CRJ-201 Juvenile Delinquency 3
- ECE-170 Child Growth and Development 3
- ECN-120 Principles of Macroeconomics 3
- ECN-130 Principles of Microeconomics 3
- EDU-240 Educational Psychology 3
- (D) EDU-248 Exceptional Persons 3
- GEO-115 Human Geography 3
- (D) GEO-121 World Regional Geography 3
### Arts and Sciences Core Courses

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>GEO-162</td>
<td>Geography of Iowa</td>
<td>3</td>
</tr>
<tr>
<td>HSV-101</td>
<td>Human Services Career</td>
<td>3</td>
</tr>
<tr>
<td>HSV-201</td>
<td>Loss, Trauma and Resilience</td>
<td>3</td>
</tr>
<tr>
<td>HSV-292</td>
<td>Substance Abuse and Treatment</td>
<td>3</td>
</tr>
<tr>
<td>MMS-101</td>
<td>Mass Media</td>
<td>3</td>
</tr>
<tr>
<td>POL-110</td>
<td>Introduction to Political Science</td>
<td>3</td>
</tr>
<tr>
<td>POL-111</td>
<td>American National Government</td>
<td>3</td>
</tr>
<tr>
<td>POL-121</td>
<td>International Relations</td>
<td>3</td>
</tr>
<tr>
<td>(D) POL-125</td>
<td>Comparative Government &amp; Politics</td>
<td>3</td>
</tr>
<tr>
<td>POL-150</td>
<td>Introduction to U.S. Foreign Policy</td>
<td>3</td>
</tr>
<tr>
<td>PRL-101</td>
<td>Paralegal Studies Orientation</td>
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</tr>
<tr>
<td>PSY-111</td>
<td>Introduction to Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-121</td>
<td>Developmental Psychology</td>
<td>3</td>
</tr>
<tr>
<td>PSY-241</td>
<td>Abnormal Psychology</td>
<td>3</td>
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<tr>
<td>PSY-251</td>
<td>Social Psychology</td>
<td>3</td>
</tr>
<tr>
<td>SOC-110</td>
<td>Intro to Sociology</td>
<td>3</td>
</tr>
<tr>
<td>SOC-115</td>
<td>Social Problems</td>
<td>3</td>
</tr>
<tr>
<td>SOC-120</td>
<td>Marriage and Family</td>
<td>3</td>
</tr>
<tr>
<td>(D) SOC-265</td>
<td>Introduction to Lesbian, Gay, Bisexual &amp; Transgender Studies</td>
<td>3</td>
</tr>
<tr>
<td>SOC-284</td>
<td>Sociology of the Environment</td>
<td>3</td>
</tr>
<tr>
<td>(D) SOC-200</td>
<td>Minority Group Relations</td>
<td>3</td>
</tr>
</tbody>
</table>

### Additional Diversity

*Students seeking an A.A. degree may take one of these courses to satisfy the diversity requirement. They count as electives, not as core.*

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLS-125</td>
<td>Language and Society</td>
<td>3</td>
</tr>
<tr>
<td>CRJ-202</td>
<td>Cultural Awareness for Criminal Justice Practitioners</td>
<td>3</td>
</tr>
<tr>
<td>FLC-142</td>
<td>Elementary Chinese II</td>
<td>3</td>
</tr>
<tr>
<td>GLS-120</td>
<td>Education Experience Abroad</td>
<td>3</td>
</tr>
<tr>
<td>LIT-158</td>
<td>Literature of African Peoples</td>
<td>3</td>
</tr>
</tbody>
</table>
Course Descriptions

How to Read Course Descriptions

ENG-105 Composition I (3)
Develops expository writing with emphasis on organization, supporting details, style, vocabulary and library research skills. (3/0/0/0), Prereq: ENG-101 or qualifying placement score; Arts & Sciences Elective Code: A

Three-letter prefix (ENG) stands for the subject or department of study. (See list below.)

Credit value (3) of the course is indicated in semester hours.

(3/0/0/0) Indicates hours per week spent in lecture, lab, clinic and internships respectively.

Arts & Sciences Elective Code:
A = Transfer courses
B = Applied Science and Technology program courses
D = Developmental courses

Course Key

Course descriptions are listed according to the following prefixes:

ACC: Accounting
ACC-111 Introduction to Accounting (3)
Introduces accounting principles for non-accounting majors. Includes analyzing, classifying and recording business transactions. Emphasizes understanding the complete accounting cycle and preparing financial statements, bank reconciliations and payroll. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: B

ACC-120 Survey of Accounting (3)
Introduces basic concepts of financial and managerial accounting, with emphasis on how accounting reports are used by managers, investors, and other business stakeholders and how transactions impact the three primary financial statements, showing the integrated nature of accounting. Provides an overview of the accounting cycle, internal control, budgeting, decision making and inventory management issues. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: B

ACC-152 Financial Accounting (4)
Introduces the basic concepts and procedures of accounting including the accounting cycle, merchandising accounting, internal control, long-term and contingent liabilities, corporate accounting and the collection of data for external reporting. Includes the preparation and analysis of financial statements. Credits: 4; Hours: (4/0/0/0), Arts & Sciences Elective Code: B

ACC-156 Managerial Accounting (4)
Surveys the basic concepts and procedures of accounting to include managerial, manufacturing and cost accounting for decision making. Credits: 4; Hours: (4/0/0/0), Prereq: ACC-152; Arts & Sciences Elective Code: B

ACC-191 Financial Analysis (3)
Provides basic techniques for analyzing the flow of a business' funds and methods for selecting and interpreting financial ratios. Credits: 3; Hours: (3/0/0/0), Prereq: minimum grade C in ACC-152; Arts & Sciences Elective Code: B

ACC-200 Professionalism: Accounting Club (1)
Develops and recognizes leadership and teamwork through a student-focused professional organization. Emphasizes leadership develop-
ment and professional networking activities. Students participate in state and local conferences, perform community service and seek career skills. This course may be repeated for credit. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

ACC-222 Cost Accounting (4)
Relates the principles and methods of analyzing accounting data for planning and control, product costing and decision making. Emphasis on job orders, process and standard cost accounting systems, budgeting and cost-volume-profit analysis. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-140, minimum grade C- in ACC-156; Arts & Sciences Elective Code: A

ACC-231 Intermediate Accounting I (4)
Includes a review of accounting procedures and the reporting process. Provides an in-depth analysis of the asset and liability sections of the balance sheet. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-140, minimum grade C- in ACC-156; Arts & Sciences Elective Code: A

ACC-232 Intermediate Accounting II (4)
Emphasizes corporate accounting, incomplete records, price level accounting, the funds statement, pension accounting, leases and financial statement analysis. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-140, minimum grade C- in ACC-231; Arts & Sciences Elective Code: A

ACC-265 Income Tax Accounting (4)
Introduces the federal income tax law, its purpose and development and its significance for tax planning. Emphasis is placed on individual and business tax law with an introduction to corporations. Credits: 4, Hours: (4/0/0/0), Prereq: minimum grade C- in ACC-152; Arts & Sciences Elective Code: A

ACC-313 Accounting Applications (4)
Compared the manual accounting cycle system to professional accounting software. Introduces concepts and procedures used in determining payroll taxes, and laws and regulations affecting payroll. Emphasizes accounting cycles and the management of accounting data through student projects. Students use a commercial accounting package. Credits: 4, Hours: (4/0/0/0), Prereq: BCA-205 or CSC-110, ACC-111 or ACC-152; Arts & Sciences Elective Code: B

ACC-362 Accounting Spreadsheets (4)
Addresses the use of spreadsheet software as a problem-solving tool for the accountant. This tool is used to develop models that can be used to analyze data, create what-if scenarios, and automate computations, sort and group data, and view data graphically. The topics include, but are not limited to planning, building, testing and documenting worksheets. Special topics include, but are not limited to functions, charts, solver, data management, multiple worksheets, data tables, integration with other applications and macros. Credits: 4, Hours: (4/0/0/0), Prereq: BCA-205 or CSC-110, ACC-111 or ACC-152; Arts & Sciences Elective Code: B

ACC-491 Accounting Capstone (3)
Brings together and develops further the various accounting concepts introduced in earlier course work. Demonstrates how the various components of an accounting system work together. This course is project-based with emphasis on evaluation and analysis of accounting reports. Credits: 3, Hours: (3/0/0/0), Prereq: minimum grade C- in ACC-222, ACC-231, ACC-265 and ACC-362; Arts & Sciences Elective Code: B

ACC-928 Independent Study (1-3)
Provides readings, training and basic research under the guidance of a faculty member. Frequently includes an extensive community service component. Credits: 1-3, Hours: (0/2-6/0/0), Arts & Sciences Elective Code: B; Comments: Permis- sion of sponsoring faculty member

ACC-949 Special Topics (1-3)
Offers a learning experience using readings, case studies, group projects and basic research. Instruction related to current relevant topics in the accounting and business environment. Credits: 1-3, Hours: (0/2-6/0/0), Prereq: minimum grade C- in ACC-152; Arts & Sciences Elective Code: B

ADM: Administrative Assistant

ADM-105 Introduction to Keyboarding (1)
Provides instruction in alphabetic and numeric keyboarding and includes exercises designed to increase speed to 30 words per minute with five or fewer errors on five-minute timed writings. Includes instruction in the use of proofreaders' marks and how to create a business letter in block format using Microsoft Word. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

ADM-122 Document Formatting (2)
Presumes students already know the alphabetic and numeric keyboard. Instruction includes exercises designed to increase speed to 45 words per minute with five or fewer errors on five-minute timed writings. Includes instruction in creating standard business letters, interoffice memos, tables, simple reports and newsletters using Microsoft Word. Credits: 2, Hours: (1/2/0/0), Prereq: ADM-105; Arts & Sciences Elective Code: A

ADM-133 Business Math and Calculators (3)
Provides for the integration of business math concepts and formulas. Emphasizes current business math practices built on the foundation of mathematical problem solving. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-707; Arts & Sciences Elective Code: A

ADM-142 Desktop Publishing (3)
Allows students to create professional-quality documents, such as, but not limited to, booklets, brochures, newsletters, using desktop publishing software. The student will also integrate text, graphic and image files previously created with a variety of application software. Credits: 3, Hours: (2/2/0/0), Prereq: ADM-122 or BCA-135; Arts & Sciences Elective Code: B

ADM-154 Business Communication (3)
Develops skills and knowledge needed for effective verbal and written communication in the workplace environment. Focuses on creating business-related correspondence including emails, memos, letters and reports, preparing and giving oral presentations, and learning important practices in doing business with other cultures. Credits: 3, Hours: (3/0/0/0), Prereq: COM-710 and ADM-165, or ENG-105; Arts & Sciences Elective Code: B

ADM-163 Office Concepts and Procedures (3)
Provides for an understanding of the concepts, terminology, skills and procedures needed for employment in an office. This course covers such topics as telephone and teleconference techniques, travel arrangements, meetings, mail and shipping services, ethics and professionalism, office supplies and other basic office information. Credits: 3, Hours: (3/0/0/0), Prereq: COM-710 or ENG-105; Coreq: BCA-136, BCA-179, BCA-205; Arts & Sciences Elective Code: B

ADM-164 Administrative Office Applications (3)
Integrates the skills, knowledge and personal qualities necessary for an administrative assistant to perform the operational and supervisory functions for today's computerized office. Provides simulated office activities in a team environment using integrated software, problem-solving techniques and decision-making experiences with special emphasis on creativity, computer applications and professionalism. Credits: 3, Hours: (3/0/0/0), Prereq: ADM-163; Arts & Sciences Elective Code: A; Comments: This is a capstone course that utilizes software to complete a simulation. Teaching of the software is not done in this course.

ADM-165 Information Processing (3)
Develops and applies oral, written and listening communication skills using a variety of tools in an individualized environment. Students learn to use transcription and voice recognition equipment in order to make formatting decisions while improving listening skills. Student learning outcomes focus on English, proofreading, editing and producing mailable documents. Credits: 3, Hours: (3/0/0/0), Prereq: COM-710 or ENG-105; Coreq: BCA-136; Arts & Sciences Elective Code: B

ADM-176 Electronic Records System (3)
Create, collect, process, maintain, retrieve, use, store, disseminate and dispose of records using an electronic records system. Student use the Windows environment to store records according to ARMA (Association of Records Managers and Administrators, Inc.) alphabetic rules, Numeric, geographic, and subject filing rules are explored. Students research and present up-to-date material on retention, retrieval and transfer of records. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

ADM-187 Administrative Assistant Capstone (1)
Focuses on assembling artifacts highlighting student's learning while attending Kirkwood Community College. Results in the creation of electronic and paper portfolios, showcasing student's competency levels for each of the Administrative Assistant program outcomes. Builds student's employment conversation skills. Conversation skills and the e-portfolio are featured during the final exam presentation. Credits: 1, Hours: (1/0/0/0), Prereq: ADM-164, BCA-136; Coreq: BUS-290, BUS-932; Arts & Sciences Elective Code: B

Course Descriptions
ADN-257 Professionalism in the Workplace (2)
This course covers the various aspects of professionalism. Students complete five units of course work that focus on professional growth, professional organizations, success, professional image and research. Students create a professional growth plan, determine the value of professional organizations, develop success attributes, hone a professional image and research various career options. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

ADN-928 Independent Study (1-3)
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1. (0/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

ADN: Associate Degree Nursing

ADN-105 Introduction to Associate Degree Nursing (3)
Examining the role of the associate degree registered nurse. Concepts of nursing process, wellness, community and management are introduced. Credits: 1, Hours: (1/0/0/0), Prereq: PNN-533, PNN-732, PSY-111, PSY-121, SPC-101; Coreq: ADN-577, ADN-723; Arts & Sciences Elective Code: B

ADN-160 Nursing Care of Specific Populations (3)
Builds on the concepts of previous nursing courses with an emphasis on the care of high risk obstetrical, pediatric and mental health patients. Focuses on health promotion, ethical/legal considerations, family-centered care and common alterations seen in high risk obstetric, pediatric and mental health patients. Credits: 3, Hours: (3/0/0/0), Prereq: PNN-129, PNN-436, PNN-702; Coreq: ADN-730; Arts & Sciences Elective Code: B

ADN-170 Concepts of Nursing (5.5)
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, interdisciplinarity collaboration and professionalism throughout the course. Credits: 5.5, Hours: (5/1/0/0), Prereq: ADN-160, ADN-730; Coreq: ADN-740; Arts & Sciences Elective Code: B

ADN-180 Advanced Concepts of Nursing (4)
Introduces nursing students to advanced principles of patient care, building on acquired knowledge and development of critical thinking skills from previous course work. Focuses on patient care of those with acute and chronic multi-system disease dysfunction and the physical and psychosocial adaptation of adult patients. Discusses professional nursing roles in the community, leadership and management, as well as nursing trends. Integrates the nursing process and evidence-based practice throughout the course. Emphasizes acquiring knowledge to facilitate clinical decision-making skills needed to provide safe patient care. This course is taught concurrently with Advance Concepts of Nursing Clinic. Credits: 4, Hours: (4/0/0/0), Prereq: ADN-170, ADN-740; Coreq: ADN-750; Arts & Sciences Elective Code: B

ADN-187 Administrative Assistant Capstone (1)
Focuses on assembling artifacts highlighting student's learning while attending Kirkwood Community College. Results in the creation of electronic and paper portfolios, showcasing student's competency levels for each of the Administrative Assistant program outcomes. Builds student's employment conversation skills. Conversation skills and the e-portfolio are featured during the final exam presentation. Credits: 1, Hours: (1/0/0/0), Prereq: ADN-164, BCA-138; Coreq: BUS-290, BUS-932; Arts & Sciences Elective Code: B

ADN-500 Professional Roles III: Transitions (2)
Provides the individual pursuing a nursing career with the knowledge and skills necessary to effectively lead and manage others in the health care system. Emphasizes the RN role in leadership and management including practical nursing standards of practice and the significance of functioning according to state regulations and statutes, role transition from PN to RN and nursing process. Credits: 2, Hours: (2/0/0/0), Prereq: PNN-129, PNN-436, PNN-702; Coreq: ADN-160, ADN-730; Arts & Sciences Elective Code: B

ADN-577 Associate Degree Nursing I (3.5)
Emphasizes the utilization of the nursing process to promote adaptation in clients with physiological problems. Concepts studied include acid/base balance, fluid and electrolytes, shock, and biological defenses. Selected disease states present in the adult population assist in the application of these concepts. The areas of pathophysiology, nutrition and pharmacology are integrated relative to the client problems. Advanced skills are practiced in a supervised lab setting. Credits: 3.5, Hours: (3/1/0/0), Prereq: PNN-533, PNN-732, PSY-111, PSY-121, SPC-101; Coreq: ADN-105, ADN-723; Arts & Sciences Elective Code: B

ADN-653 Associate Degree Nursing II (3)
Emphasizes the utilization of the nursing process to promote adaptation in adults, families and communities. Selected cardiovascular and neurological disease states are studied. Advanced psychosocial concepts and illnesses are studied in the context of the family and the community. The areas of pathophysiology, nutrition and pharmacology are integrated relative to the client problems. Credits: 3, Hours: (3/0/0/0), Prereq: ADN-105, ADN-777, ADN-723; Coreq: ADN-724; Arts & Sciences Elective Code: B

ADN-654 Associate Degree Nursing III (4)
Emphasizes the utilization of the nursing process to promote adaptation in adult, pediatric and obstetrical clients with acute multi-system problems. Registered nurse roles related to community and management are studied. The areas of pathophysiology, nutrition and pharmacology are integrated relative to the client problems. Credits: 4, Hours: (3/2/0/0), Prereq: ADN-653, ADN-724; Coreq: ADN-725; Arts & Sciences Elective Code: B

ADN-723 Associate Degree Nursing Clinical I (3)
Focuses on the application of knowledge, psychomotor and affective skills to perform the role of provider of care. Emphasis is on making advanced assessments and performing nursing skills associated with acute inpatient settings. Concepts related to nutrition, pharmacology, pathophysiology and care planning are applied. Credits: 3, Hours: (0/0/9/0), Prereq: PNN-732; Coreq: ADN-105, ADN-577; Arts & Sciences Elective Code: B

ADN-724 Associate Degree Nursing Clinical II (3)
Focuses on the application of knowledge, psychomotor and affective skills to perform the role of provider of care. Emphasis is on developing, prioritizing and evaluating individualized care of clients with complex disease states in acute care and community settings. Concepts related to nutrition, pharmacology, pathophysiology and care planning are applied. Credits: 3, Hours: (0/0/9/0), Prereq: ADN-105, ADN-777, ADN-723; Coreq: ADN-653; Arts & Sciences Elective Code: B

ADN-725 Associate Degree Nursing Clinical III (4)
Focuses on the application of knowledge, psychomotor and affective skills to perform the role of provider of care. Emphasis is on developing, prioritizing and evaluating individualized care of clients with complex disease states in acute care and community settings. Concepts related to nutrition, pharmacology, pathophysiology and care planning are applied. Credits: 4, Hours: (0/0/12/0), Prereq: ADN-653, ADN-724, BIO-186; Coreq: ADN-654; Arts & Sciences Elective Code: B

ADN-730 Nursing Care of Specific Populations Clinic (2.25)
Builds on the concepts of previous nursing courses with an emphasis on the care of high risk obstetric, pediatric and mental health patients. Focuses on health promotion, ethical/legal considerations, family-centered care and common alterations seen in high risk obstetric, pediatric and mental health patients. Credits: 2.25, Hours: (0/0/6.75/0), Prereq: PNN-129, PNN-436, PNN-702; Coreq: ADN-160, ADN-500; Arts & Sciences Elective Code: B

ADN-740 Concepts of Nursing Clinic (3)
Provides clinical experiences in which students have an opportunity to 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. Incorporates application of the nursing process, advanced assessment skills, family-centered care and common alterations seen in high risk obstetric, pediatric and mental health patients. Credits: 3, Hours: (0/0/9/0), Prereq: ADN-105, ADN-730; Coreq: ADN-170; Arts & Sciences Elective Code: B

ADN-750 Advanced Concepts of Nursing Clinic (3.5)
Focuses on the advanced nursing care of patient, families and communities with complex multi-system health problems in the acute and community settings. Provides students an opportunity to 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. 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. Focuses on effective care, assessment and evaluation of patients, families and populations using evidence-based best practices, informatics, safety and clinical reasoning. Credits: 3.5, Hours: (0/0/10.5/0), Prereq: ADN-170, ADN-740; Coreq: ADN-180; Arts & Sciences Elective Code: B

AGA: AG-Agronomy

AGA-114 Principles of Agronomy (3) Presents instruction in crop plant classification, use and identification. Also covers cropping systems, tillage methods, planting and harvesting methods, and crop growth patterns. A balance of theoretical and practical crop science. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

AGA-154 Fundamentals of Soil Science (3) Studies physical and chemical properties of soil, soil formation and classification. Also studies the essential plant nutrients and their availability in soil. Balances theoretical and practical aspects of soil fertility and includes soil testing and fertilizer products. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

AGA-165 Agricultural Fertilizers and Chemicals (3) Reviews fertility concepts and relates them to fertilizers and fertilizer application methods. Includes soil sampling methods, analyzing a soil test report, choosing application methods and calculating fertilizer costs. Studies herbicides and insecticides used on Midwestern farms. Topics include chemical safety, selection and application methods. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGA-170 Fertilizer Management (3) Covers principles of nutrient management as they relate to soil, plants, fertilizer practices, management systems and the environment. Discusses manure management plans, handling laws and how they impact farming operations. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

AGA-209 Row Crop Production (3) Studies and compares different types of tillage methods, seed varieties, fertilizer programs, diseases and chemical application, as well as weed control and new harvest methods used in modern row crop production. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGA-217 Field Crop Harvesting and Drying (3) Introduces the basics, theory and operation of combines and choppers with actual in-the-field adjustment and operation of machines. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

AGA-283 Pesticide Application Certificate (2) Prepares students for the Iowa Commercial Applicators or Iowa Private Applicators examinations. Studies agricultural chemicals using the Iowa Core Manual, which emphasizes proper application techniques, safety and regulatory compliance. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

AGA-376 Integrated Pest Management (3) Develops observation and identifies symptoms of insect damage, weed and herbicide problems. Utilizes the concept of integrated pest management and economic threshold in recommending control methods. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGA-381 Crop Scouting (3) Focuses on identification of pest problems in crops and on developing an integrated pest management program. Students learn to utilize economic thresholds in recommending control methods. Students also learn to prevent potential fertility, pest and environmental problems with crop production practices. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGA-880 Forage Crop Management (3) Covers production and management of forage crops in pasture and field scenarios. Emphasizes optimizing yield, quality and stand persistence in grazing, hay and silage systems. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGA-948 Special Projects (1-3) Includes an agreed-upon development plan for an applied problem solution. Students and instructor meet regularly for discussion, observation and evaluation of the project development. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

AGB: AG-Farm Management

AGB-101 Agricultural Economics (3) Principles of production, supply and demand applied to economic problems of agriculture and agricultural-related industries, and to decisions in farm management, marketing, foreign trade and agricultural policy. Reviews the principles of diminishing returns, marginal costs, opportunity cost, substitution, and the concept of risk and uncertainty. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGB-133 Introduction to Ag Business (3) Focuses on entrepreneurship in ag business. Includes the study of marketing, budgeting, financial statements, purchasing, business structure, customer relations and inventory control. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGB-235 Introduction to Agriculture Markets (3) Studies the concepts, institutions, procedures, methods and problems in moving goods or services from the producer to the consumer. Cash marketing, forward contracting, futures marketing and options marketing are taught. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGB-321 Agricultural Procedures and Safety (2) Focuses on the development, implementation and assessment of appropriate actions in a variety of agricultural settings. Covers the theory and application of the modern agricultural safety movement in the United States. Emphasizes the reduction of unnecessary risks in agriculture. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

AGB-325 Agricultural Construction and Repair (3) Deals with knowledge and skill development in general repair and construction with regard to a general stable, farm or livestock production system. Deals with practical aspects of concrete, carpentry, plumbing and electricity. When possible, real laboratory situations are used to present this information. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

AGB-330 Farm Business Management (3) Applies farm accounting, economic principles and budgeting to the organization and management of a farm business. Includes risk and uncertainty, precautions and adjustments, size of business, capital acquisition and control, as well as crop, livestock, machinery and labor management considerations. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

AGB-331 Entrepreneurship in Agriculture (3) Covers the organization, research and planning necessary to be a successful entrepreneur in the agriculture and food sectors. Focuses on opportunity recognition and assessment, and business plan development, which includes research, organization, location, competition, production of the product or service, marketing, finance, staffing, monitoring and measuring for both private and social enterprises. Emphasizes financial needs and projection. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGB-336 Agricultural Selling (3) Covers the fundamentals and techniques of successful selling, developing sales personality and the selling cycle. Practical application through sales presentation of the principles of selling using videotape as a self-evaluation device. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGB-466 Agricultural Finance (3) Emphasizes general principles associated with the evaluation of management and the use of capital in agricultural business. Application of effective use of credit and credit instruments, and description and analysis of agricultural credit institutions and agencies will be taught. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

AGB-470 Farm Records, Accounts, Analysis (3) Provides knowledge of methods of keeping farm records and accounts for farm and tax management uses. Students complete a record keeping project and prepare a cash flow budget, income statement and balance sheet. Uses double-entry procedures along with a farm accounting computer program. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

AGC: AG-Comprehensive

AGC-103 Ag Computer (3) Studies the use of personal microcomputers for processing firm and financial records. Emphasizes word processing, database management,
spreadsheets, PowerPoint presentations and Internet use. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGC-115 Ag Career Orientation (1)
Provides students with an overview of their chosen career field. Students identify areas of interest within the industry and make an educational plan to attain their career goals. Includes activities to assist students in adjusting to college life and exploring Kirkwood opportunities. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

AGC-120 Applied Agricultural Concepts (2)
Provides students with the background and fundamental skills to be employed in the Ag Industry. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

AGC-130 Mathematics I - Agriculture (3)
Provides the student with math skills relating to agricultural economics, agribusiness, animal science, agronomy and agricultural mechanics. Applies the basic math functions and basic algebra to practical agricultural situations. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGC-160 Introduction to Technical Chemistry (4)
Provides a background in general chemistry that enables students to succeed in clinical chemistry. The hands-on laboratory exercises allow students to learn physical chemical properties and work more efficiently in an industry laboratory. Credits: 4, Hours: (3/2/0/0), Arts & Sciences Elective Code: B

AGC-210 Employment Seminar (1)
Assists the student in planning and knowing the rules in employment internship. Includes current topics on resume writing, interviewing techniques and other job-hunting skills. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

AGC-313 Leadership in Agriculture (1)
Develops skills in using parliamentary procedure, business meeting agendas, techniques of delegation, applied communication skills, organization structure and job-seeking skills. Includes determining cooperative activities, organization funding, committee functions and leading discussion groups. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

AGC-314 Leadership in Agriculture (2)
Develops skills in using parliamentary procedure, business meeting agendas, techniques of delegation, applied communication skills, organization structure and job-seeking skills. Includes determining cooperative activities, organization funding, committee functions and leading discussion groups. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

AGC-420 Issues in Agriculture (3)
Studies the policies and issues that affect American agriculture and rural society. Explores the methods of accessing those who form agricultural policy and economic/social systems. Focuses on agricultural/environmental laws, regulations and technologies driving current policymaking, and how they impact stakeholders in a rapidly changing agricultural economy. Prepares students to think critically within today's global economy and changing workforce. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGC-924 Honors Project (1)
 Allows a qualified honors student to pursue a special concentration of study under the guidance of an honors faculty member. Requires completion of an honors project learning contract. Requires approval of supervising professor and dean. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

AGC-932 Internship (2-6)
Provides on-the-job training in an approved business establishment. Valuable learning experiences are structured by the program coordinator and the training sponsor. Credits: 2-6, Hours: (0/0/0/8-24), Arts & Sciences Elective Code: B; Comments: Program coordinator approval

AGE: AG-Equine

AGE-104 Total Fitness for the Rider (1)
Students learn basic principles and techniques in strength training and conditioning to help performance and communication with the horse. Critical elements of equestrian fitness to be covered include basic fitness program design, nutrition, various lifting techniques or modalities, flexibility, and cardiovascular fitness. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: B

AGE-107 Trail Riding (1-2)
Introduces factors that affect a horse on the trail such as laws, ride preparation, equipment, trail etiquette, application of reins, seat and anticipation. Credits: 1-2, Hours: (0.5-1/1-2/0/0), Prereq: AGE-109 or AGE-110; Arts & Sciences Elective Code: B; Comments: Permission of instructor and dean.

AGE-108 Horsemanship I (3)
Introduction to the principles of horsemanship stressing horse care before and after riding, the initial seat position, elements of the seat, posting trot, coordination of the aids, turns and leads of the canter, as well as anatomical, physiological and psychological implications involved in riding. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

AGE-109 Horsemanship II (3)
Further development of the balanced seat, good hands and correct form at the natural gaits of the horse. Includes application of the principles of basic ground work. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

AGE-110 Introduction to Basic Riding (2)
Provides applied instruction in developing the western rider and horse. Balanced-seat approach stressed: covers horse handling, grooming, haltering, leading, saddling, bridling and fundamentals of walk, jog and beginning lope. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

AGE-111 Advanced Western Horsemanship (3)
Instruction in developing western rider and horse. Balanced seat approach is stressed with rider’s role in controlling action and movement in stock horse application. Credits: 3, Hours: (1/4/0/0), Prereq: AGE-110; Arts & Sciences Elective Code: B

AGE-112 Advanced Horsemanship Techniques (2)
Provides basic fundamental points of riding by the execution of a horse of complex maneuvers in response to barely perceptible movements of a rider’s hands, legs and weight. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B; Comments: Previous riding class or permission of instructor.

AGE-121 Horse Evaluation (3)
Provides information on horse conformation. Students can apply knowledge and develop their potential in judging horses by comparatively analyzing a class of horses. Students will cover anatomy and skeletal structure. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGE-130 Horse Nutrition (3)
 Discusses essential nutrients and their role in an animal’s metabolism. Covers unique digestive physiology and anatomy, nutrient excess and deficiency symptoms, and includes lab exercises. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGE-161 Instructing Horsemanship (3)
 Students learn an understanding of running a riding lesson program, what considerations need to be taken, horse selection and riding ability levels. Credits: 3, Hours: (2/2/0/0), Prereq: AGE-108 or AGE-110; Arts & Sciences Elective Code: B

AGE-168 Horse Breeds Selection (2)
Recognizes the major and minor horse breeds and their uses. Students identify the different breeds as to their breed characteristics, origin, capabilities, type, conformation and history of the breed from the beginning to the present. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

AGE-169 Equine Fitting and Grooming (3)
 Applies actual feeding and care of the college’s horses under a practical management situation. Certain competency tests must be performed related to an efficient stable master schedule and the implementation of a schedule and the tasks related to such. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGE-170 Health and Performance Management of the Horse (3)
Discusses and identifies the conformation of the horse, the respiratory, digestive, nervous and circulatory systems, plus skeletal and muscle structure. Relates causes and prevention of economically important horse diseases. Current state and federal regulations are also described. This course is generally taught by a veterinarian. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGE-172 Equine Ground Work (2)
Applies actual care and feeding of the college’s horses under a practical management situation. Competency tests in both working with horses on the ground and presentation of halter classes are performed. Credits: 2, Hours: (5/3/0/0), Arts & Sciences Elective Code: B
Course Descriptions

AGE-185 Equine Facilities Maintenance and Mechanics (3)
Establishes basic understanding and manipula
tive skills related to facility maintenance. Deals
with the fundamentals of farm carpentry, fences,
concrete, buildings, stalls, plumbing, electricity
and general upkeep. Competency base is
stressed. Credits: 3, Hours: (2/2/0/0), Arts &
Sciences Elective Code: B

AGE-202 Equine Genetics and Breeding
Management (3)
Covers the physiology and anatomy of the mare
and stallion. Includes breeding management of
both mare and stallion. Reviews common fertili-
ty problems in both. Discusses and identifies
causes of absorption and abortion in the mare.
Identifies common techniques used in equine
reproduction, including artificial insemination.
Credits: 3, Hours: (3/0/0/0), Arts & Sciences
Elective Code: B

AGE-206 Advanced Breeding Management (2)
Introduces advanced reproductive techniques
using state-of-the-art equipment. Discusses di-
agnostic testing. Students get experience ex-
tending, cooling, freezing semen and evaluating
semen. Students learn to understand and read
uterine biopsy results, including how to prepare
specimens for uterine cytology and microbiology.
Credits: 2, Hours: (1/2/0/0), Prereq: AGE-205;
Arts & Sciences Elective Code: B

AGE-209 Equine Anatomy & Physiology (2)
Beginning anatomy and physiology with veterinary
 equine clinical emphasis. Provides the basis for
a study of conformation, production and patholog-
ical process of diseases in horses. Credits: 2,
Hours: (0/2/0/0), Arts & Sciences Elective Code:
B

AGE-211 Equine Business Management I (3)
Applies accounting, economic principles and
budgeting to the organization and management
of an equine business. Includes risk and uncer-
tainty, precautions and adjustments, business
size, capital acquisition and control, as well as
herd, pasture, machinery and labor management
considerations. Credits: 3, Hours: (3/0/0/0), Arts
& Sciences Elective Code: B

AGE-212 Equine Business Management II (3)
Applies the necessary steps in becoming a horse
business owner from investing, licenses and tax
benefits. Other areas covered include marketing,
insurance, buying and selling, employees and
independent contractors, pedigree or perfor-
mance records, and IRS information. Credits: 3,
Hours: (3/0/0/0), Arts & Sciences Elective Code:
B

AGE-213 Management of the Racing
Thoroughbred (2)
Identifies the techniques of managing the thor-
oughbred racehorse. Describes the basic care of
the thoroughbred including feeding, veterinary,
farrier and conditioning practices. Identifies spe-
cial techniques, which include taking tempera-
ture, pulse, respiration, X-rays, blood counts and
pre-race preparation. Interpretation and analysis
of thoroughbred pedigrees and racetrack opera-
tions are taught. Some course time may be spent
at a racetrack. Credits: 2, Hours: (1/2/0/0), Arts
& Sciences Elective Code: B

AGE-230 Training I (3)
Introduces initial horse training principles and
techniques. Emphasizes natural horsemanship
theory and practice. Credits: 3, Hours: (1/4/0/0),
Prereq: AGE-109, AGE-172; Arts & Sciences Elec-
tive Code: B; Comments: Grades in prerequisite
courses must be B or higher

AGE-231 Training II (3)
Builds on the principles, theories and practical
experiences learned in Training I. Covers early
training, handling, lunging, and horsemanship,
with an emphasis on equine psychology. Presents
proper methodology for various bits and equip-
ment. Credits: 3, Hours: (1/4/0/0), Prereq:
AGE-230; Arts & Sciences Elective Code: B

AGE-232 Training III (2)
Provides instruction in management of special-
ized training of various types of horses. Emphasis
is on the theory and practice of training princi-
ples, horsemanship skills and methods, and how
they are executed. Credits: 2, Hours: (1/2/0/0),
Prereq: AGE-230, AGE-231; Arts & Sciences Elec-
tive Code: B

AGE-240 Fundamentals of Training (3)
Deals in basic training fundamentals on an
individual basis. This is an open lab course. Credits:
3, Hours: (2/2/0/0), Arts & Sciences Elective Code:
B

AGE-241 Colt Starting (3)
Designed to teach students the fundamental
principles of training the young horse through
practical application. Credits: 3, Hours:
(1/4/0/0), Prereq: AGE-230 or AGE-231 or
AGE-232; Arts & Sciences Elective Code: B

AGE-246 Long Lining and Driving Techniques
(3)
Improves the basic techniques of long reining and
driving. Includes tack familiarization, rein use,
long-lining, preliminaries to harnessing and driv-
ing. Credits: 3, Hours: (2/2/0/0), Arts & Sciences
Elective Code: B

AGE-253 Horse Shows (2)
Identifies and applies necessary requirements to
prepare and show a horse, and includes instruc-
tion and participation in setting up and conduct-
ing a horse show. Provides the opportunity to
show in available horse shows. Credits: 2, Hours:
(1.5/3/0/0), Arts & Sciences Elective Code: B

AGE-260 Introduction to Farrier Science (1)
Presents basic hoof preparation and trimming
concepts. Students study current hoof status
(before and after), foot and leg problems, and
methods of correction. Stresses applied lab tech-
nique, with forge work available. Credits: 1,
Hours: (0/1.5/0/0), Arts & Sciences Elective Code:
B

AGE-261 Legs and Hoof (3)
Provides instruction on the care and condition of
horses’ legs and feet, and covers basic concepts
of correct preparation and shoeing of a horse,
foot unsoundness, leg problems, and methods of
correction by proper trimming and shoeing. In-
cludes the examination of stance, gait, un-
soundness, breed requirements, methods of
restraint, and types of corrective shoes and how
they function. Credits: 3, Hours: (3/0/0/0), Arts &
Sciences Elective Code: B

AGE-270 Equestrian Drill Team (2)
Riders and horses are developed into a working
unit of two or more drill teams. Western balance
heat is stressed with work on maneuvers, routine
and patterns. Horsemanship is taught to improve
communication between horse and rider. Histor-
ical study of where and how the maneuvers were
used in cavalry units of Iowa is included. Credits:
2, Hours: (1/2/0/0), Arts & Sciences Elective Code:
B

AGE-290 Horse Projects (1-3)
A preplanned schedule for discussion, observa-
tion and evaluation of the horse project is devel-
oped. Covers athletic performance of the horse,
training and environmental effects, and use of
records. Management of facilities and other
horse projects are stressed. Includes an
agreed-to development plan for an applied prob-
lem solution. Credits: 1, Hours: (1/0/0/0), Pre-
req: AGE-230; Arts & Sciences Elective Code: B

AGE-295 Western Style Training Project (3)
Introduces Western pleasure training fundamen-
tals, techniques, equipment (bits, reins and
training aids) and horse conformation. Empha-
sizes correct movement of horse and rider, as
well as learning the meaning of “forward motion.”
Riders develop individual goals for themselves
and their horses. Credits: 3, Hours: (2/2/0/0),
Arts & Sciences Elective Code: B

AGF: AG-Floral

AGF-120 Floral Plant Identification and Care I
(2)
Studies identification, care and handling re-
quirements of cut flowers and foliage and green
and blooming plants commonly sold in retail
flower shops. Credits: 2, Hours: (1/2/0/0), Arts &
Sciences Elective Code: B

AGF-122 Floral Plant Identification and Care II
(2)
Studies the common and botanical names and
growth requirements of green, blooming and
bedding plants commonly sold in retail flower
shops. Credits: 2, Hours: (2/0/0/0), Arts & Sci-
ences Elective Code: B

AGF-130 Floral Careers Computer Literacy (2)
Introduces students to applications for comput-
ers in the floral industry and computer use for
assignments in the Floral Careers program. Top-
ics include operating systems, MS Word, hard-
ware and software, terminology, functions, appli-
cations, Windows, spreadsheets and Internet.
Designed for the student with little or no comput-
er experience. Self-paced. Credits: 2, Hours:
(1/2/0/0), Arts & Sciences Elective Code: B

AGF-135 Floral Careers Plant Propagation (2)
Studies environmental factors needed to produce
optimum growth requirements of green and bed-
ding plants in lecture and laboratory settings.
Introduces techniques used in reproducing plants
through sexual and asexual methods. Credits: 2,
Hours: (1/2/0/0), Arts & Sciences Elective Code: B

AGF-140 Floral Design I (3)
Introduces basic geometric design of fresh ar-
rangements, corsages, Christmas arrangements,
funeral flowers, potted plants and green planters.
Includes use of tools and supplies. Credits: 3, Hours: (1/4/0/0), Coreq: AGF-160; Arts & Sciences Elective Code: B

AGF-142 Floral Design II (3)
Studies advanced floral design of fresh flowers, funeral, memorial and wedding arrangements. Credits: 3, Hours: (1/4/0/0), Prereq: AGF-140; Coreq: AGF-162; Arts & Sciences Elective Code: B

AGF-144 Floral Design III (3)
Involves advanced all-occasion and wedding designing, including table setting and copy work. Credits: 3, Hours: (1/4/0/0), Prereq: AGF-142; Coreq: AGF-164; Arts & Sciences Elective Code: B

AGF-146 Floral Design III B (1)
Promotes student's individual style through introduction of current design trends and floral industry influences. Credits: 1, Hours: (0/2/0/0), Prereq: AGF-144; Arts & Sciences Elective Code: B

AGF-150 Retail Flower Shop Operation I (3)
Introduces the florist business, floral product sales, general selling and efficient shop layout. Studies the processing of floral orders, terminology and telephone procedures. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGF-152 Retail Flower Shop Operation II (4)
Studies the aspects of the floral business involving funeral and wedding arrangements. Sales and etiquette of these floral products is included. Credits: 4, Hours: (4/0/0/0), Prereq: AGF-150; Arts & Sciences Elective Code: B

AGF-154 Retail Flower Shop Operation III (2)
Analyzes the floral business as a center of employment, personnel policies, shop management and operations. Credits: 2, Hours: (2/0/0/0), Prereq: AGF-150, AGF-152; Arts & Sciences Elective Code: B

AGF-160 Event Planning I (1)
Introduces the career of an event planner. Includes characteristics of an event planner, organizing the business, marketing and networking. Students plan, produce and successfully execute special events. Credits: 1, Hours: (.5/1/0/0), Coreq: AGF-140; Arts & Sciences Elective Code: B

AGF-162 Event Planning II (1)
Emphasizes instruction and practical experience in many areas of event planning, with major emphasis on wedding planning and corporate events. Students plan, produce and successfully execute special events. Credits: 1, Hours: (.5/1/0/0), Prereq: AGF-160; Coreq: AGF-142; Arts & Sciences Elective Code: B

AGF-164 Event Planning III (3)
Emphasizes instruction and practical experience in event planning, including event planning management, contract negotiation, visual presentation, and marketing and advertising special events. Students plan, produce and successfully execute special events. Credits: 3, Hours: (2/2/0/0), Prereq: AGF-162; Coreq: AGF-144; Arts & Sciences Elective Code: B

AGF-300 Design Show Seminar (2)
Introduces students to current technical information used for problem solving in the floral industry. Special emphasis is devoted to planning and conducting the annual floral design show. Credits: 2, Hours: (2/0/0/0), Coreq: AGF-144; Arts & Sciences Elective Code: B

AGH: AG-Horticulture

AGH-102 Horticulture Math (3)
Reviews basic math calculations including math operations, fractions, decimals, introductory algebra and geometry. Relates math problems to horticulture applications. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGH-110 Success in Horticulture (1)
Acquaints students with critical issues relevant to horticulture, and provides information, skills and opportunities to be successful in the program, as well as their chosen career. Encourages students to stay engaged in their educational experience, both in and outside the classroom. This class is a source for both personal and academic growth, where students can develop lasting relationships and acquire skills to help them in making difficult choices. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

AGH-112 Introduction to Turfgrass Management (3)
Examines the culture of turf with an emphasis placed on establishments, turf varieties, and pest identification and control. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGH-120 Herbaceous Plant Materials (3)
Studies the identification and cultural requirements of approximately 40 annual and 40 herbaceous perennial plants. Includes bed establishment and care. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGH-123 Woody Plant Materials (3)
Develops skills in the identification, landscape use and cultural requirements of 80 varieties of deciduous trees and shrubs native to Iowa, as well as conifers used in windbreak and wildlife plantings. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGH-127 Ornamental Plant Materials (3)
Studies the identification, landscape use and cultural requirements of 80 ornamental trees, shrubs and vines. Credits: 3, Hours: (2/2/0/0), Prereq: AGH-123; Arts & Sciences Elective Code: B; Comments: Second-year student

AGH-131 Greenhouse Management (3)
Studies growing techniques used in commercial greenhouse plant production. Involves the design of greenhouses, their environmental control systems and cultural practices. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B; Comments: Second-year student

AGH-144 Landscape Construction (3)
Involves the construction of landscape paving, concrete, retaining walls, basic wood construction, basic electrical and plumbing. Also covered are calculations necessary to order materials and bid procedures. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGH-150 Equipment Operations Lab (1)
This is the lab component associated with Equipment Operations (AGH-157). Credits: 1, Hours: (0/2/0/0), Coreq: AGH-157; Arts & Sciences Elective Code: B

AGH-152 Landscape Design Techniques (3)
Provides information and practice in basic graphic communication and introductory landscape design. Topics covered include use of scales, basic drafting, landscape symbols, design process, master planning, design with plant material and cost estimating. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGH-156 Landscape Design II (3)
Expands graphic communication and landscape design skills. Topics include freehand plan graphics, quick sketching, perspective and color drawing, landscape master planning, advanced plant design, amenity design, commercial layout. Credits: 3, Hours: (2/2/0/0), Prereq: AGH-152; Arts & Sciences Elective Code: B; Comments: Second-year student

AGH-157 Equipment Operations (2)
Introduces basic equipment maintenance, operation and troubleshooting. Provides a working knowledge of equipment used in the horticulture industry. Credits: 2, Hours: (2/2/0/0), Coreq: AGH-150; Arts & Sciences Elective Code: B

AGH-158 Computer Applications for the Landscape Industry (2)
Introduces students to software used in the landscape, nursery, garden center fields. Students will learn new applications of Microsoft Office programs with an emphasis on marketing, inventory control, and customer relations. Some design software is also used including both two-dimensional (plan view) designing and photo imagery. Credits: 2, Hours: (1/2/0/0), Prereq: AGH-152; Arts & Sciences Elective Code: B; Comments: Demonstrated computer competence

AGH-163 Irrigation Design (2)
Covers water basics, pressure considerations, design and layout of irrigation systems for home and commercial use. Credits: 2, Hours: (1/2/0/0), Prereq: AGH-165; Arts & Sciences Elective Code: B; Comments: Second-year student

AGH-165 Irrigation Installation and Repair (2)
Develops skills in the areas of irrigation system installation and repair. Topics covered include trenching and installation of irrigation pipe, heads, valves, and controls; system troubleshooting; and minor system repair. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B; Comments: Second-year student

AGH-166 Turfgrass and Landscape Irrigation (3)
Introduces irrigation systems and their principles, which are critical to turf and landscape environments. Includes design, installation, equipment, management, and trouble shooting of irrigation systems for golf, athletic fields, residential lawns and landscapes. Requires participation in practical exercises, lab projects and local field trips to irrigation sites. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGH-200 Landscape Estimating and Bidding (2)
Focuses on the fundamentals of creating a landscape project estimate. Includes material take-offs, plant pricing, labor rates, measuring, reading landscape plans and math calculations. Credits: 2, Hours: (2/2/0/0), Prereq: AGH-102; Arts & Sciences Elective Code: B

Course Descriptions
### Course Descriptions

**AGH-211 Advanced Turfgrass Management (3)**
- Presents management techniques used in high-maintenance turf areas. Students receive advanced instruction in fertilization, pesticides, etc. Credits: 3, Hours: (3/0/0/0), Prereq: AGH-112; Arts & Sciences Elective Code: B; Comments: Second-year student

**AGH-220 Plant Identification Suite I (3)**
- Studies the identification and use of a set of annual, herbaceous perennial and woody ornamental shrubs and trees currently used in Midwestern landscape horticulture. Includes plant identification using botanical nomenclature, specific cultural requirements and how each is used in landscape design. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

**AGH-221 Principles of Horticulture (3)**
- Introduces students to the field of horticulture. Students learn how to apply scientific principles to commercial horticultural practices and the improvement of those practices. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

**AGH-233 Plant Propagation I (3)**
- Introduces students to techniques used in re-producing plants through sexual and asexual methods. Seedlings, vegetative cuttings, grafts and budding are practiced in the laboratory. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

**AGH-236 Plant Material Maintenance (3)**
- Studies pruning, fertilizing, staking and other maintenance practices utilized in tree and shrub care. Emphasis is placed on proper planting and transplanting procedures. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

**AGH-238 Soil and Water Conservation (3)**
- Studies the different components of soil, soil erosion and soil conservation. Introduces the student to surveying techniques and use of soil survey reports. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

**AGH-240 Plant Identification Suite II (3)**
- Studies the identification and use of a set of annual, herbaceous perennial, and woody ornamental shrubs and trees currently used in Midwestern landscape horticulture. Includes the identification of plants using botanical nomenclature, the specific cultural requirements of each plant and how the plant can be used in landscape design. Second of a two-course sequence. Credits: 3, Hours: (2/2/0/0), Prereq: AGH-220; Arts & Sciences Elective Code: B

**AGH-253 Insects and Diseases (3)**
- Identifies common insects and diseases of horticulture crops and plant material. Control measures are discussed including chemical controls and integrated pest management. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

**AGH-262 Fruit and Vegetable Science (3)**
- Introduces the student to the production of Midwestern fruit and vegetables with an emphasis on cultural practices, variety selections and storage.

**AGH-275 Commercial Plant Production (3)**
- Covers production of greenhouse plants, nursery plants and nursery operations. Involves design, management, and harvesting for field and container growing operations. Also surveys related growing operations. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B; Comments: Second-year student

**AGH-279 Botany for Horticulture (2)**
- Examines basic plant material anatomy, physiology and taxonomy. Emphasis is placed on plant material used in landscape and turf fields. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

**AGH-282 Pesticide Application Certification-Horticulture (1)**
- Reviews materials and testing procedures used to certify pesticide applicators. Concentration is provided on core testing. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

**AGH-293 Landscape Business Operations (2)**
- Introduces marketing, merchandising, advertising and business analysis as it relates to landscape business. Specialty management techniques and systematic business approaches are explored. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

**AGH-300 Hardscape Installation Techniques (3)**
- Elevates students beyond basic hardscape installation. Studies contemporary design and installation trends. Provides hands-on experience with the latest construction materials. Includes opportunities for professional certifications in product installation. Credits: 3, Hours: (2/2/0/0), Prereq: AGH-144, CON-134; Arts & Sciences Elective Code: B

**AGH-301 Sustainable Site Management (2)**
- Covers the latest topics in environmentally-sound landscape practices. Introduces green building, on-site water management strategies and habitat preservation. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

**AGH-302 Advanced Landscape Design (3)**
- Builds on the fundamentals of landscape design. Includes large scale commercial and recreational projects, as well as detailed hardscape designs. Studies the industry's latest design trends. Includes opportunities for professional certification. Credits: 3, Hours: (2/2/0/0), Prereq: AGH-152, AGH-156; Arts & Sciences Elective Code: B

**AGH-400 Athletic Field Maintenance (3)**
- Involves the design, preparation, and maintenance of athletic fields for various sports. Includes the study of various playing surfaces, drainage systems and specialized equipment used on athletic fields. Course includes field trips to local athletic complexes. Credits: 3, Hours: (2/2/0/0), Prereq: AGH-112; Arts & Sciences Elective Code: B

**AGH-405 Golf Course Maintenance (3)**
- Involves the theory of design, installation and maintenance of specialized turf and other areas commonly found on golf courses. Student is provided with experience maintaining an on-campus golf green, fairway and tee. Course includes field trips to local golf courses. Credits: 3, Hours: (2/2/0/0), Prereq: AGH-112; Arts & Sciences Elective Code: B; Comments: Second-year student

**AGH-411 Grounds Computer Applications (3)**
- Covers uses of computers in the grounds and golf course fields. Emphasis is on introductory irrigation design/management, business management and grounds course management software. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B; Comments: Second-year student

**AGH-425 Grounds Maintenance (3)**
- Introduces maintenance practices used in sports complexes, parks and recreation areas, and commercial and industrial grounds. Pesticide certification requirements are also covered. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B; Comments: Second-year student

**AGH-460 Design Capstone (2)**
- Provides second-year design students with a complete design project. Requires students to utilize skills acquired throughout the program, including examining soils and fertility, construction techniques and plant material characteristics. Credits: 2, Hours: (1/2/0/0), Prereq: AGH-152, AGH-156, AGH-302; Arts & Sciences Elective Code: B

**AGH-948 Special Projects (1-3)**
- Involves individualized study programs or projects supervised by instructional staff. Students resolve special interests/needs through research, experimentation or other related methods. Credits: 1-3, Hours: (1-3/0/0/0), Arts & Sciences Elective Code: B

### AGM: AG-Mechanics

**AGM-103 Agricultural Electrical (3)**
- Builds on electrical skills learned in Fundamentals of Electricity with emphasis on electrical circuits and subassemblies found in most tractors, skid loaders and combines. Concentrates on the circuits in interior and exterior lights, dash, wiper motors, temperature controls, electric hydraulic controls, electric transmission controls, and on-board computers. Credits: 3, Hours: (2/2/0/0), Prereq: DSL-143; Arts & Sciences Elective Code: B

**AGM-113 Hydraulics I (3)**
- Introduces the basic laws and theories of fluid power. Includes operation and testing of pumps, valves, cylinders and motors commonly found in vehicles and equipment. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

**AGM-124 Technical Procedures for Power Mechanics Technicians (3)**
- Identifies the general knowledge and procedures used by power technicians. Covers tool selection, general shop safety, fire safety and forklift operation. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

**AGM-403 Combine Operation & Adjustment (2)**
- Introduces combine operation and safety. Includes hands-on, in-the-field machine operation
AGM-404 Combine Servicing (4)
Emphasizes repairing and reconditioning combines and chopper units. Includes basic hydraulic, electric, power train, monitor, and chassis adjustments. Credits: 4; Hours: (0/8/0/0); Coreq: AGM-403; Arts & Sciences Elective Code: B

AGM-405 Ag Engines (3)
Introduces diesel engines commonly used in the ag industry. The design of engine components and subassemblies is examined with an emphasis on why certain design features are used. Correct procedures for testing and servicing ag engines are explained and demonstrated. Credits: 3; Hours: (2/2/0/0), Prereq: DSL-355; Arts & Sciences Elective Code: B

AGM-406 Fundamentals of Power Transfer (3)
Introduces an introduction to basic drive trains including clutches, manual transmissions, propeller shafts, rear axle assemblies and planetary gears. Emphasizes operation, diagnosis, repair and maintenance procedures. Credits: 3; Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGM-409 Agricultural Diagnosis (13)
Approaches diesel and gas-powered engine diagnosis and overhaul from a hands-on perspective. Students repair real farm equipment with minimal instructor supervision. Emphasizes extensive engine testing, troubleshooting, repairing, inspecting and assembling. Credits: 13, Hours: (3/20/0/0), Prereq: AGM-103, AGM-124, AGM-405 AGM-406, AGM-422, AGM-440, DSL-143, DSL-355; Coreq: AGM-414; Arts & Sciences Elective Code: B

AGM-414 Fundamentals of Air Conditioning (2)
Provides a comprehensive introduction to air conditioning in diesel powered vehicles. Students gain a basic understanding of theory, diagnostic practices and procedures essential to air conditioning servicing. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

AGM-419 Machinery Servicing (3)
 Allows students to recondition used farm equipment such as planters, sprayers, disks and other tillage equipment. Does not include the engine-powered part of the machine. Includes testing and diagnosis of electronic monitoring systems. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGM-422 Diesel Fuel Systems (4)
Covers diesel fuel systems in relation to the engine itself. Diagnosis and testing or troubleshooting take place using special testing tools. Particular fundamentals are covered in compression testing, pump timing, engine component testing, and injector removal testing and repair. Credits: 4, Hours: (2/4/0/0), Prereq: DSL-355; Arts & Sciences Elective Code: B

AGM-440 Power Shift Transmissions (3)
Covers operation, theory, diagnosis and overhaul of fluid-driven equipment. Includes power shift, hydrostatic- and hydraulic-assist transmissions. Also includes torque converters. Credits: 3, Hours: (1.5/3/0/0), Prereq: AGM-406; Arts & Sciences Elective Code: B

AGM-932 Internship (1-5)
Involves employment allowing the student practical, on-the-job training with a business related to the student’s instructional program. Student is required to prepare a training plan and other reports. Credits: 1-5, Hours: (0/0/0/4), Arts & Sciences Elective Code: B

AGN: AG-Natural Resources/Forestry

AGN-105 Applications of Natural Resources (3)
Explores software, hardware and applications used in the natural resource field. Emphasizes desktop publishing, GPS/GIS and interpretive applications. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGN-132 Plant Management for Parks (3)
Emphasizes the establishment and maintenance of plant materials typically encountered in state, county and city park systems. Covers establishment procedures and proper maintenance practices for basic turf species, trees, shrubs and groundcovers utilized in park systems. Focuses on maintenance practices including mowing, pruning, fertilization, pest control and proper plant placement. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGN-140 Native Plants (3)
Identifies plant materials existing in natural woodlands, roadways and prairies. Special emphasis is placed on prairie forbs. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGN-220 Avian Wildlife (3)
Includes training in identification and management of nesting and game birds of the upper Midwest. Environmental requirements and relationships are included. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B; Comments: Second-year student

AGN-295 Rainwater Harvesting Systems (3)
Examines how park and recreation agencies integrate these resources into their overall programs. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B; Comments: Second-year student

AGN-250 Park Maintenance Programs (3)
Includes development and analysis of maintenance programs for buildings, campgrounds, lake areas and related recreational facilities. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B; Comments: Second-year student

AGN-260 Wildland Firefighter Training (3)
Covers the four training segments required for wildland firefighter certification: S-130 reviews basic wildland firefighting skills; S-190 studies fire behavior and the environmental factors that affect fire behavior; L-180 addresses human factors on the fireline, and I-100 studies the wildland firefighting management system. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGN-270 Watershed Assessment and Management (3)
Focuses on the basic concepts of watershed processes, including how water, sediment and nutrients are transported downstream in the drainage network. Describes the primary components of streams and how stream hydrology and water quality can be altered by human activities. Discusses strategies for watershed assessment and implementing best management practices. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGN-300 Rain Gardens and Bioretention Cells (3)
Addresses the use of rain gardens and bioretention cells for stormwater quality management and landscape beautification. Covers function, design, landscape positioning, installation, and maintenance of rain gardens and bioretention cells. Focuses on integrating rain gardens and bioretention cells into site planning and design, as well as installing and maintaining them on Iowa landscapes. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGN-310 Rainwater Harvesting Systems (3)
Demonstrates use of rainwater collection systems for irrigation, and household, commercial and industrial use. Covers the history, current trends, geographic potential, benefits, design, installation and maintenance of both simple and complex rainwater capture systems. Examines how to integrate rainwater harvesting systems into site planning and design, as well as how to install, maintain and maximize the potential benefits of the sustainable practice. Credits: 3,
AGP: AG-Precision AG

AGP-329 Introduction to GPS (3)
Studies fundamental processes of Global Positioning Systems with an emphasis on agriculture applications. General technical aspects of GPS satellites, differential correction and hardware will be covered. Agricultural mapping, navigation, VRT and yield monitoring will be discussed. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGP-333 Precision Farming Systems (3)
Provides a background in the tools of precision farming, GPS, GIS and VRT. Introductory use of each of these tools in a precision farming system and how they are applied on the farm are covered. Hands-on activities with local data will provide a practical experience in the use of these tools. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGP-405 Ag Applications of GIS (3)
Provides an overview of the various applications of geographic information systems (GIS). Covers basic interface, views, themes, tables and layouts using ARCVIEW software. Previews basic functions such as query and editing layers, provides practical experience with hands-on computer exercises in several disciplines, including agriculture, city/government planning or transportation. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGP-420 Geospatial Data Collection (3)
Provides detailed instruction and hands-on use of GPS receivers and dataloggers to collect field data. The process for creating spatial data structure, maintenance of equipment and use of datalogging software is the main focus. Data management and evaluation are also covered. Credits: 3, Hours: (2/0/0/0), Prereq: AGP-333; Arts & Sciences Elective Code: B

AGP-425 Agricultural Spatial Analysis (3)
Provides a background in the analysis of spatial data. Specific topics include transformation and retrieval of data, analytical techniques and spatial modeling. Concepts of multivariate and multiple-channel analysis are also discussed. Credits: 3, Hours: (2/2/0/0), Prereq: AGP-405; Arts & Sciences Elective Code: B

AGP-434 Practical Precision Farming for the Producer (3)
Provides an overview of GPS and GIS technology, their uses on modern U.S. crop farms, and how they impact management decisions and activities. Credits: 3, Hours: (2/2/0/0), Prereq: AGP-433; Arts & Sciences Elective Code: B

AGP-435 Advanced Precision Farming Systems-Software (3)
Introduces various precision farming software in real-world applications. Focuses on initial setup, creating management and production lists, saving and unloading data cards, processing field data, and compiling reports and prescription/application maps. Credits: 3, Hours: (2/2/0/0), Prereq: AGP-333; Arts & Sciences Elective Code: B

AGP-436 Advanced Precision Farming Systems-Hardware (3)
Focuses on precision farming hardware components. Students install displays, GPS units and control components, and are required to read and understand technical manuals. Credits: 3, Hours: (1/4/0/0), Prereq: AGP-333; Arts & Sciences Elective Code: B

AGP-440 Ag Applications of Digital Imagery (3)
Provides background in the use of remotely sensed digital imagery for agricultural decision making. Specific topics include types of images, methods of collecting imagery, verification, interpretation and analysis of data. Use of data for decision making is also discussed. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGS: AG-Animal Science

AGS-113 Survey of the Animal Industry (3)
Breeds, basic management and marketing of farm animals. Composition, evaluation and marketing of animal products. Includes live animal demonstrations with cattle for meat and milk, horses, poultry, sheep and swine. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

AGS-214 Domestic Animal Physiology (3)
Studies the comparative anatomy and physiology of the major body systems of cattle, sheep, swine and horses. Includes laboratory exercises involving physiology and anatomy of animals in healthy and diseased states. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

AGS-220 Domestic Animal Physiology Lab (1)
Uses laboratory exercises to compare the anatomy and physiology of animals in healthy and diseased states. Credits: 1, Hours: (2/2/0/0), CoReq: AGS-214; Arts & Sciences Elective Code: A

AGS-279 Livestock Merchandising (2)
Covers the fundamentals of preparing for successful livestock sales, including advertising, photography, livestock preparation, sale guidelines and customer support. Students participate in one to three livestock sales. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

AGS-305 Livestock Evaluation (3)
Examines the selection of breeding and meat animals based upon performance and visual appraisal. Students will use Kirkwood farm livestock and may include off-campus assignments. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGS-307 Professional Horse Judging (1)
Examines the selection of breeding and show horses based on conformation and performance. Field trips and off-campus evaluation provide judging experiences for students. Oral reasons and judge certification process are covered. Students compete at intercollegiate contests. Credits: 1, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

AGS-319 Animal Nutrition (3)
This course covers nutritional principles, digestive systems, composition and nutritional characteristics of common feedstuffs, ration formulation, and recommended feeding programs for farm animals. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

AGS-338 Livestock Behavior and Welfare (5)
Studies applications of basic animal behavior principles to ensure optimum performance and well-being. The course examines the effects of environment, stress, disease and nutrition on animal physiology and performance. Credits: 5, Hours: (2/6/0/0), Prereq: AGS-113, AGS-214; Arts & Sciences Elective Code: A

AGS-350 Artificial Insemination of Cattle (1)
Develops skills of artificial insemination, heat detection and supportive background knowledge of beef and dairy herds, and discusses recommended nutrition, management and genetics. Credits: 1, Hours: (0.5/1/0/0), Arts & Sciences Elective Code: B

AGS-425 Swine Systems Management (3)
Identifies records needed in swine production and record keeping techniques. Students prepare budgets and cash flows as they relate to swine production. Also, various marketing opportunities and practices are examined and analyzed. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

AGS-441 Livestock Housing and Equipment (3)
Studies the design and management of livestock facilities to limit stress and optimize performance. Students learn methods to minimize the environmental impact of livestock operations. Credits: 3, Hours: (2/2/0/0), Prereq: AGS-214, AGC-130; Arts & Sciences Elective Code: A

AGS-530 Swine Reproduction and Management (5)
Recognizes swine reproductive characteristics and reproductive functions of swine breeding stock, and identifies type and confirmation necessary for economic production. Also deals with breeds, breeding programs, breeding systems, including A.I., and appropriate management techniques. Credits: 5, Hours: (2/6/0/0), Arts & Sciences Elective Code: A

AGS-550 Beef Breeding/Reproduction/Nutrition (5)
Studies the anatomy and physiology of the female and male reproductive systems. Develops an understanding of proper use of heat synchronization, A.I., super ovulation, embryo transplants and new developments in biotechnology. Also deals with health, heritability and nutritional problems. Credits: 5, Hours: (3/4/0/0), Arts & Sciences Elective Code: B

AGS-551 Beef Science Management (3)
Works with evaluation management by identifying, measuring and selecting commercially important traits of beef cattle. Provides the basic information needed to understand terminology and predict performance through the use of sire summaries. Allows students to improve average performance of offspring by matching genetic potential to feed resources through optimal trait selection. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGS-555 Beef/Cow Calf Production (3)
Includes participation in calving of the Kirkwood Community College herd. Deals with proper nutri-
tion, health, solving O.B. problems and preparation of cow’s return to estrus. Also includes records, identification and pasture management.

Credits: 3, Hours: (1.5/3.0/0), Arts & Sciences Elective Code: B

AGV-560 Beef Industry and Feedlot Management (5)

Presents an overview and introduction to the entire beef industry. Relates and applies methods of starting cattle on feed and fall management of weaned calves. Deals with feedlot budgeting, determination of 205-day weights, ratios and fall management of the beef cow herd. Credits: 5, Hours: (3/4/0/0), Arts & Sciences Elective Code: B

AGS-928 Independent Study (1-3)

Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean.

AGS-948 Special Projects (1-3)

Includes an agreed-to development plan for an applied problem solution. Allows student to pursue exploration and fact gathering of special-interest projects. Student and instructor meet weekly for discussion, observation and evaluation of the project development. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

AGT: AG-Technology

AGV: AG-Vet-Tech

AGV-101 Veterinary Assisting (3)

Allows students to develop basic clinical skills expected of a veterinary assistant. Topics include basic restraint techniques, bandaging, basic laboratory procedures, basic radiology including safety and animal anatomy as related to patient positioning recognition, aseptic surgical recovery, and client communication. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

AGV-103 Introduction to Veterinary Science (3)

Studies the comparative anatomy and physiology of the major body systems of domestic animals and how anatomy and physiology are altered in disease states. Examines the effects of environment, stress, disease and nutrition on animal physiology and well-being. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGV-105 Animal Behavior/Kennel Management (5)

Studies basic animal behavior and the influences that modify behavior and kennel management including laws, records and daily operation of kennels. Practical experience is included. Credits: 5, Hours: (3/4/0/0), Arts & Sciences Elective Code: B

AGV-107 Pharmacy Skills (3)

An introductory course in small animal health products. Special emphasis on safe handling, storage, dispensing and use of common veterinary drugs and products. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B; Comments: Will not meet Veterinary Technician Pharmacology requirement

AGV-120 Veterinary Medical Terminology (1)

Focuses on reading and interpreting medical charts and records, and conversing with veterinary professionals. Designed for students to develop a working understanding of the language of veterinary medicine. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

AGV-126 Animal Anatomy and Physiology I (3)

Beginning anatomy and physiology with veterinary clinical emphasis. Provides the basis for study of conformation, production and pathological processes of diseases of dogs, cats, horses, sheep, goats, cattle, swine and laboratory animals. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGV-127 Animal Anatomy and Physiology II (4)

Studies anatomy and physiologic principles of domestic animals. Continuation of physiologic principles in Animal Anatomy and Physiology I. Credits: 4, Hours: (4/0/0/0), Prereq: AGV-126; Arts & Sciences Elective Code: B

AGV-140 Veterinary Pharmacology (3)

Studies medications and products commonly used in veterinary medicine. Credits: 3, Hours: (3/0/0/0), Prereq: AGV-127, AGV-142; Arts & Sciences Elective Code: B

AGV-142 Math for Vet Tech (3)

Covers pharmaceutical mathematics with an emphasis on dosage calculations and fluid therapy as related to veterinary medicine. Course is open to Vet Tech students only. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGV-143 Canine and Feline Nutrition (3)

Studies the nutritional requirements of dogs and cats with an emphasis on client education and customer service. Students analyze pet foods, identify strengths and weaknesses of commercial diets and gain the basics of therapeutic nutrition. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGV-144 Fundamentals of Small Animal Nutrition (3)

Covers essential nutrients and the roles of each in an animal’s metabolism, with an emphasis on the nutritional management of dogs and cats. Basic clinical and therapeutic nutrition are covered in depth. Includes analysis of many commercial pet foods. Credits: 3, Hours: (3/0/0/0), Prereq: AGV-126, AGV-127; Arts & Sciences Elective Code: B

AGV-146 Large Animal Care (3)

Provides general livestock husbandry, handling and restraint involving horses, cattle, sheep and swine. Includes major breed identification, characteristics, behavior traits, latest humane handling techniques and physical restraint. Credits: 3, Hours: (1/4/0/0), Prereq: AGV-126; Arts & Sciences Elective Code: B

AGV-152 Veterinary Computer Applications (2)

Introduces the student to computer software commonly used in veterinary practice. Students will become proficient in the use of Microsoft Office software and software used in the routine management of veterinary records. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

AGV-153 Veterinary Reception and Administration Skills (3)

Gives the student the skills necessary to function as a receptionist in a veterinary hospital. Focuses on telephone techniques, medical records, legal aspects of veterinary medical records, vaccination protocols, client communication, dealing with death and euthanasia, the admittance and discharge of patients, financial aspects of veterinary practice and basic practice management principles. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGV-155 Shelter Administration and Computer Applications (3)

Introduces computer software commonly used in animal-related businesses. Highlights Microsoft Office software and software packages used in the routine management of animal shelter and animal control recordkeeping. Stresses front office procedures, and reception and client relations skills. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGV-158 Veterinary Law and Ethics (3)

Discusses moral, ethical and legal principles applicable to veterinarians and their employees, breeders, kennel operators, pet groomers and others allied to the small animal industry. Considers state, local and federal regulations relating to the industry. Effective client relations and telephone courtesy skills are also stressed. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGV-161 Animal Nursing I (3)

Introduces the fundamentals of animal nursing. Includes animal handling and restraint, patient admission and history, preparation and administration of vaccines and medications, care of hospitalized patients, introduction to radiology, practice management, client relations and sanitation. Limited to Veterinary Technician students. Credits: 3, Hours: (1/4/0/0), Prereq: AGV-105, AGV-126, AGV-142; Arts & Sciences Elective Code: B

AGV-162 Animal Nursing II (3)

Continuation of Animal Nursing I. Covers foundation material in pre- and post-surgical care, surgical assisting, fluid therapy, dental prophylaxis, anesthesia, clinical pharmacy and basic nursing skills. Clinic and hospital record keeping are covered with an introduction to practical radiology. Credits: 3, Hours: (0/6/0/0), Prereq: AGV-140, AGV-161, AGC-932; Arts & Sciences Elective Code: B

AGV-163 Animal Nursing III (3)

Continuation of Animal Nursing II. Emphasis is on radiology, record keeping, pharmacology associated with emergency care, inventory control, anesthesia, dentistry, surgical assistance, and raptor care skills. Credits: 3, Hours: (0/6/0/0), Prereq: AGC-932, AGV-162; Arts & Sciences Elective Code: B

AGV-167 Veterinary Clinic Pathology I (3)

Introduction to veterinary clinical pathology with an emphasis on laboratory procedures commonly performed in private practice. Fecal analysis, basic urinalysis and basic hematology are covered. Proper care and maintenance of laboratory equipment is stressed. Credits: 3, Hours: (2/2/0/0), Prereq: AGV-127; Arts & Sciences Elective Code: B
AGV-168 Veterinary Clinic Pathology II (3)
Basic clinical pathology laboratory procedures including specimen collection and preservation, hematology, and fecal exam preparation. Hematology will include preparation and performance of PCV, Hb, WBC, RBC counts, preparation and staining blood smears, and performance of differential cell counts. Limited to Veterinary Techni- 
cian students. Credits: 3, Hours: (2/2/0/0), Prereq: AGV-167, AGC-932; Arts & Sciences Elective Code: B

AGV-169 Veterinary Clinic Pathology III (3)
Refinement of hematology and other skills ac- quired in Veterinary Clinical Pathology II. Addi- 
tional units include urinalysis, electrocardiog- 
yraphy, necropsy, cytology and specialized clinical procedures. Credits: 3, Hours: (2/2/0/0), Prereq: AGC-932, AGV-168; Arts & Sciences Elective Code: B

AGV-171 Large Animal and Poultry Medicine (4)
Common and significant disease and health problems of livestock and poultry. Emphasis on herd/flock health, etiology, clinical symptoms, treatment and prevention. Credits: 4, Hours: (3/2/0/0), Prereq: AGV-140; Arts & Sciences Elective Code: B

AGV-175 Small Animal and Cage Bird Medicine (4)
Common and significant diseases of companion and laboratory animals. Diseases affecting birds and small animals with emphasis on etiology, clinical symptoms, treatment and prevention. Credits: 4, Hours: (3/2/0/0), Prereq: AGV-140; Arts & Sciences Elective Code: B

AGV-179 Lab Animal Medicine (1)
Introduces students to laboratory animals used in research. Practical care with selected animals. Credits: 1, Hours: (0/2/0/0), Prereq: AGV-162, AGV-168; Arts & Sciences Elective Code: B

AGV-190 Animal Welfare and Shelter Management (4)
Develops the skills necessary for day-to-day management of an animal housing facility. Ex- amines development of infectious disease control policies, and cleaning and disinfection protocols. Focuses on the daily operation of an animal housing facility to include population manage- ment, cleaning and disinfection, disease and infection control within a facility, animal housing, exercise and space needs, enrichment, temper- ament assessment and adoption procedures. Credits: 4, Hours: (2/4/0/0), Arts & Sciences Elective Code: B

AGV-191 Animal Behavior and Restraint (3)
Examines animal capture and restraint from a behavioral perspective. Studies species and breed normal behaviors, and common restraint and capture techniques. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGV-192 Shelter Medicine (3)
Introduces common diseases of animals housed in shelter situations. Focuses on identifying mechanisms of disease transmission, diagnosis, prevention and therapy. Addresses proper han- dling, storage and administration of common vaccinations. Presents basic principles of first aid and physical examination. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGV-193 Vehicle Safety and Operations (1)
Introduces the safe operation of animal control vehicles. Develops proficiency and an understand- ing of safe and legal operation of trucks and trailers, trucks with small animal boxes, and other related animal control and transport vehicles. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: B

AGV-194 Disaster Animal Response Training (1)
Familiarizes participants with disaster situations and provides the background necessary to assist an agency in effective emergency animal relief efforts. Covers Incident Command Systems (ICS), animal rescue and transport, community needs, and working with state and national ani- mal rescue groups. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

AGV-195 Large Animal Welfare (3)
Discusses livestock husbandry, handling and nutrition from an animal welfare and animal control perspective. Includes major breed identi- fication and characteristics, behavior traits, hu- mane handling techniques and appropriate housing for cattle, horses, sheep, swine and camelds. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGV-196 Euthanasia Technician (1)
Introduces acceptable methods of euthanasia based on the AVMA's current guidelines. Pre- sents restraint techniques, administration of selected euthanasia agents, as well as proper handling, record keeping and storage of eutha- nasia agents. Discusses techniques for recogniz- ing and coping with stress and burnout related to euthanasia. Covers laws relating to controlled substances and animal disposal. Successful completion of the course will earn the student certification as a Euthanasia Technician. Credits: 1, Hours: (1/5/1/0), Arts & Sciences Elective Code: B; Comments: Enrollment limited to Hu- mane Officer Training and Veterinary Technology students

AGV-197 Basic Animal Investigation Techniques (3)
Introduces techniques for conducting animal cruelty investigations and procedures used to strengthen cases and convictions. Includes working with state and local laws, prosecutors and the court system. Students complete a series of case studies of animal cruelty cases. Credits: 3, Hours: (3/0/0/0), Prereq: CRJ-133, AGV-190; Arts & Sciences Elective Code: B

AGV-198 Wildlife ID and Management (2)
Introduces the identification, housing, nutrition and general care of wildlife indigenous to Iowa. Covers legal issues related to possession of wild- life, and working with Department of Natural Resources and wildlife rehabilitators. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

AGV-199 Veterinary Forensics (3)
Explores the field of forensic science and its impact on science, society and the criminal jus- tice system as it relates to animal-related laws. Provides a background in basic sciences while educating the Humane Officer Training student in the realities and limitations of scientific methods when applied specifically to criminal investiga- tions. Credits: 3, Hours: (3/0/0/0), Arts & Sci-ences Elective Code: B

AGV-201 Pet Grooming I (3)
Emphasis on health care and basics of cats and dogs, introduction to grooming equipment and handling. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

AGV-202 Pet Grooming II (3)
Covers terriers, terrier patterns and terminology. Perfecting basics and feline grooming. Building confidence. Credits: 3, Hours: (1/4/0/0), Prereq: AGV-201; Arts & Sciences Elective Code: B

AGV-203 Pet Grooming III (3)
Introduces the student to poodle patterns and mixed breeds. Teaches the use of clippers, scis- sorsing and finishing the groom. Credits: 3, Hours: (1/4/0/0), Prereq: AGV-202; Arts & Sciences Elective Code: B

AGV-204 Pet Grooming IV (3)
Develops basic skills for entry-level employment. Covers all breed grooming and various business aspects of the grooming industry. Reviews Level I through III and finishing techniques. Credits: 3, Hours: (1/4/0/0), Prereq: AGV-203; Arts & Sciences Elective Code: B

AGV-300 Clinical Veterinary Experience (2)
Studies the practical application of technical veterinary assisting skills while working in private veterinary practice. Focuses on caring for hospi- talized patients, admitting and discharging pa- tients, providing general kennel sanitation and record keeping. Credits: 2, Hours: (0/0/0/8), Prereq: AGV-105, AGV-152, AGV-153, AGV-158; Coreq: AGV-101; Arts & Sciences Elective Code: B

AGV-400 Grooming Shop Management I (3)
Covers basic small business concepts for self-employed or independent contractor pet groomers, including financing, regulatory and licensing concerns, business location, insurance, recordkeeping and tax considerations. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGV-401 Grooming Shop Management II (3)
Focuses on day-to-day management of the grooming shop, including competitive analysis, marketing and advertising, client relations, shop safety and cleanliness, and hiring and managing employees. Discusses add-on services and shop management software. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGV-948 Special Projects (1-3)
Includes an agreed-to development plan for an applied problem solution. Student and instructor meet on a weekly basis to review progress. Cred- its: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

ANT: Anthropology

ANT-105 Cultural Anthropology (3)
Explores what it means to be human. A compara- tive, holistic study of group life in various cultures is undertaken. Selected aspects of physical and cultural anthropology perspectives provide the basis for these cross-cultural examinations. Cred-
ART-101 Art Appreciation (3)
Provides an overview of art from a historical, contemporary and aesthetic frame of reference. Recommended for non-Art majors. Credits: 3, Hours: (3/0/0), Arts & Sciences Elective Code: A

ART-133 Drawing (3)
Introduces analysis of visual form and principles of responsive drawing. Includes perspective, chiaroscuro and figure drawing. Credits: 3, Hours: (2/2/0), Arts & Sciences Elective Code: A

ART-134 Drawing II (3)
Continues skills begun in Drawing. Emphasis on figure drawing from model, various media. Emphasizes development of personal expression and portfolio. Credits: 3, Hours: (2/2/0), Pre-req: ART-133; Arts & Sciences Elective Code: A

ART-138 Figure Drawing (3)
Familiarizes students with drawing the human figure. Course focuses on observational drawing from the model, emphasizing the activity of drawing from life, refining skills in observation and rendering. Attention is given to formal aspects of drawing, including methods of approach and execution, personal expression and broader expectations vis-a-vis critique. Credits: 3, Hours: (2/2/0), Pre-req: ART-133; Arts & Sciences Elective Code: A
ART-143 Painting (3)
Introduces oil or acrylic painting. Emphasizes canvas preparation, composition and craftsmanship. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

ART-144 Painting II (3)
Builds on skills learned in Painting with emphasis on development of independent aesthetic judgments. Credits: 3, Hours: (2/2/0/0), Prereq: ART-143; Arts & Sciences Elective Code: A

ART-157 Printmaking (3)
Introduces intaglio, relief and stencil printmaking processes and composition. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

ART-158 Printmaking II (3)
Continues technical development in relief and intaglio techniques; aesthetics stressed. Credits: 3, Hours: (2/2/0/0), Prereq: ART-157; Arts & Sciences Elective Code: A

ART-161 Digital Art (3)
Introduces the computer as a tool for visual communication and composition of various types of art in the Fine Art context. Includes raster and vector-based image making, digital collage, digital image manipulation, basic animation, digital painting and drawing, blending of traditional and digital art-making, and experimentation in a variety of input and final output methods. Credits: 3, Hours: (2/2/0/0), Coreq: ART-153, ART-301; Arts & Sciences Elective Code: A

ART-163 Sculpture (3)
Introduces techniques and concepts of sculpture using materials such as metal, glass, clay, wood, and plaster. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

ART-164 Sculpture II (3)
Continues the exploration of techniques and concepts of sculptural form. Assignments are geared for progressive development in the individual’s ability. Credits: 3, Hours: (2/2/0/0), Prereq: ART-163; Arts & Sciences Elective Code: A

ART-165 Sculpture III (3)
Continues the exploration and development of techniques and concepts of sculptural form. Assignments are geared for progressive development of the individual’s ability. May be repeated once for credit. Credits: 3, Hours: (2/2/0/0), Prereq: ART-164; Arts & Sciences Elective Code: A

ART-173 Ceramics (3)
Introduces wheel-thrown forms and hand-building forms. Students examine methods of working with clay. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

ART-174 Ceramics II (3)
Continues the development of wheel-throwing and hand-building skills gained in Ceramics I. Assignments are geared for progressive development of the individual’s ability. Credits: 3, Hours: (2/2/0/0), Prereq: ART-173; Arts & Sciences Elective Code: A

ART-175 Ceramics III (3)
Continues the development of wheel-throwing and hand-building skills gained in Ceramics II. Assignments are geared for progressive development of the individual’s ability. May be repeated once for credit. Credits: 3, Hours: (2/2/0/0), Prereq: ART-174; Arts & Sciences Elective Code: A

ART-184 Photography (3)
Provides aesthetic, ethical and philosophical frameworks used in understanding the historical and contemporary worlds of photography. Focuses on both film and digital cameras. Highlights principles and elements of design and photographic composition. Photographs are created in a traditional and contemporary setting for portfolio and display. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

ART-185 Photography II (3)
Continues exploration of photographic capture/concept using traditional and digital media. Emphasizes development of personal vision while exploring the grammar of photography. The frame, focus, motion and materials used to produce work provide a framework for dictating the visual outcome. Traditional and digital approaches are combined in the production of student portfolios and displays. Credits: 3, Hours: (2/2/0/0), Prereq: ART-184; Arts & Sciences Elective Code: A

ART-186 Digital Photography (3)
Develops familiarity and proficiency with digital cameras, computers and printers. Studies technical and aesthetic issues in visual communication and digital image capture/presentation. Students complete presentations, critiques online, portfolio and displays. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

ART-203 Art History I (3)
Introduces the history of art chronologically, from the prehistoric period in Europe to the early Renaissance. Cultivates a meaningful recognition of different styles, concepts and concerns through an analysis of selected paintings, sculpture, architecture and other mediums. Emphasizes the thematic issues prevalent in various time periods and geographic/cultural areas. Examines interpretation, concepts, theories, and comparison of styles and techniques through readings, visual presentations, lecture and discussion. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

ART-204 Art History II (3)
Introduces the history of art chronologically, from the Renaissance to the 21st century. Cultivates a meaningful recognition of different styles, concepts and concerns through an analysis of selected paintings, sculpture, architecture and other mediums. Emphasizes the thematic issues prevalent in various time periods and geographic/cultural areas. Examines interpretation, concepts, theories, and comparison of styles and techniques through readings, visual presentations, lecture and discussion. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

ART-220 Ceramics IV (3)
Provides opportunity for students to do advanced individual projects in sculptural and functional ceramics. Assignments are geared for progressive development of the individual’s ability. Technical awareness of glaze materials, glaze formulation, firing techniques and studio operations are covered. Specific objectives are individualized and recorded in a contract signed by instructor and student. May be repeated for credit. Credits: 3, Hours: (2/2/0/0), Prereq: ART-175; Arts & Sciences Elective Code: A

ART-223 Digital Photography II (3)
Improves proficiency with digital SLR cameras, computer applications and printing. Students build on technical and aesthetic concepts in visual communication and digital image concept, capture and presentation. Students explore RAW format digital processing and digital photo management applications. Strongly emphasizes digital manipulation. Credits: 3, Hours: (2/2/0/0), Prereq: ART-186; Arts & Sciences Elective Code: A

ART-290 Projects in Photography (1)
Studies photography as a way to communicate or make art. Students propose a personal project that can be created in traditional or digital capture. Work is displayed and weekly meetings mark progress on student project. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

ART-301 Design Fundamentals (3)
Introduces design concepts and fundamental skills through studio exercises. Explores design elements such as shape, value, texture, color, line, space and mass. Students generate creative ideas and employ a variety of media and materials to gain visual sensitivity through practical experience. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

ART-420 Introduction to Glass (3)
Introduces contemporary and historic glass working techniques and concepts. Covers fusing, slumping, bead making, kiln casting and hot glass blowing. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

ART-430 Warm Glass I - Slumping, Fusing, Casting (3)
Investigates contemporary and traditional warm glass working techniques and concepts. Includes the creation of intermediate flat fusing, slumping and solid cast forms. Involves group and individual demonstrations, discussions and critiques. Credits: 3, Hours: (2/2/0/0), Prereq: ART-420; Arts & Sciences Elective Code: A

ART-431 Warm Glass II - Slumping, Fusing, Casting (3)
Explores advanced contemporary and traditional warm glass working techniques and concepts. Includes lectures, demonstrations, discussions, practice and critiques. Includes flat fusing, slumping, torch working and solid cast forms. Course may be repeated for credit. Credits: 3, Hours: (2/2/0/0), Prereq: ART-430; Arts & Sciences Elective Code: A

ART-440 Hot Glass I - Blowing and Sculpting (3)
Furthers contemporary and traditional hot glass working techniques and concepts. Consists of group and individual demonstrations, discussions and critiques. Includes the creation of hot blown forms, solid forms, functional and non-functional objects using hot glass. Credits: 3, Hours: (2/2/0/0), Prereq: ART-420; Arts & Sciences Elective Code: A

ART-441 Hot Glass II - Blowing and Sculpting Casting (3)
Focuses on advanced contemporary and traditional hot glass working techniques and concepts. Consists of group and individual demonstrations, discussions and critiques. Introduces the application of bases, the use of color, color
ART-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1; Hours: (1/0/0/0), Arts & Sciences Elective Code: A

ART-928 Independent Study (1-3)
Allows the student to do readings, papers, search and/or production work under the guidance of an art faculty member. Independent study contract required. Credits: 1-3; Hours: (1-3/0/0/0), Arts & Sciences Elective Code: A

ASL: American Sign Language

ASL-141 American Sign Language I (4)
Provides a beginning interactive course to promote comfort and knowledge in using grammar, syntax, vocabulary, fingerspelling, semantics and non-manual behaviors of American Sign Language in professional, social and everyday normal conversational situations. Emphasizes receptive and expressive skills. Course is taught in American Sign Language. Credits: 4; Hours: (4/0/0/0), Arts & Sciences Elective Code: A

ASL-171 American Sign Language II (4)
Continues development of American Sign Language grammar, syntax, vocabulary, fingerspelling, semantics and non-manual behaviors. Emphasizes comprehension, production skills and use of language in a cultural context. Course is taught in American Sign Language. This course applies toward satisfaction of Historical/Cultural core for an AA degree. Credits: 3; Hours: (3/0/0/0), Prereq: ASL-141; Arts & Sciences Elective Code: A

ASL-241 American Sign Language III (3)
Expands on previously learned grammar, syntax, sentence structure and vocabulary in more depth. Emphasizes expressive skills through storytelling exercises and use of the language in a variety of situations. This course applies toward satisfaction of Historical/Cultural core for an AA degree. Credits: 3; Hours: (3/0/0/0), Prereq: ASL-171; Arts & Sciences Elective Code: A

ASL-271 American Sign Language IV (3)
Focuses on an expanded awareness of the behaviors, values and issues in Deaf culture through slang and varying levels of formality and socially appropriate language usage. Emphasizes receptive skills by reading signed stories and poetry. This course applies toward satisfaction of Historical/Cultural core for an AA degree. Credits: 3; Hours: (3/0/0/0), Prereq: ASL-241; Arts & Sciences Elective Code: A

ASL-928 Independent Study (1-3)
Allows the student to do readings, papers, search /or other projects under the individual guidance of a staff member. Independent study contract required. Credits: 1-2; Hours: (0/2-4/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

ATR: Automation Tech & Robotics

ATR-104 Introduction to Automation (2)
Demonstrates the safe operation of a robot including proper pendent use to create programs, set and change data, and edit existing programs. Focuses on recovering from faults, troubleshooting, and designing real-world applications. Credits: 2; Hours: (1/2/0/0), Prereq: ATR-108; Arts & Sciences Elective Code: B

ATR-108 Introduction to PAC Control (2)
Introduces programmable automation controller (PAC) systems. Explores system installation, commissioning, programming and troubleshooting through lecture, reading and hands-on labs. Credits: 2; Hours: (1/2/0/0), Prereq: ATR-320; Arts & Sciences Elective Code: B

ATR-135 Programming for Advanced Manufacturing (3)
Demonstrates industry-standard application programming. Focuses on taking robotic applications from concept to working applications ready for full-time production. Credits: 3; Hours: (1/4/0/0), Prereq: ATR-104; Arts & Sciences Elective Code: B

ATR-300 Mechanical Drive Systems I (2)
Introduces fundamentals of mechanical drives. Includes couplings, chain drives, pulley drives, motor leveling and alignment. Reinforces concepts and theory covered in lecture and online material with hands-on labs. Credits: 2; Hours: (1/2/0/0), Prereq: IND-156, IND-167; Arts & Sciences Elective Code: B

ATR-302 Mechanical Drive Systems II (1)
Introduces additional fundamentals of mechanical drives. Includes bearings, gaskets and gear drives. Reinforces concepts and theory covered in lecture and online material with hands-on labs. Credits: 1; Hours: (.5/1/0/0), Prereq: ATR-300, IND-167; Arts & Sciences Elective Code: B

ATR-304 Introduction to Industrial Controls (2)
Introduces industrial control theory. Covers control devices, sensors, schematic symbols, and the use of schematic and wiring diagrams. Considers applications, calibration, print reading and schematic drawing. Reinforces theory and classroom study with practical lab exercises. Credits: 2; Hours: (1.75/2.5/0/0), Prereq: ELE-238, IND-156; Arts & Sciences Elective Code: B

ATR-306 Industrial Control Circuits I (2)
Applies theory to practical circuits. Covers creating schematics and wiring diagrams to meet specifications. Requires students to analyze, design, construct and troubleshoot industrial control circuits in the lab. Credits: 2; Hours: (1/2/0/0), Prereq: ATR-304; Arts & Sciences Elective Code: B

ATR-308 Industrial Control Circuits II (2)
Expands print reading instruction and studies various soft start, VFD control circuits. Emphasizes troubleshooting and designing circuits to meet specifications. Credits: 2; Hours: (1.25/1.5/0/0), Prereq: ATR-306; Arts & Sciences Elective Code: B

ATR-316 Process Control and Instrumentation I (2)
Provides an introduction to control loops and instrumentation technologies. Concepts including commissioning, application, and troubleshooting are explored and emphasized through lecture, reading and hands-on labs. Credits: 2; Hours: (1/2/0/0), Prereq: ATR-108; Arts & Sciences Elective Code: B

ATR-318 Process Control and Instrumentation II (2)
Provides an introduction to integrated control, advanced tuning methods, and instrumentation-specific communication protocols. Concepts including commissioning, practical application, programming best practices, and troubleshooting are explored and emphasized. Credits: 2; Hours: (1/2/0/0), Prereq: ATR-316; Arts & Sciences Elective Code: B

ATR-320 Intermediate PLC and VFD Concepts and Control (2)
Explores advanced variable frequency drive (VFD) and programmable logic controller (PLC) capabilities and functionality. Includes programming best practices along with program and system optimization. Explores and emphasizes concepts through lecture and hands-on labs. Credits: 2; Hours: (1/2/0/0), Prereq: ATR-108; Arts & Sciences Elective Code: B

ATR-322 Industrial Motion Control (4)
Provides an introduction to open- and closed-loop motion control technologies and solutions. Explores commissioning, practical application, programming best practices, optimization and troubleshooting through lecture, reading and hands-on labs. Credits: 4; Hours: (2/4/0/0), Prereq: ATR-108; Arts & Sciences Elective Code: B

ATR-324 Fundamentals of Machine Automation and System Integration (4)
Introduces automated manufacturing systems, material handling systems, and concepts specific to system efficiency and optimization. Explores integration of various automation technologies into existing installations. Explores commissioning, practical application, programming best practices, optimization and trouble-shooting through lecture, reading and hands-on labs. Credits: 4; Hours: (2/4/0/0), Prereq: ATR-112; Arts & Sciences Elective Code: B

ATR-326 Automation and Instrumentation Capstone (2)
Utilizes skills and knowledge gained in previous courses to formulate, design and implement a solution comprised of automation and instrumentation technologies. Credits: 2; Hours: (0/4/0/0), Prereq: ATR-318, ATR-324; Arts & Sciences Elective Code: B
AUT: Automotive Technology

AUT-104 Introduction to Automotive Technology (3)
Provides the beginning apprentice technician with an introductory overview of automotive servicing from a maintenance and replacement standpoint. Classroom and hands-on activities emphasize routine maintenance procedures in the care of tires, batteries, lighting, belts, hoses, filters and cooling systems. Presents career information on career pathways, employers, goal setting, skills inventory, student club information and personal plan. Credits: 3, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

AUT-165 Automotive Engine Repair (5)
Introduces internal combustion engine fundamentals. Covers engine operation, servicing, diagnosis and overhaul. Students disassemble, make precision measurements and reassemble an engine. Emphasizes theories in practical, hands-on applications in classroom and lab exercises. Credits: 5, Hours: (2/6/0/0), Prereq: AUT-104, AUT-611, MAT-715; Arts & Sciences Elective Code: B

AUT-205 Automotive Automatic Transmissions and Transaxles (5)
Introduces Toyota’s automatic transmission fundamentals. Covers automatic transmission operation, servicing, diagnosis and overhaul. Students disassemble, make precision measurements and reassemble a Toyota AB60E/F transmission. Focuses on identifying components, operational theory, powerflow and diagnosing several Toyota automatic transmissions and transaxles, through practical hands-on applications in the classroom and lab exercises. Requires students to R&R an automatic transmission or transaxle and perform all NATEF P-1, P-2 and P-3 tasks in the A2 ASE area. Covers specific Toyota units, including A-245E (Simpson Based Gear Train), U250E (Tandem Based Gear Train), U660E (Ravigneaux/Lepelletier Based Gear Train) and the AB60E (Compound Based Gear Train). Safety is required. Credits: 5, Hours: (2/6/0/0), Prereq: AUT-104, AUT-822, MAT-715; Arts & Sciences Elective Code: B

AUT-304 Automotive Manual Drivetrains and Axles (4)
Introduces manual drivetrain fundamentals. Includes manual drivetrain operation, servicing, diagnosis and overhaul. Students disassemble, make precision measurements and reassemble a Toyota AB60E/F transmission. Focuses on identifying components, operational theory, powerflow and diagnosing several Toyota automatic transmissions and transaxles, through practical hands-on applications in both the classroom and lab exercises. Credits: 4, Hours: (2/4/0/0), Prereq: AUT-104, AUT-655, MAT-715; Arts & Sciences Elective Code: B

AUT-404 Automotive Suspension and Steering (4)
Introduces chassis fundamentals. Covers tire and wheel service, in addition to modern electronic steering and suspension systems. Focuses on front and rear suspension system principles, system components and steering geometry as they relate to alignment diagnosis. Students remove and replace steering and suspension components, and perform wheel alignment procedures. Reinforces theories in a practical hands-on application through lab activities. Credits: 4, Hours: (2/4/0/0), Prereq: AUT-104, AUT-505, MAT-715; Arts & Sciences Elective Code: B

AUT-505 Automotive Brake Systems (5)
Introduces automotive brake hydraulic system fundamentals. Covers brake system operation, servicing and diagnosis. Students machine rotors and drums, inspect disc/drum brakes and diagnose brake system electrical problems. Focuses on advanced braking systems, including antilock, electronic stability control, hill start and hybrid braking systems. Reinforces theories in practical, hands-on classroom and lab exercises. Credits: 5, Hours: (2/6/0/0), Prereq: AUT-822, MAT-715; Arts & Sciences Elective Code: B

AUT-603 Basic Automotive Electricity (3)
Introduces students to basic fundamental electrical and electronics related to the automobile. Topics covered include voltage, amperage, resistance, Ohm’s Law and practical application. Series, parallel and series-parallel circuits are also studied. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AUT-611 Automotive Electricity (5)
Introduces electrical and electronic circuit theory. Covers voltage, amperage, resistance, Ohm’s Law and practical application on series, parallel and series-parallel circuits. Emphasizes studying circuits through electrical wiring diagrams and introduces scan tools and digital storage oscilloscopes. Covers diagnosis of electrical circuits with and without multiplex network control. Includes certification as power user of the Snap-On Generation II oscilloscope and component tester. Requires all NATEF P-1, P-2 and P-3 tasks in the A8 ASE area. Credits: 5, Hours: (2/6/0/0), Prereq: AUT-821, MAT-715; Arts & Sciences Elective Code: B

AUT-621 Hybrid Electric Vehicle Fundamentals (3)
Introduces the fundamentals of hybrid electric vehicles. Explores the hybrid power plant, including hybrid batteries, high- and low-voltage systems, inverters, safety procedures, hybrid maintenance and diagnostics. Includes other alternative fuels. Credits: 3, Hours: (1.5/3/0/0), Prereq: AUT-655, either MAT-715 or MAT-076, Residential Voltage Arc Flash; Arts & Sciences Elective Code: B

AUT-655 Automotive Advanced Electricity (5)
Covers automotive electrical systems with an emphasis on network controlled auxiliary systems, including navigation, audio, supplemental restraint and immobilizer theft deterrent. Builds diagnostic skills through extensive use of oscilloscopes and multi-meter for body electrical circuit problems. Covers general servicing of hybrid vehicles. Includes certification as power users of the Snap-On Generation I oscilloscope and component tester. Credits: 5, Hours: (2/6/0/0), Prereq: AUT-611; Arts & Sciences Elective Code: B

AUT-704 Automotive Heating and Air Conditioning (4)
Introduces Toyota/Lexus HVAC fundamentals. Focuses on refrigerant identification, recovery/recycling, evacuation, recharging and leak testing skills. Students remove and install an evaporator/heater core assembly on a Toyota/Lexus vehicle. Focuses on identifying components, operational theory, servicing and diagnosis of Toyota/Lexus HVAC systems through practical hands-on applications in the classroom and lab exercises. Includes EPA 609 Technician Certification. Requires all NATEF P-1, P-2 and P-3 tasks in the A7 ASE area. Safety is required. Credits: 4, Hours: (2/4/0/0), Prereq: AUT-822, MAT-715; Arts & Sciences Elective Code: B

AUT-821 Computerized Engine Controls I (5)
Introduces Toyota/Lexus engine control fundamentals. Focuses on identifying components, operational theory, servicing and diagnosis of Toyota/Lexus input sensors, ignition systems, fuel systems and ECU outputs through practical hands-on applications in the classroom and lab exercises. Requires certification as power user of the Snap-On Generation II oscilloscope and component tester. Requires all NATEF P-1, P-2 and P-3 tasks in the A8 ASE area. Safety is required. Credits: 5, Hours: (2/6/0/0), Prereq: AUT-104, AUT-655, MAT-715; Arts & Sciences Elective Code: B

AUT-822 Computerized Engine Controls II (5)
Explores diagnosis of engine performance faults using all 10 modes of OBD II. Covers Types A, B and C engine misfires. Focuses on identifying components, operational theory, servicing and diagnosis of Toyota/Lexus fuel injection, secondary air injection and EVAP systems through practical hands-on applications in the classroom and lab exercises. Includes certification as power user of the Snap-On Generation II scan tool. Students perform all NATEF P-1, P-2 and P-3 tasks in the A8 ASE area. Credits: 5, Hours: (2/6/0/0), Prereq: AUT-821, MAT-715; Arts & Sciences Elective Code: B

AUT-888 Technical Lab I (4)
Simulated automotive repair environment. Learning activities include complaint, cause and correction to customer vehicles. Parts and labor calculations also covered. Credits: 4, Hours: (1/6/0/0), Arts & Sciences Elective Code: B

AUT-889 Technical Lab II (4)
Continues to expose students to an automotive repair environment. Learning activities include complaint, cause and correction to customer vehicles. Parts and labor calculations also covered. Credits: 4, Hours: (1/6/0/0), Prereq: AUT-104, AUT-603, MAT-715; Arts & Sciences Elective Code: B

AUT-924 Honors Project (3)
Allows a qualified honoree student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

AUT-928 Independent Study (1-3)
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permis- sion of instructor, dean

AUT-932 Internship (2)
Builds applied skills through employment, providing practical, on-the-job training at businesses related to instructional programs. Stu-
students are required to prepare training plans and other reports. Credits: 2, Hours: (0/0/0/128), Prereq: AUT-889; Arts & Sciences Elective Code: B

BCA: Business Computer Applications

BCA-080 College Prep Computer Skills I (2) Provides basic computer skills instruction to students enrolled in the College Prep Block. Focuses on basic keyboard knowledge and command functions. Credits: 2, Hours: (0/4/0/0), Arts & Sciences Elective Code: D

BCA-085 College Prep Computer Skills II (1) Provides computer skills instruction to students enrolled in the College Prep Block. Continues instruction using word processing software. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: D; Comments: Placement test

BCA-135 Introduction to Word Processing (3) Provides instruction in basic keyboarding and includes exercises designed to increase speed to 45 words per minute with five or fewer errors on five-minute timed writings. Includes instruction in the use of proofreaders’ marks and in creating standard business letters, interoffice memos, tables, simple reports and newsletters using Microsoft Word. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

BCA-136 Advanced Word Processing (3) Begins with a review of basic word correspondence. Instruction includes advanced topics such as mail merge, macros, styles, complex tables, long reports, graphics and online forms. Guided drills are designed to increase speed to 55 words per minute with five or fewer errors on five-minute timed writings. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

BCA-138 Advanced Word Processing Applications (3) Provides further reinforcement of all concepts learned in Advanced Word Processing. Covers mail merge, macros, styles, complex tables, desktop published documents, online forms and long reports. Includes keying specialized documents, such as agendas, news releases, itineraries and speeches. Guided drills are designed to increase speed to 60 words per minute with five or fewer errors on five-minute timed writings. Students learn to make effective document formatting decisions working independently. Credits: 3, Hours: (2/2/0/0), Prereq: BCA-136; Arts & Sciences Elective Code: A

BCA-179 PowerPoint Multimedia (3) Develops knowledge of multimedia concepts by studying multimedia software and the hardware components needed to develop and view multimedia productions. Assessment projects are used by students for demonstration of knowledge of multimedia elements (copyright, video, graphics, sound, animation) knowledge of tools (digital camera, video camera, scanner, cam’s), and knowledge of editing software (sound editing, video editing, graphics editing). Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

BCA-189 Microcomputer Literacy (1) Introduces the student to the personal computer concepts and basic computer applications. Students gain knowledge of the basic concepts of Microsoft Windows and Word. They also gain experience using the Internet and email. The course introduces students to spreadsheet and presentation software. This introductory course is intended for students with no knowledge or experience using personal computers. Credits: 1, Hours: (0.5/1/0/0), Arts & Sciences Elective Code: B

BCA-205 Database/Spreadsheets (3) Develops proficiency in the use of database and spreadsheet computer applications. Includes creating and sorting tables, using functions and formulas, creating queries and reports, formatting data, filtering records, and creating charts and graphs. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

BCA-213 Intermediate Computer Business Applications (3) Extends basic knowledge of Microsoft Word, Access, Excel and PowerPoint. Upon completion of this course students should be able to demonstrate proficiency at the core level of the MOS (Microsoft Office Specialist) certification. Credits: 3, Hours: (2/2/0/0), Prereq: BCA-212 or CSC-110; Arts & Sciences Elective Code: B

BCA-290 Web Design Principles (3) Discusses the process of website design and production. Focuses on aesthetic design, which is style, theme and layout, as well as functional design, including usability, content and navigation. Incorporates the use of Web authoring software to produce and maintain websites. Credits: 3, Hours: (2/2/0/0), Prereq: CIS-207; Arts & Sciences Elective Code: B

BCA-302 Graphics and Multimedia for the Web (3) Introduces a number of commercial and open source tools for manipulating graphics, audio and multimedia files for presentation on the web. While not a content creation course, some content editing is covered. Primary emphasis is placed on file types, encoding standards, plug-in issues, file optimization and markup options for various browsers and platforms. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

BCA-304 Emerging Technology Trends (1) Integrates information technology into students’ daily experience and provides opportunities to research and explore emerging technologies for class consideration and discussion. Develops awareness of current legal, societal, ethical, and economic dilemmas and trends driven by ever-changing information technology. Focuses on the importance of keeping abreast of technological changes that affect the office professional. Credits: 1, Hours: (0.5/1/0/0), Arts & Sciences Elective Code: B

BCA-320 Content Management Systems (3) Explores a variety of open-source Web platforms based on Apache/PHP/MySQL technology. Emphasizes content management systems such as WordPress and Drupal, although more specialized systems are also considered. Focuses on deploying, configuring and styling these systems to meet a variety of business and client needs. Credits: 3, Hours: (2/2/0/0), Prereq: BCA-290; Arts & Sciences Elective Code: B

BCA-800 Web Technologies Capstone (3) Provides a cumulative experience for students to independently complete a portfolio-quality Web project. Integrates skills acquired in core and emphasis courses with individual strengths to develop comprehensive solutions. Credits: 3, Hours: (2/2/0/0), Prereq: CIS-334; Arts & Sciences Elective Code: B; Comments: Students need to register for this course in the final term of program

BIO: Biology

BIO-104 Introductory Biology With Lab (3) Intended as a beginning-level course for liberal arts students who are not planning to major in the sciences. The course includes genetics, evolution, ecology, plant and animal reproduction, and biodiversity. Current topics in life science are covered throughout the course. Students are offered a variety of opportunities in laboratory through investigations, discussion, written expression and readings. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

BIO-110 Basic Biological Concepts (3) Designed for the student with little or no background in biology or chemistry, or as a refresher for the student who has not taken either for many years. Provides a basic foundation for further course work in the biological sciences. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

BIO-112 General Biology I (4) Serves as an introductory course for biology, science and health science majors, Principles of cellular biology and elementary biochemistry and energy functions are covered; cell division, DNA/RNA and genetics follow. Evolution theory completes the work of the semester. Credits: 4, Hours: (3/2/0/0), Prereq: BIO-110 or CHM-165; Arts & Sciences Elective Code: A; Comments: Besides taking a prerequisite course, proficiency may be demonstrated by a passing score on the Biology Readiness Exam. Contact the Test Center for details.

BIO-113 General Biology II (4) Continues the study of General Biology I concentrating on organismal biology and ecology. The evolution and diversity of the Monera, Protista, Fungi, Plantae and Animalia are covered, followed by a comprehensive study of ecology. Additional topics include plant anatomy and physiology, and animal systems including, but not limited to, nervous, circulatory, reproductive and immune systems. Credits: 4, Hours: (3/2/0/0), Prereq: BIO-112; Arts & Sciences Elective Code: A

BIO-124 Botany for Non-Majors (4) Surveys the plant kingdom from bacteria to seed-bearing plants, and studies general anatomy and physiological processes of plants. Initial studies are of plant cells followed by that of vegetative and reproductive processes. Physiological processes of photosynthesis, transpiration, absorption, conduction, respiration, pollination and fertilization are included. Credits: 4, Hours: (3/2/0/0), Arts & Sciences Elective Code: A
Course Descriptions

BIO-151 Nutrition (3)  
Designed to show the relationship between sound nutrition and good health. Topics studied are: energy requirements, carbohydrates, lipids, proteins, vitamins, minerals, metabolism, physical exercise, dieting, weight problems, evaluation of nutritional claims, vegetarianism, and proper nutrition during pregnancy and lactation. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A; Comments: Does not count as a science course for the A.A. degree

BIO-154 Human Biology (3)  
Examines human form and function and the relationship of humans to other living things. Fundamental biological principles as they apply to the human are explored. This course is intended for liberal arts students who do not currently plan to major in the biological or health sciences. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

BIO-161 Basic Anatomy and Physiology (3)  
Designed for students in the specific health sciences. An overview of human form and function presented in a lecture/laboratory format. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

BIO-168 Human Anatomy & Physiology I w/Lab (4)  
Introduces the structure and function of the human body. Organization at the cellular and tissue level and selected organ systems are emphasized. Laboratory activities (which include computer simulations, dissection, and/or human specimens) reinforce current concepts. Credits: 4, Hours: (3/2/0/0), Prereq: One year of recent high school biology/chemistry with a grade of B or higher strongly recommended, or completion of Basic Biological Concepts or other college-level biology course; Arts & Sciences Elective Code: B

BIO-173 Human Anatomy & Physiology II w/Lab (4)  
Continues the study of human organ systems. Laboratory activities and dissection, which includes computer simulations and human specimens, correspond to structures and functions investigated. Credits: 4, Hours: (3/2/0/0), Prereq: BIO-168; Arts & Sciences Elective Code: A

BIO-177 Human Anatomy (4)  
Covers the gross structure and function of human body systems. Focuses on function as it relates to structure through class and laboratory activities. Laboratory experiences include cadaver study, human specimens, dissection and interactive group work. Credits: 4, Hours: (3/2/0/0), Arts & Sciences Elective Code: A; Comments: Recommend BIO-110 or recent high school biology class with a grade of B or above

BIO-180 Human Physiology (4)  
Examines the physiological processes associated with human body systems. Topics include biochemistry, metabolism, hormone actions, muscular physiology, neurophysiology, cardiovascular function, renal function, acid/base/electrolyte regulation, respiratory system, immune response and reproduction functions. Lab investigates system physiological responses and culminates in a research experience. Credits: 4, Hours: (3/2/0/0), Prereq: BIO-177; Arts & Sciences Elective Code: A

BIO-181 Homeostatic Physiology (3)  
Designed for advanced Health Sciences students. This course emphasizes body systems important to maintaining homeostasis in the human. Nerve and muscle tissue, cardiac, respiratory, fluid-electrolyte and endocrine physiology are addressed. Credits: 3, Hours: (3/0/0/0), Prereq: BIO-161; Arts & Sciences Elective Code: B

BIO-182 Basic Microbiology (1.5)  
Includes the structures and function of microorganisms, characteristics of pathogenic and non-pathogenic bacteria, infection processes, specifics of the immune response, and principles and applications of asepsis. Credits: 1.5, Hours: (1/1/0/0), Arts & Sciences Elective Code: B

BIO-186 Microbiology (4)  
Surveys bacteria, viruses and fungi: their growth characteristics, morphology and pathogenicity. The epidemiology and diagnosis of pathogenic bacteria and an introduction to immunology are also included. Laboratory emphasis is on culturing, identification, aseptic technique and basic immunological assays. Credits: 4, Hours: (3/2/0/0), Prereq: One year of recent high school biology/chemistry with a grade of B or higher is strongly recommended, or completion of Basic Biological Concepts or other college-level biology course; Arts & Sciences Elective Code: B

BIO-189 Microbes and Society (3)  
Explores microorganisms and how they have influenced human affairs and the environment. Through lectures, assigned readings, educational films, slides, tapes and discussions students explore the power of selected microorganisms, how they influenced history, demography, fashion, the arts, the economy and, of course, individual lives. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

BIO-190 Introductory Biotechnology (3)  
Explores biotechnology and its impact on science and society. Includes basic biological principles, biotechnology, students who have completed liberal and medical applications of biotechnology and potential careers. Intended for liberal arts students interested in biotechnology and those interested in the Biotechnology AAS degree. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

BIO-195 Human Evolution (3)  
Considers biological evaluations and applications to the history of the human species. Hypotheses and theories concerning the origins of the earth, life, levels of life, the human species and races are examined. Topics include primate classification and relationships, human evolution, anthropological and archeological techniques, the evolution of prehistoric culture, and human migration into North America. Concept-building subject areas include genetic, evolution and paleontology principles. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

BIO-249 Biotechnology Internship (1-3)  
Provides practical experience in the field of biotechnology. Students who have completed most or all of their course work in the biotechnology program are given the opportunity to acquire work-related skills through a cooperative effort with local biotechnology companies. Credits: 3, Hours: (0/0/0/12), Prereq: BIO-147, CHM-175; Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

BIO-400 Lab Methodology (3)  
Emphasizes basic laboratory techniques commonly used in the biotechnology field. Includes properly collecting data, making laboratory measurements, preparing solutions and using laboratory instruments. Covers quality control and assurance, and biosafety issues such as blood-borne pathogen training and interpretation of MSDS literature. Lab included. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

BIO-410 Molecular Biology Techniques I (4)  
Introduces modern molecular biology techniques utilizing nucleic acids (DNA and RNA). Includes nucleic acid purification, quantitation, cloning and restriction enzyme digest. Advanced techniques include Southern and Northern analysis, polymerase chain reaction (PCR), real-time PCR and DNA sequencing. Stress proficiency in techniques and proper analysis of results. Lab included. Credits: 4, Hours: (1/6/0/0), Arts & Sciences Elective Code: B

BIO-420 Molecular Biology Techniques II (4)  
Introduces modern molecular techniques utilizing biomolecules, emphasizing proteins. Explores basic techniques in protein expression, protein purification, and protein analysis including Western blot analysis. Includes complex techniques relating to biolecule separation. These methods include a variety of chromatographic methods including: paper, thin layer, gel permeation, gas and high performance liquid chromatography. Students interpret chromatographic results and practice documentation and reporting skills. Lab included. Credits: 4, Hours: (1/6/0/0), Prereq: BIO-410; Arts & Sciences Elective Code: B

BIO-430 Molecular Genetics (3)  
Introduces the fundamental concepts of genetics. Focuses primarily on the modern discoveries of molecular biology and their applications in today's world; however, basic principles of classical (Mendelian) genetics are also discussed. Topics include DNA structure and analysis, DNA replication, transcription, translation, cell cycle regulation with regard to cancer, recombinant DNA technology, genomics, and proteomics. Credits: 3, Hours: (3/0/0/0), Coreq: BIO-410; Arts & Sciences Elective Code: B; Comments: Lab not included. Students apply lab skills in Molecular Techniques I and Molecular Techniques II.

BIO-450 Basic Bioinformatics (3)  
Introduces bioinformatics concepts and practice. Includes biological databases, sequence alignment, gene and protein structure prediction, molecular phylogenetics, genomics and proteomics. Emphasizes practical experience with bioinformatics tools, development of basic skills in the collection and presentation of bioinformatic data, as well as basic programming in a scripting language. Credits: 3, Hours: (3/0/0/0), Prereq: BIO-190; Coreq: BIO-410; Arts & Sciences Elective Code: B

BIO-924 Honors Project (1)  
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. Course may be taken more than once. Credits: 1, Hours: (1/0/0/0),
Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean.

BIO-928 Independent Study (1)
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1; Hours: (0/2/0/0); Prereq: BIO-104 or BIO-112 or BIO-113 or BIO-168 or BIO-173 or BIO-186; Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean.

BUS: Business

BUS-101 Orientation to Business Professionalism (1)
Develops students' personal and professional skills in the business world. Focuses on the components of business image including professional dress, networking with business professionals, the art of handshaking, and proper dining, email and meeting etiquette. Students will create employment documents/tools and explore professional organizations. Emphasizes professionalism in the business industry with additional insight on how to be successful as a Kirkwood student. Credits: 1; Hours: (1/0/0/0); Arts & Sciences Elective Code: B

BUS-102 Introduction to Business (3)
Focuses on American and global business and introduces the student to each primary facet of operating a business. This course will help the student understand economic, social and political influences that affect business success. Credits: 3; Hours: (3/0/0/0); Arts & Sciences Elective Code: A

BUS-149 Small Business Financial Management (3)
Focuses on setting up and customizing accounts, the importance of appropriately categorizing transactions, transferring funds, creating invoices, splitting transactions, scheduling transactions, balancing accounts and creating reports. Covers retail analysis, tax collection and reporting, integrating online bank accounts and managing payroll. Credits: 3; Hours: (3/0/0/0); Arts & Sciences Elective Code: B

BUS-151 Introduction to E-Commerce (3)
Introduces the infrastructure and components necessary for a successful e-commerce website in the context of business, payment, security, legal and privacy issues. Includes the basic concepts, tools and techniques of Web Analytics and search engine optimization needed to begin promoting a website and evaluating its success. Includes shopping cart systems, issue tracking and analytics. Credits: 3; Hours: (2/2/0/0); Prereq: BCA-290, any MKT course; Arts & Sciences Elective Code: A

BUS-161 Human Relations (3)
Explores the psychological principles of human behavior, helping students understand themselves and others in the workplace. This course is adapted to students' needs and interests depending on their overall degree programs. Credits: 3; Hours: (3/0/0/0); Arts & Sciences Elective Code: B

BUS-182 Introduction to Law (3)
Introduces the student to the broad spectrum of the involvement of business in customary business law topics. Credits: 3; Hours: (3/0/0/0); Arts & Sciences Elective Code: A

BUS-185 Business Law I (3)
Surveys the general source of law and structure of the American legal system. Students learn basic principles of tort law, administrative law, constitutional law and contract law with an emphasis on business applications. Credits: 3; Hours: (3/0/0/0); Arts & Sciences Elective Code: A

BUS-190 Professionalism: BPA (1)
Develops and recognizes leadership and teamwork utilizing a student professional organization, Business Professionals of America (BPA). Special emphasis is placed on leadership development activities. Students are provided the opportunity to participate in state and national business competitions, earn awards, perform community service and seek local, state and national office. This course may be repeated for credit. Credits: 1; Hours: (1/0/0/0); Arts & Sciences Elective Code: B

BUS-192 Professionalism: Business Competition (1)
Develops and recognizes leadership and teamwork skills utilizing a professional organization. Emphasizes leadership development activities. Provides opportunities to participate in business competitions. Credits: 1; Hours: (1/0/0/0); Arts & Sciences Elective Code: B

BUS-280 Fundamentals of Lean Process Improvement (3)
Focuses on learning and practicing Lean methods of minimizing waste, increasing efficiency and improving quality within organizations. Provides basic understanding and practical applications of organization techniques (5S), Lean mapping tools, streamlining work processes and problem-solving methodologies (A3). Concludes with a comprehensive capstone project using real-world Lean applications. Credits: 3; Hours: (3/0/0/0); Arts & Sciences Elective Code: B

BUS-290 Employment Search and Workplace Success (1)
Provides students with an understanding of the job-seeking process including resumes and interviews. Credits: 1; Hours: (1/0/0/0); Arts & Sciences Elective Code: B

BUS-294 Business Administration Capstone (1)
Serves as a capstone for Business Administration majors. Students develop a leadership/employment portfolio to demonstrate achievement of program goals. Credits: 1; Hours: (1/0/0/0); Arts & Sciences Elective Code: B

BUS-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1; Hours: (1/0/0/0); Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

BUS-928 Independent Study (1-3)
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1; Hours: (1/0/0/0); Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

BUS-932 Internship (1-9)
Provides an opportunity to receive experience through on-the-job training in an approved business establishment. Valuable learning experiences are structured by the program coordinator and the training sponsor. Credits: 1-9; Hours: (0/0/0/4-36); Arts & Sciences Elective Code: A

BUS-949 Special Topics (1-3)
Offers a learning experience in conjunction with a structured work situation. Instruction and readings relate to and supplement the particular job experience. Credits: 1-3; Hours: (0/0/0/4-12); Coreq: BUS-908; Arts & Sciences Elective Code: A

CAD: Computer Aided Drafting

CAD-106 CAD II (3)
Provides advanced instruction in CAD (computer-aided design). Students learn to use complex commands, animation, 3-D drawing, interface CAD with other programs, modify menus, write simple programs, and set up CAD stations with AutoCAD on IBM computers. Credits: 3; Hours: (1/4/0/0); Prereq: CAD-105; Arts & Sciences Elective Code: B; Comments: Previous AutoCAD experience required

CAD-140 Parametric Solid Modeling I (3)
Provides parametric 3-D solid modeling experience using industry-standard software. Covers modeling operations including creating extrusions, cuts, holes, sweeps, blends and revolutions. Basic operations for creating drawings and assemblies are also covered. The software platform utilized shall be Inventor. Credits: 3; Hours: (2/2/0/0); Prereq: CAD-300; Arts & Sciences Elective Code: B

CAD-141 Parametric Solid Modeling II (3)
Provides students experience with parametric 3-D solid modeling using industry standard software. Students learn modeling operations including creating extrusions, cuts, holes, sweeps, blends and revolutions. Basic operations for creating drawings and assemblies are also covered. The software platform utilized shall be Pro E. Credits: 3; Hours: (2/2/0/0); Prereq: CSC-110; Arts & Sciences Elective Code: B

CAD-200 CAD SoftPlan (3)
Introduces object based CAD programs and the process involved in generating a complete set of working drawings. Emphasizes drafting set up, file management, architectural information organization, attention to detail, converting sketches to CAD, modifying CAD drawings and applying problem-solving skills. Credits: 3; Hours: (3/0/0/0); Prereq: ARC-300 and CON-116, and either IND-155 or CSC-110; Arts & Sciences Elective Code: B

CAD-201 CAD REVIT (3)
Introduces a building information modeling CAD program and the process involved in generating a complete set of working drawings. Emphasizes drafting set up, file management, architectural information organization, attention to detail, converting sketches to CAD, modifying CAD
drawings and applying problem-solving skills. Credits: 3, Hours: (3/0/0/0), Prereq: ARC-300 and CON-116, and either CSC-110 or IND-155; Arts & Sciences Elective Code: B

CAD-202 Architectural CAD Residential (3)
Presents guided, step-by-step instruction for incorporating CAD into the generation of a complete set of residential working drawings. Focuses on the proper use of basic and advanced CAD skills, organizing information to generate CAD drawings and interpretation of hand drawings to CAD. Credits: 3, Hours: (3/0/0/0), Prereq: CAD-400; Arts & Sciences Elective Code: B

CAD-204 Architectural CAD Commercial (6)
Explores further the processes involved in generating a complete set of commercial working drawings. Explores correct computer usage, code research, blueprint redline and revision, and appropriate graphic representation. Teamwork is also emphasized. Credits: 6, Hours: (2/8/0/0), Prereq: CAD-202; Arts & Sciences Elective Code: B

CAD-206 Architectural CAD Project (6)
Enables the student to develop a set of working drawings on CAD for a commercial project located on the Kirkwood campus. Focuses on correct computer usage, code research, blueprint redline and revision, and appropriate graphic representation. Teamwork is also emphasized. Credits: 6, Hours: (2/8/0/0), Prereq: CAD-204; Arts & Sciences Elective Code: B

CAD-320 Parametric Solid Modeling I (2)
Expands Pro/Engineer software skills learned in Parametric Model Division I. Emphasizes advanced software features typically encountered in the design of mechanical parts. Credits: 2, Hours: (1/2/0/0), Prereq: CAD-141; Arts & Sciences Elective Code: B

CAD-400 AutoCAD for Architecture (3)
Provides instruction in two- and three-dimensional architectural CAD drawing creation and editing, program customization, CAD standards, file manipulation/translation, and library creation/usage. Discusses basic computer hardware, software and operating systems. Credits: 3, Hours: (3/0/0/0), Prereq: CSC-110 or IND-155, CON-116 and ARC-300; Arts & Sciences Elective Code: B

CAD-805 CAD Projects (1-3)
Provides for individualized learning under guidance of an appropriate instructor. Application of advanced CAD techniques to a project relative to the student's specific career or field of study. Credits: 1-3, Hours: (0/2/0/0), Prereq: CAD-300 or CAD-400; Arts & Sciences Elective Code: B

CAD-928 Independent Study (1-3)
Provides readings, papers or projects relative to the individual guidance of a staff member. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

CHM: Chemistry

CHM-110 Introduction to Chemistry (3)
Introduces chemistry to those with little or no previous background in chemistry and is preparatory for further course work in chemistry including Intro to Organic & Biochemistry for Nursing students. The course includes a study of chemical structure and bonding, measurements, periodic table, nuclear chemistry, stereochemistry, chemical bonding, periodicity, and interrelationships in chemical reactions, and solution chemistry. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A; Comments: The lab is optional.

CHM-111 Introduction to Chemistry Laboratory (1)
Laboratory to accompany CHM-110. Credits: 1, Hours: (0/2/0/0), Coreq: CHM-110; Arts & Sciences Elective Code: A

CHM-322 Introduction to Organic and Biochemistry (4)
Introduces structure, nomenclature and reactions in organic chemistry as well as the study of life processes including carbohydrate, protein, lipid, nucleic acid metabolism and the interrelationship of these processes. Credits: 4, Hours: (3/0/0/0), Prereq: CHM-110; Arts & Sciences Elective Code: A; Comments: One year of high school chemistry recommended

CHM-365 General Chemistry I (4)
Studies the basic principles of inorganic chemistry with emphasis on such concepts as reactions and physical, chemical reactions and equations, stoichiometry, atomic structure and nuclear chemistry, periodicity, chemical bonding, kinetic molecular theory and gas laws, and the structure and properties of matter. Credits: 4, Hours: (3/2/0/0), Prereq: CHM-110, MAT-102, MAT-138 or MAT-708; Arts & Sciences Elective Code: A

CHM-175 General Chemistry II (4)
Studies colligative properties along with thermodynamics and kinetics, chemical equilibrium, electrochemistry, acids, bases and complex ions, and an introduction to organic chemistry. Credits: 4, Hours: (3/2/0/0), Prereq: CHM-165; Arts & Sciences Elective Code: A

CHM-262 Organic Chemistry I (4.5)
Introduces the theory and practice of organic chemistry with emphasis on the chemistry of functional groups. Areas stressed are nomenclature, stereochemistry, chemical bonding, reaction mechanisms, the characterization of hydrocarbons, alkyl halides and alcohols. The laboratory stresses development of appropriate organic chemistry techniques. Credits: 4.5, Hours: (3/3/0/0), Prereq: CHM-175; Arts & Sciences Elective Code: A

CHM-272 Organic Chemistry II (4.5)
Continues the study of ethers, aldehydes, ketones, carboxylic acids and their derivatives, amines and biologically important fats, proteins and carbohydrates. Stresses qualitative organic analysis and spectroscopic methods. Credits: 4.5, Hours: (3/3/0/0), Prereq: CHM-262; Arts & Sciences Elective Code: A

CHM-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean.

CHM-928 Independent Study (1-1.5)
Provides readings, papers and projects relative to the individual guidance of a staff member. Credits: 1-1.5, Hours: (0/2-3/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean.

CIS: Computer Information Systems

CIS-121 Introduction to Programming Logic (3)
Introduces students to basic computer programming ideas and foundational principles such as problem decomposition and step-wise refinement. Explores problem solving using well-developed programming logic derived from pseudo code, flow charts and related techniques. Focuses on translating student developed solutions into simple programs for testing using an instructor-selected, high-level programming or scripting language. Credits: 3, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

CIS-128 Programming Concepts (3)
Introduces computer programming, including the technical aspects of designing and coding computer programs to accomplish business objectives, and how this technology fits into companies’ overall information systems needs. Explores application software development and explains
basic programming logic structures, facilitating successful designing, coding and testing. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

CIS-135 Microcomputer Operating Systems (3)
Introduces and familiarizes students with a variety of PC-based operating systems. The systems include DOS, Windows, UNIX and LINUX. The respective strengths of the operating environments are reviewed, along with the approaches used in providing systems management and software development support capabilities. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

CIS-172 Java (4)
Provides an introduction to object-oriented program and design concepts using the Java programming language. Intended for students without previous object-oriented programming experience. The course covers methods, classes and objects with emphasis on modularity and code reusability. Students code, test, and debug simple applets and applications illustrating understanding of conditionals, iteration, array handling, event processing, string handling, and input-output. Credits: 4, Hours: (3/2/0/0), Prerequisite: CIS-121; Arts & Sciences Elective Code: A

CIS-176 Java II (4)
Continues Java. This course covers such topics as advanced GUI, exception handling, multithreading, multimedia, files and streams, networking and data structures. Credits: 4, Hours: (3/2/0/0), Prerequisite: minimum grade C- in CIS-172, and in either CIS-332 or CIS-307; Arts & Sciences Elective Code: A

CIS-181 Java III (3)
Provides practical application of server-side Java development. Emphasizes meeting business needs, through database integration, web and Internet services, servlets and Java server pages (JSP). Explores developing client software and web interfaces for mobile devices. Credits: 3, Hours: (2/2/0/0), Prerequisite: CIS-176; Arts & Sciences Elective Code: B

CIS-207 Fundamentals of Web Programming (3)
Presents hypertext markup language and cascading style sheets for encoding Web pages. Introduces Server Side Includes and simple JavaScript for enhancing them. Emphasizes a structured approach to page layout, coding and styling, exposing students to a variety of software tools. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

CIS-280 Client Side Scripting (3)
Covers practical Web client script programming in depth. Emphasizes JavaScript and DOM scripting, but other topics, including the use and modification of open-source scripts and script libraries, are also explored. Credits: 3, Hours: (2/2/0/0), Prerequisite: CIS-121 or CIS-128, CIS-332 or CIS-307; Arts & Sciences Elective Code: B

CIS-307 Introduction to Databases (3)
Introduces students to database concepts and different software applications used in database management. Covers the design of tables and forms for data entry in a relational database management system. Students maintain the data and design inquiries to produce information for decision making, data analysis and integration with other software applications. Credits: 3, Hours: (2/2/0/0), Prerequisite: CSC-110; Arts & Sciences Elective Code: A

CIS-332 Database and SQL (3)
Covers SQL programming and relational database design. Includes entity-relationship diagrams, table normalization and database documentation. Emphasizes writing simple and complex queries for a variety of tasks. Includes other topics related to T-SQL, replication, OLAP, creating and testing stored procedures, triggers, security, and tuning. Credits: 3, Hours: (2/2/0/0), Prerequisite: CIS-121; Arts & Sciences Elective Code: B

CIS-334 PHP/ Apache/ MySQL (3)
Introduces PHP, Apache and MySQL open source technologies used to create dynamic, database-driven Web applications. Students create MySQL databases and use server-side scripting language (PHP) to write applications that interact with the database through Apache Web server technology. Credits: 3, Hours: (2/2/0/0), Prerequisites: CIS-121 or CIS-128, CIS-332 or CIS-307; Arts & Sciences Elective Code: B

CIS-342 PHP/ Apache/ MySQL II (3)
Continues instruction on PHP programming language for building Web-based structure. Focuses on the object-oriented method of the PHP programming language as students create reusable assets and modular systems for use on a Web site project. Emphasizes SQL query knowledge and application. Develops knowledge of Apache Web server management through work with a local Apache server. Credits: 3, Hours: (2/2/0/0), Prerequisite: CIS-334; Arts & Sciences Elective Code: B

CIS-504 Structured Systems Analysis (3)
Covers the foundational aspects of system analysis and design, and the role of the systems analyst in a business information systems environment. Teaches the tools, techniques and methodologies used to analyze and design information systems and produce technical solutions for companies' information technology needs. Credits: 3, Hours: (2/2/0/0), Prerequisites: CIS-332 or CIS-307, CIS-172 or CIS-622; Arts & Sciences Elective Code: B

CIS-570 Introduction to iSeries eServer (2)
An overview of IBM application system/400 architecture and facilities. Topics include operating system concepts and introduction to control language, menu structure, system displays, creation and maintenance of logical and physical files, and data base organization and access. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

CIS-622 .NET Programming I (3)
Introduces the Microsoft .NET architecture, the common language runtime. Emphasizes building stand-alone and distributed desktop projects with graphical user interfaces using WinForm components. Focuses on applying the principles of programming and problem solving within an object-based design and event-driven paradigm. Includes interface design, using common libraries and features of the common language runtime. Credits: 3, Hours: (2/2/0/0), Prerequisite: CIS-121; Arts & Sciences Elective Code: B

CIS-624 .NET Programming II (3)
Extends students' knowledge of Microsoft .NET and related tools. Emphasizes the use of SQL and AD. NET for the creation of stand-alone and distributed database applications to solve common business problems. Covers issues related to n-tier design, network communications, error handling and the production of flexible database reports. Credits: 3, Hours: (2/2/0/0), Prerequisite: minimum grade C- in CIS-622, and in either CIS-332 or CIS-307; Arts & Sciences Elective Code: B

CIS-626 .NET Programming III (3)
Provides a practical introduction to Internet programming with Microsoft .NET. Emphasizes development of websites and web services with ASP.NET and related tools. Focuses on creating multi-tier business applications. Includes basic ASP.NET web controls and script integration, along with server-side issues such as authentication, state management and database connectivity. Credits: 3, Hours: (2/2/0/0), Prerequisite: CIS-624; Arts & Sciences Elective Code: B

CIS-802 Programming Capstone Project (3)
Requires application of knowledge gained from programming design and systems analysis classes in the analysis, design, scheduling and implementation of a complete systems development effort. This course should be taken in the student's final semester. Credits: 3, Hours: (2/2/0/0), Prerequisite: CIS-504, CIS-624; Arts & Sciences Elective Code: B

CIS-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

CIS-928 Independent Study (1-3)
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

CLS: Cultural Studies

CLS-125 Language and Society (3)
Introduces basic sociolinguistic principles. Practices methods for discovering and describing socially significant language behavior. Explores correlations between social and linguistic behavior. Analyzes the educational and political implications of sociolinguistic findings. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

CLS-140 Understanding Cultures: The Middle East (3)
Examines in a cross-cultural context the politics, economics, history, ethnic groups, religions and cultures of the Middle East from Morocco to Afghanistan and Pakistan. Includes study of all aspects of the Arab/Israeli conflict. Students also acquire an understanding of nationalism, tribalism and energy issues in a global context. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A
CLS-151 Understanding Cultures: Latin America (3)
Examines human spatial and cultural behavior in Latin America by exploring political, economic, religious and social institutions. Theoretical readings are balanced with case studies to enable students to explore theoretical perspectives in a cross-cultural context. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

CLS-159 Understanding Cultures: Indigenous Central America (3)
Explores the ethnographic, political, economic and historical contexts of contemporary indigenous life in Central America, with particular emphasis on the indigenous people of Guatemala and Mexico. While contemporary culture is the main focus of the course, students also explore the themes of continuity and change from pre-Hispanic times to the present. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

CLS-165 Understanding Cultures: Modern Japan (3)
Begins with a survey of Japanese history and culture to the Meiji Restoration of 1868. Emphasis is on the borrowing and blending of Chinese culture with Japanese culture, dating back to the Tang dynasty in China. Students focus on the Japanese adaptation to the challenges of modernization, with emphasis on accommodating industry and modern systems of government within a traditional Japanese cultural system. Issues include the relationship with China, World War II and the economic expansion of Japan from 1945 to the present. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

CLS-167 Understanding Cultures: Modern China (3)
Focuses on the 19th and 20th centuries, a period of confusion, violence and chaos, during which China has undergone a dramatic revolution. Compares how ancient China struggled to adopt the most useful practices of the western enlightenment while keeping its unique identity. Explores this struggle by examining geography, philosophy of Confucianism, and religious and political practices. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

CLS-171 Understanding Cultures: Sub-Saharan Africa (3)
Examines the geography, history, economics, social relations, health issues, urbanization, religion and literature of Sub-Saharan Africa. Considers the development of Africa prior to colonization, the impact of colonization, issues facing Africans since independence, and contemporary challenges and opportunities. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

CLS-180 American Pluralism (3)
Examines the pluralistic nature of American communities through a critical analysis of the history, literature and culture of one or more of the following cultural groups: African Americans, Asian Americans, European Americans, Hispanic Americans or Native Americans. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

CLS-192 Communication and Culture (3)
Examines the implications and impacts of various communication media, especially modern ones, on human culture and society. Using tools of historical and cultural studies, as well as the interpretive methods of the humanities, students will explore, for example, how new communication media affect interpersonal relations, self concept, democracy, experiences of space/time and human creativity. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

CLS-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Credits: 1; Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

COM: Communication

COM-222 Communication for Health Care Professionals (3)
Introduces the theories and skills used to analyze and understand communication variables affecting human relationships, such as personal perception, feedback, idea development and non-verbal cues. Builds competencies and skills relevant to interpersonal contexts within health care settings. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: B

COM-710 Basic Communications (3)
Provides an opportunity for students to improve English language skills. The principles of English grammar, punctuation and style are studied. Emphasis is placed on correct grammar usage, spelling, vocabulary and proofreading/editing skills for the office professional. Credits: 3; Hours: (3/0/0/0), Prereq: ENG-013; Arts & Sciences Elective Code: B

COM-723 Workplace Communications (3)
Emphasizes practical application of theories and principles to develop writing skills essential to encounters in contexts of occupational communication. Includes writing business letters, resumes, memos, instructional materials and reports, and using visual aids, taught through a blend of formal lectures and student participation. Offered for students enrolled in Applied Science and Technology programs. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: B

COM-744 Oral Communication in the Workplace (3)
Emphasizes the practical application of theories and principles to the development of presentation skills essential to communication encounters in contexts of occupational communications. Helps students become confident presenters by focusing on the preparation and delivery of various workplace presentations. Offered for students in Applied Science and Technology programs. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: B

COM-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Credits: 1; Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

CON: Construction

CON-116 Architectural Plans and Specs (2)
Introduces the skills and methods for understanding and interpreting construction drawings and technical specifications for residential and commercial buildings. Credits: 2; Hours: (1/2/0/0), Arts & Sciences Elective Code: B

CON-134 Surveying and Site Layout (2)
Provides class and laboratory activities to gain knowledge in the use of conventional and laser instruments, building site layout, site investigation, leveling, topographic maps and route surveying. Credits: 2; Hours: (1/2/0/0), Arts & Sciences Elective Code: B

CON-190 Residential Construction (3)
Provides introductory lab experience in tool and equipment use, basic residential construction procedures and safety for those with little or no construction experience. Includes foundation systems, floor systems, basic wall construction, roof systems, electrical layout and theory, heating and air handling basics, and plumbing systems. Credits: 3; Hours: (2/2/0/0), Arts & Sciences Elective Code: B

CON-227 Construction Project (3)
Focuses on teamwork and leadership by rotating students through being team members and crew leaders in building a construction project. Emphasizes productivity and supervisory tasks. Credits: 3; Hours: (0/6/0/0), Arts & Sciences Elective Code: B

CON-272 Commercial Construction (3)
Provides introductory lab experience in tool and equipment use, and basic commercial construction procedures. Focuses on safety and foundational elements in a variety of systems. Hands-on lab activities include foundations, floor and wall systems, concrete, masonry, plumbing, HVAC and electrical. Credits: 3; Hours: (2/2/0/0), Arts & Sciences Elective Code: B

CON-273 Carpentry Lab I (6)
Introduces the tools and terminology used in basic framing and gives students hands-on framing instruction. Focuses on frame walls, windows, doors and other standard structures. Emphasizes correct materials and methods. Credits: 6; Hours: (3/6/0/0), Arts & Sciences Elective Code: B

CON-274 Carpentry Lab II (8)
Continues Carpentry Lab I. Explores the uses of modern construction materials, correct tool usage, accuracy and techniques in a hands-on lab. Continues strengthening basic carpentry skills, then expands to incorporate layout, framing, concrete form building, complex roof structures, stair building, metal stud framing and basic interior trim. Credits: 8; Hours: (4/8/0/0), Prereq: CON-273; Arts & Sciences Elective Code: B

CON-275 Stone Concepts (2)
Provides introductory hands-on skills in the tools, preparation and application of the most commonly used stone products in this area, including Anamosa and Indiana Limestone as well as a variety of man-made stone and rubble. Students develop skills in handling, forming and laying all types of stone and in proper patterns. Included in this course is a historical overview of the an-
CON-312 Building Construction Systems II - Carpentry (2)
Continues the study of materials, methods and terminology used in modern construction. Focuses especially on mechanical, electrical, and plumbing systems and their coordination with other systems. Also studies the use of charts and tables to evaluate system requirements. Credits: 3, Hours: (3/0/0/0), Prereq: CON-311; Arts & Sciences Elective Code: B

CON-313 Building Construction Systems II (3)
Continues the study of materials, methods and terminology used in modern construction. Focuses especially on mechanical, electrical, and plumbing systems and their coordination with other systems. Also studies the use of charts and tables to evaluate system requirements. Credits: 3, Hours: (3/0/0/0), Prereq: CON-311 or EGR-460; Arts & Sciences Elective Code: B

CON-316 Sustainable Construction Science (3)
Provides an understanding of building science theory and applications in residential and commercial construction. Sustainable design issues such as climate, environment, durability, air and moisture transfer are discussed. Students apply knowledge to traditional building methods as well as newer technologies of construction. Students gain knowledge and resources beneficial to future certifications in LEED, Energy Star and many others. Credits: 3, Hours: (1/0/0/2), Prereq: CON-313; Arts & Sciences Elective Code: B

CON-321 Residential Estimating for Carpentry (2)
Introduces the basic principles and skills necessary to develop estimates for residential projects. Concentrates on calculating material and labor quantities. Introduces techniques for pricing. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: A

CON-322 Residential Estimating for Construction and Architecture (3)
Introduces the basic principles and skills necessary to develop estimates for residential projects. Concentrates on calculating material and labor quantities. Introduces techniques for pricing. Credits: 3, Hours: (2/2/0/0), Prereq: CON-116; Arts & Sciences Elective Code: B

CON-328 Construction Law and Ethics (3)
Introduces construction law and construction contract documents and their legal consequences on the owner, contractor, A/E and subcontractor with an emphasis on the AIA documents. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

CON-323 Light Commercial Estimating (3)
Introduces the basic principles and skills needed to develop a complete estimate for light commercial construction projects. Uses spreadsheets and interactive estimating software. Credits: 3, Hours: (3/0/0/0), Prereq: CON-322; Arts & Sciences Elective Code: A

CON-324 Commercial Estimating (3)
Introduces the basic principles and skills needed to develop a complete estimate for commercial construction projects. Uses spreadsheets and interactive estimating software. Credits: 3, Hours: (3/0/0/0), Prereq: CON-322; Arts & Sciences Elective Code: A

CON-330 Construction Capstone (3)
Provides the student an opportunity to complete a detailed estimate and develop a project up to the first day of construction. Students who successfully complete the third party standardized tests can be certified in Project Supervision by the National Center for Construction Education and Research. Credits: 3, Hours: (1/4/0/0), Prereq: CON-335; Arts & Sciences Elective Code: A

CON-331 Construction Materials Science (3)
Applies mathematical processes and formulas to perform complex calculations for loads, states of stress, forces, movement, levers, moment, stability and equilibrium as they apply to residential and commercial building design and construction practices. Credits: 3, Hours: (3/0/0/0), Prereq: CON-116, MAT-716; Arts & Sciences Elective Code: B; Comments: All first-year courses or permission of instructor

CON-335 Construction Planning and Scheduling (2)
Covers class and laboratory activities to control the flow of materials, manpower and equipment on a construction project, with a major emphasis on CPM schedule preparation and monitoring. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A; Comments: All first-year courses or permission of instructor

CON-355 Industrial Framing and Construction (3)
Covers job site/shop safety, construction guidelines and theory, print reading, footing layout and construction, floor systems, basic wall construction, and roof framing layout and calculations. Emphasizes concepts and theory through laboratory exercises and lecture. Credits: 3, Hours: (2/2/0/0), Prereq: MAT-233; Arts & Sciences Elective Code: B

CON-400 Construction Project Management (3)
Introduces the functions of project management in the construction industry. Studies the defining, planning, executing and closing phases of a project. Focuses on teamwork, leadership and problem solving. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

CON-410 Construction Modeling (3)
Introduces construction concepts through computerized model building. Explores various wall systems and the phases of the construction process. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

CON-924 Honors Project (1)
 Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

CRJ-928 Independent Study (1-3)
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permisson of instructor, dean

CRJ-932 Internship (1-6)
Provides full-time work in an approved, construction-related position that includes instructor visitations/evaluations and employer evaluations of performance. Students gain experience in planning and production monitoring. Credits: 1-6, Hours: (0/0/0/4), Arts & Sciences Elective Code: B; Comments: All first-year courses or permission of instructor

CRJ-100 Introduction to Criminal Justice (3)
Provides an overview of the American criminal justice system and examines the process of justice administration through the agencies of law enforcement, courts and corrections. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

CRJ-101 Ethics in Criminal Justice (3)
Examines the ethical considerations facing the criminal justice practitioner. Includes determining moral behavior, developing moral and ethical behavior, ethics and law enforcement, ethics and the courts, ethics and corrections, policy and management issues, professionalism, pride and ethics for practitioners. Credits: 3, Hours: (3/0/0/0), Prereq: CRJ-100; Arts & Sciences Elective Code: A

CRJ-110 Policing and Society (3)
Examines police as part of society's official control apparatus. A theory-based course which utilizes a multiple causation model to explain police issues, integrating six core elements: history, role, socialization, culture, function and experience. Students study police history, police role and organization, the making of a police officer, police behavior, stress, the delivery of effective police services and the future of law enforcement. Credits: 3, Hours: (3/0/0/0), Prereq: CRJ-100; Arts & Sciences Elective Code: A

CRJ-120 Introduction to Corrections (3)
Examines the history, theories and practices of penal institutions, both adult and juvenile. Additionally explores penal reform in relation to various objectives of modern penology. Credits: 3, Hours: (3/0/0/0), Prereq: CRJ-100; Arts & Sciences Elective Code: A

CRJ-130 Criminal Law (3)
Reviews the historical development of criminal law and the resulting philosophy of law that has developed. The law-making process, with the societal and political influences, is examined and discussed. Comparisons of common law with contemporary law are analyzed in an attempt to determine what impact historical events and societal changes have had in bringing about
Course Descriptions

CRR: Collision Repair/Refinishing

CRR-121 Introduction to Metalworking & Refinishing I (3)
Provides the beginning technician with an introduction to the collision repair industry. Introduces the student technician to shop, personal and environmental safety, and health issues related to automotive collision repair. Establishes procedures and techniques used in metalworking and refinishing, as well as shop equipment, hand and power tool usage. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

CRR-122 Introduction to Metalworking & Refinishing II (3)
 continues concepts learned in Introduction to Metalworking and Refinishing I. Covers metal straightening theory and procedures, body fillers and applications, surface preparation, application of undercoat and topcoat refinishing materials, and accessing vehicle specific information. Credits: 3, Hours: (1/4/0/0), Prereq: CRR-121; Arts & Sciences Elective Code: B

CRR-342 Metalworking II (4)
Continues Metalworking I with students working in the lab on actual autos. Covers most work situations found in auto body repair shops. Credits: 4, Hours: (0.5/7/0/0), Prereq: CRR-820; Arts & Sciences Elective Code: B

CRR-344 Metalworking III (4)
Continues Metalworking II with students working in the lab on actual autos. Covers most work situations found in auto body repair shops. Credits: 4, Hours: (1/6/0/0), Prereq: CRR-342; Arts & Sciences Elective Code: B

CRR-545 Body Straightening and Painting (7)
Emphasizes quality of work and speed of repair. Students learn estimating and total auto rebuilding using frame-straightening equipment. Provides an overview of glass and trim replacement and also the relationship between body and frame components. Introduces spot matching techniques and spraying complete autos. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

CRR-820 Metalworking and Refinishing Practices (3)
Covers general body construction along with body alignment and general metal techniques with emphasis on use of body fill material. Provides an overview of glass and trim replacement and also the relationship between body and frame components. The course also covers spot painting and matching techniques in addition to spraying complete autos. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

CRR-830 Metalworking and Refinishing I (3)
Continues CRR-820. Lab activities cover general body construction along with body alignment and metal techniques on the use of fill material. Covers an in-depth analysis of glass and trim replacement and the relationship between body and frame components. The course also covers spot painting and matching techniques in addition to spraying complete autos. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

CRR-833 Refinishing II (3)
Continues Metalworking and Refinishing I with an emphasis on working with actual autos. Students practice additional spot painting and matching techniques as well as spraying complete autos. Credits: 3, Hours: (0.5/5/0/0), Prereq: CRR-830; Arts & Sciences Elective Code: B

CRR-837 Refinishing III (3)
Continues Refinishing II with an emphasis on the finer points of refinishing. Students develop skills in two-tones, tape stripping, blemish troubleshoot-ing, blending, matching, touch-ups and professional quality gun handling. Credits: 3, Hours: (1/4/0/0), Prereq: CRR-833; Arts & Sciences Elective Code: B

CSC: Computer Science

CSC-110 Introduction to Computers (3)
Familiarizes the student with business, personal and industrial uses of microcomputers. Broad-based overview of microcomputer topics is
presented; concepts of storage media, file organization and data representation are also presented. The fundamentals of computer problem solving and programming are discussed. Credits: 3, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

CSC-142 Computer Science (4) Introduces computer programming including data types, expressions, input/output, control structures, functional and object-oriented programming, and simple data structures. The course emphasizes problem-solving skills through program refinement, documentation and programming style. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-102 or MAT-708; Arts & Sciences Elective Code: A

CSC-153 Data Structures (4) Continues the study of program design and construction begun in CSC-142. The course emphasizes topics in data structures and practice in their specification, design, implementation and use. Topics include container classes, arrays, lists, stacks, queues, trees, graphs, algorithm analysis, object-oriented programming, data abstraction, and searching and sorting techniques. Credits: 4, Hours: (4/0/0/0), Prereq: CSC-142 or DIS-176; Arts & Sciences Elective Code: A

CSC-160 Software Design and Development (4) Building on the foundation of basic programming skills acquired in CSC-142, this course emphasizes the design and development of software systems. Topics include user interface programming, graphics and multimedia, networking and concurrency. Long-term projects provide students with experience developing software over an extended time period. Students also gain a general understanding of computer and system organization. Credits: 4, Hours: (4/0/0/0), Prereq: CSC-142; Arts & Sciences Elective Code: A

CSC-175 Computer Organization and Assembly Language Programming (4) Emphasizes the organization and operation of computer systems at the assembly-language level. The mapping of statements and constructs in a high-level language onto sequences of machine instructions is studied, as well as the internal representation of simple data types and structures. Programming practice with an assembly language provides practical application of concepts presented in class. Credits: 4, Hours: (4/0/0/0), Prereq: CSC-142; Arts & Sciences Elective Code: A

CSC-924 Honors Project (1) Allows qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

DAN: Dance

DAN-110 Fundamentals of Modern Dance (1.5) Introduces basic modern dance technique and choreography. Students practice standard movements, and locomotor patterns are introduced to creative concepts. May be repeated for credit. Credits: 1.5, Hours: (0/3/0/0), Arts & Sciences Elective Code: A

DAN-120 Fundamentals of Jazz Dance (1.5) Develops modern jazz dance technique and choreography. Students are introduced to the history and concepts of the jazz idiom and practice standard and creative jazz movements and locomotor patterns. May be repeated for credit. Credits: 1.5, Hours: (0/3/0/0), Arts & Sciences Elective Code: A

DAN-130 Ballet (1.5) Introduces classical ballet technique. Students explore the basic history of ballet. Additionally, students learn the principles and terminology of ballet while striving for a kinesthetic understanding of the art form. May be repeated for credit. Credits: 1.5, Hours: (0/3/0/0), Arts & Sciences Elective Code: A

DAN-928 Independent Study (1.5) Allows students to continue to develop abilities in modern and/or jazz dance technique. May be taken more than once. Credits: 1.5, Hours: (0/3/0/0), Prereq: DAN-110 and/or DAN-120; Arts & Sciences Elective Code: A

DEA: Dental Assistant

DEA-285 Oral Pathology for Dental Assisting (1) Introduction to the general principles of pathobiology. Emphasis is on the specifics of disease entities of local and systemic origin to enable interpretation by the dental auxiliary of the medical and dental history with emphasis on specifics of oral pathology. Terminology is a focus, with descriptions of oral lesions and their treatment. Credits: 1, Hours: (1/0/0/0), Coreq: DEN-120, DEN-130; Arts & Sciences Elective Code: B

DEA-403 Dental Materials (3) Introduces students to materials utilized in the dental field. Includes handling and preparation of specific materials. Prepares students for clinical procedures. Combines the science of the basic dental materials with manipulative practice. Credits: 3, Hours: (1.5/3/0/0), Arts & Sciences Elective Code: B

DEA-517 Dental Assisting I (1.5) Learn basic principles of dental assisting including fundamental chair-side concepts and techniques, team delivery systems, and intra-oral skills. Credits: 3.5, Hours: (2/3/0/0), Coreq: DEA-404, DEN-100, DEN-120, DEN-130, HSC-107, HSC-210; Arts & Sciences Elective Code: B

DEA-518 Dental Assisting II (1.5) Learn principles of dental assisting with focus on intra-oral skill attainment, sterilization processes and pharmacology. Credits: 1.5, Hours: (1/1/0/0), Prereq: DEA-517; Coreq: DEN-200; Arts & Sciences Elective Code: B

DEA-519 Dental Assisting III (1.5) Learn principles of dental assisting with a focus on expanded functions, occlusal registrations, gingival retraction, final impressions, temporary restorations, cavity liners, bases, desensitizing agents and bonding. Credits: 1.5, Hours: (0.5/2/0/0), Prereq: DEA-518; Arts & Sciences Elective Code: B

DEA-580 Dental Assisting Clinic I (4) Acquire technical skills from clinical experiences by applying theoretical concepts in general and specialty dentistry areas at the University of Iowa College of Dentistry, Veterans Medical Center in Iowa City, and in private dental office settings. Credits: 4, Hours: (0.5/0/10.5/0), Prereq: DEA-403, DEA-517, DEN-100, DEN-110, DEN-120, DEN-200, HSC-107, HSC-210; Coreq: DEN-200; Arts & Sciences Elective Code: B

DEA-581 Dental Assisting Clinic II (4.5) Comprehensive application of dental assisting skills in the private dental office setting. Credits: 4.5, Hours: (1/0/10.5/0), Prereq: DEA-580, DEN-200; Arts & Sciences Elective Code: B

DEA-610 Specialty Dentistry (4.5) Presents the specialty areas of dentistry including: endodontics, periodontics, orthodontics, oral surgery, pediatric dentistry and geriatric dentistry. Includes procedures, instruments and current concepts for assisting in these areas. Includes expanded functions: dry socket medication, periodontal dressings and pulp vitality testing. Also includes psychological considerations in dentistry. Credits: 4.5, Hours: (4/1/0/0), Prereq: DEA-517, DEN-100, DEN-110, DEN-120; Arts & Sciences Elective Code: B

DEA-702 Dental Office Procedures (2) Learn dental office related functions including: computer operations, telephone, recall systems, resumes, supply inventory, filing, record keeping, financial arrangements, patient accounts, credit and collection, banking, salaries, tax forms, patient correspondence, and legal and ethical conduct. Credits: 2, Hours: (2/0/0/0), Prereq: DEN-100, DEN-120; Arts & Sciences Elective Code: B

DEN: Dental

DEN-100 Fundamentals of Dentistry (3.5) Provides the foundations of knowledge necessary to begin a study in the dental field. Introduction to instrumentation, dental specialties and special needs patients are discussed. Introductory oral hygiene instruction and basic radiography are provided. Credits: 3.5, Hours: (2/3/0/0), Coreq: HSC-107, HSC-210, DEN-120, DEN-130; Arts & Sciences Elective Code: B

DEN-110 Dental Terminology (2) Enlists a comprehensive study of dental terminology for dental program preparation, career entry or review. Explains the composition of dental terms by exploring prefix, root combination and suffix divisions. Discusses common dental procedures, practices and disease processes. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

DEN-120 Dental Anatomy (3) Introduces students to basics of embryology, histology, terms and anatomy of the oral cavity including a detailed study of crown and root morphology of both primary and permanent dentition. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

DEN-130 Head and Neck Anatomy (1.5) Utilizes a systems approach to the gross anatomy of the head and neck with emphasis on the maxilla, mandible, oral tissues, neuromuscular and
circulatory function, supporting structures and the temporomandibular joint. Credits: 1.5, Hours: (1/1/0/0), Arts & Sciences Elective Code: B

DEN-200 Preventive Dentistry (2) Provides an introduction to dental disease, the causes and methods for prevention. An intense focus on dental caries and preliminary information on periodontal disease. Students learn to utilize patient assessment techniques and provide oral health information. Credits: 2, Hours: (1.5/1/0/0), Coreq: DEN-110, DEN-130; Arts & Sciences Elective Code: B

DEN-220 Dental Nutrition (1) Study of the role of diet upon oral structures and application of the role of dietary analysis to the treatment plan of a dental patient. Emphasis is placed on analysis of the complete diet and preventive recommendations. Credits: 1, Hours: (1/0/0/0), Prereq: DEN-110, DEN-120, Coreq: DEN-200; Arts & Sciences Elective Code: B

DEN-300 Dental Radiography (3) Provides students with principles and techniques of dental radiography. Students receive practical experience on manikins and selected patients. Credits: 3, Hours: (2/2/0/0), Prereq: DEN-100, DEN-110, DEN-200; Arts & Sciences Elective Code: B

DHY: Dental Hygiene

DHY-134 Therapeutics and Pain Control (2) Provides students with knowledge of chemotherapeutics used in dentistry and the mechanisms of drugs in the body. Students are then able to understand manifestations of drug administration in dental treatment. Credits: 2, Hours: (2/0/0/0), Prereq: DHY-285; Arts & Sciences Elective Code: B

DHY-140 General and Oral Pathology (2) An introduction to the general principles of pathology for dental hygiene students with emphasis on specifics of oral pathology; building upon and applying biomedical science knowledge to the diagnosis and treatment of oral and maxillofacial diseases. Terminology is a main focus throughout the course. Credits: 2, Hours: (2/0/0/0), Prereq: DEN-120, DEN-130; Coreq: DEN-300, DHY-186; Arts & Sciences Elective Code: B

DHY-173 Dental Hygiene I (4) Provides an introduction to the clinical portion of the dental profession. Emphasis is on skills necessary for preliminary patient care including health histories, basic instrumentation, and legal and ethical issues. Manikin and patient practice are utilized. Credits: 4, Hours: (2/0/6/0), Arts & Sciences Elective Code: B

DHY-186 Dental Hygiene II (4) Provides experience in the application of dental hygiene techniques on a variety of patients in a clinical setting. Clinical experience includes oral prophylaxis, fluoride therapy and oral physiotherapy. Didactic training encompasses new clinical skills, assessment, treatment planning and effective communication skills. Credits: 4, Hours: (2/0/6/0), Prereq: DHY-173; Arts & Sciences Elective Code: B

DHY-211 Periodontology (2) Introduction to the aspects of periodontal disease, the disease process and management of periodontal patients. Emphasis is placed on periodontal instrument techniques and surgery as performed by the dentist. Credits: 2, Hours: (2/0/0/0), Prereq: DEN-120, DEN-200; Arts & Sciences Elective Code: B

DHY-220 Dental Materials (1) Introduces students to materials utilized in the dental field. Includes handling and preparation of specific materials. Prepares students for clinical procedures to be performed on patients. Credits: 1, Hours: (1.5/1/0/0), Prereq: DEN-100, DEN-120; Arts & Sciences Elective Code: B

DHY-250 Community Dental Health (1.5) Provides concepts of health education and promotion, community dental health, and public health dentistry with an emphasis on assessment, planning, implementation and evaluation of community oral health promotion. Credits: 1.5, Hours: (1/1/0/0), Prereq: DEN-100, DEN-200, DHY-285; Arts & Sciences Elective Code: B

DHY-274 Local Anesthesia for the Dental Hygienist (1.5) Learn basic concepts for safe and effective administration of local anesthesia, including hands-on preparation in techniques used in the practice of administering local anesthesia. Credits: 1.5, Hours: (0.5/2/0/0), Prereq: DEN-120, DEN-130; Arts & Sciences Elective Code: B

DHY-285 Dental Hygiene III (3) Emphasis on treatment of patients with moderate dental disease, continued application of diagnostic information and treatment planning by student. Credits: 3, Hours: (1/0/6/0), Prereq: DHY-186; Arts & Sciences Elective Code: B

DHY-296 Dental Hygiene IV (5) Provides continued development of oral prophylaxis skills. Emphasis is placed on accessory treatment, outside of a routine prophylactic appointment, and on aided scaling procedures. Credits: 5, Hours: (1/0/12/0), Prereq: DHY-285; Arts & Sciences Elective Code: B

DHY-306 Dental Hygiene V (5) Prepares students for transition to practice. Board preparation material, credentialing, advanced instrumentation and accessory procedure techniques are taught. Current trends in the dental field are discussed. Credits: 5, Hours: (1/0/12/0), Prereq: DHY-296; Arts & Sciences Elective Code: B

DHY-910 Dental Hygiene Clinical Enrichment (1) Provides focused reinforcement in the clinical portion of the dental hygiene profession, with emphasis placed on skills necessary for patient care. Content includes basic instrumentation and instruction in radiographic techniques. Manikin and patient practice are utilized for learning experience. Successful completion of this course fulfills the requirement to re-enter the second year of the Dental hygiene program at Kirkwood or the remediation requirement for a clinical board examination. Credits: 1, Hours: (0/0/3/0), Prereq: DHY-173, DHY-186; Arts & Sciences Elective Code: B

DLT: Dental Lab Technology

DLT-152 DLT Oral Anatomy (1) Study of the anatomical and physiological features, structures and function of the human head that must be considered in the fabrication of dental prostheses. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

DLT-156 Dental Anatomy Lab (2) Includes waxing of dental tooth surfaces on a stone cast that introduces the basic concepts of occlusion. Credits: 2, Hours: (0/4/0/0), Coreq: DEN-120; Arts & Sciences Elective Code: B

DLT-250 Foundation of Dental Technology (3) Orient the student to dental technology including infection control, equipment operation, and health and safety. Applies numerous physicochemical principles to the study and manipulation of basic dental materials. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

DLT-251 Introduction to Dentures (5) Introduction to the fabrication of complete dentures including procedures, equipment and the materials required to replace natural dentition and the associated structures of the maxilla and mandible. Also includes complete denture repairing, relining and rebasing. Credits: 5, Hours: (2/6/0/0), Coreq: DEN-120, DLT-152, DLT-156, DLT-250, DLT-565; Arts & Sciences Elective Code: B

DLT-253 Introduction to Partial Dentures (5) Applies the basic principles for removable partial denture framework fabrication including classification, components, surveying, designing, waxing, investing, casting and finishing. Credits: 5, Hours: (2/6/0/0), Prereq: DLT-152, DLT-251, DLT-565; Arts & Sciences Elective Code: B

DLT-254 Introduction to Crown and Bridge (5) Applies techniques of model preparation, articulation and laboratory procedures for construction of full-cast crowns, inlays and bridges. Credits: 5, Hours: (2/6/0/0), Prereq: DEN-120, DLT-152, DLT-156, DLT-250; Coreq: DLT-565; Arts & Sciences Elective Code: B

DLT-350 Fixed Dental Prosthodontics (5) Advanced fabrication of ceramics and crown/bridge prosthesis to include, but not limited to, multiple unit bridges, acid etch, post and core using porcelain systems to match natural dentition. Credits: 5, Hours: (2/6/0/0), Prereq: DLT-254, DLT-456; Arts & Sciences Elective Code: B

DLT-351 Removable Dental Prosthodontics (5) Advanced fabrication of complete dentures and partial prosthesis to include intra-oral gothic arch tracings, articulation of teeth in bilateral balanced occlusion, immediate dentures, characterististics and staining techniques, identification in denture bases and fluid resins. Credits: 5, Hours: (2/6/0/0), Prereq: DLT-251, DLT-253; Arts & Sciences Elective Code: B

DLT-353 Dental Technology Industry (2) Presents ethical, legal and historical aspects of dentistry and dental laboratory technology, Fo-
focuses on basic day-to-day management of a dental laboratory and human relations from a supervisor’s point of view. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

DLT-355 Digital Dentistry (2)
Introduces the theory and practice of fabricating dental prosthetics digitally. Explores the theoretical study of CAD/CAM systems as it pertains to open and closed architecture, material selection and the fabrication of natural prostheses. Credits: 2, Hours: (1/2/0/0), Prereq: DLT-254, DLT-445; Coreq: DLT-456; Arts & Sciences Elective Code: B

DLT-445 Orthodontics (3)
Identifies malocclusion classifications and incorporates the study of orthodontic materials and use of equipment into the fabrication of basic orthodontic appliances. Credits: 3, Hours: (1/4/0/0), Prereq: DEN-120, DLT-152, DLT-156, DLT-250, Coreq: DLT-565; Arts & Sciences Elective Code: B

DLT-450 Advanced Orthodontics (8)
Comprehensive application of orthodontic and pedodontic appliance fabrication. Emphasizes quality, productivity, specific techniques and procedures, and the ability to interpret work authorizations. Students gain practical experience in a commercial dental laboratory. Credits: 8, Hours: (2/0/18/0), Prereq: DLT-445; Arts & Sciences Elective Code: B

DLT-451 Advanced Fixed Dental Prosthodontics (12)
Comprehensive application of porcelain and crown/bridge prosthetics to include, but not limited to, stress-breaker, telescopic, and laminates using techniques and modifications of porcelain systems to match natural dentition in a variety of situations. Students gain practical experience in a commercial dental laboratory. Credits: 12, Hours: (2/4/24/0), Prereq: DLT-350; Arts & Sciences Elective Code: B

DLT-452 Adv Removable Dental Prosthodontics (12)
Comprehensive application of complete and partial prostheses. Includes overdentures, lingualized occlusion, biomechanical design principles, specific concepts, stress equalizers, quality and productivity improvement and work authorization interpretation. Students gain practical experience in a commercial dental laboratory. Credits: 12, Hours: (2/4/24/0), Prereq: DLT-351; Arts & Sciences Elective Code: B

DLT-456 Introduction to Ceramics (5)
Fabrication of porcelain fused to metal prostheses to include framework design considerations, porcelain characteristics and limitations, equipment and materials required to replace natural dentition. Credits: 5, Hours: (2/2/4/0), Prereq: DLT-254; Arts & Sciences Elective Code: B

DLT-565 Occlusion (2)
In-depth study of the principles of occlusion and their application to fabrication of dental prostheses. Credits: 2, Hours: (1/2/0/0), Coreq: DEN-120, DLT-152; Arts & Sciences Elective Code: B

DLT-851 DLT Clinic I (1)
Assigns each student to clinical areas to gain practical experience relating to instructional and manipulative skills provided in the classroom. Credits: 1, Hours: (0/0/3/0), Prereq: DLT-251, DLT-253, DLT-254, DLT-456; Arts & Sciences Elective Code: B

DRA: Film And Theatre

DRA-101 Introduction to Theatre (3)
Requires no previous experience. Introduces the student to the roles of actor, director, designer, playwright and critic, and provides a brief history of the art. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

DRA-116 Film Analysis (3)
Focuses on the methods and technologies of film art. The emphasis is on analysis of classic narrative films. Subjects for analysis include narrative structure, segmentation, shot-by-shot breakdown, elements of mise-en-scène and montage, auteurs, genres, production considerations, and conventions. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

DRA-117 Film Topics (3)
Offers in-depth study of various topics in film studies. Some topics offered are the study of genre theory, specific genres, film adaptation of literature and drama, moral themes and documentary film. All film topics will study the relationship between the topic and culture, identify operating principles and relevant contextual forces, and apply these concepts to the study of specific films. Course may be repeated for credit. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

DRA-125 Introduction to Play Analysis (3)
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 gain an understanding of the important role that dramatic analysis plays when mounting a performance in the theatre. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

DRA-130 Acting I (3)
Introduces basic acting techniques with emphasis on improvisation, concentration and self-analysis. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

DRA-132 Acting II (3)
Continues training in basic acting techniques with emphasis on creating characters in scripted scenes. Students present individual and group scenes. Credits: 3, Hours: (3/0/0/0), Prereq: DRA-130; Arts & Sciences Elective Code: A

DRA-162 Technical Theatre (3)
Provides information on and experience with the materials, tools, equipment, and techniques of manual drafting, scenery construction and painting, stage lighting, costuming, and make-up. Hands-on experience with each of the areas of study is emphasized. Students are required to work on the technical aspects for one Kirkwood production. The course is designed to produce students who have a working knowledge of the basic techniques of producing a live performance. The course is open to all students. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

DRA-172 Technical Theatre Lab (1)
Provides students credit for work as technicians in one Kirkwood production. A minimum of 24 hours of practical work is required for a passing grade. May be repeated up to six times. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

DRA-200 Introduction to Design for the Theatre (3)
Introduces the language and process of design as applied to theatre. Explores studio applications of elements and principles of design to theatre-specific rendering techniques and design projects. Credits: 3, Hours: (2/2/0/0), Prereq: DRA-162; Arts & Sciences Elective Code: A

DRA-230 Acting Lab (1)
Provides students credit for work as actors in one Kirkwood production. A minimum of 24 hours of practical work is required for a passing grade. May be repeated up to six times. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

DRA-288 Independent Study (1-3)
Allows the student to do readings, papers, research and/or production work under the guidance of a theatre faculty member. Independent study contract required. Credits: 1-3, Hours: (0/2-6/0/0), Arts & Sciences Elective Code: A

DRF: Drafting

DRF-141 Engineering Drawings (2)
Introduces the fundamentals of drafting such as lettering, line quality, orthographic projection, isometric drawing, detail drawing, basic plan drawing, dimensioning and scale reading. Students are familiarized with the tools and techniques of the trade. Emphasis is on developing accuracy, line quality, graphic ability and lettering control. The different assignments focus on skills required in the profession. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

DRF-142 Engineering Design I (3)
Allows students to gain an understanding of drawing mechanical parts used in design. Problem-solving approach is used to work out problems on the drafting board, resulting in a final drawing. Topics selected are: instrument instruction, lettering, geometric construction, sketching, multi-view projection, sectional views, calculating weight of a mechanical part, auxiliary views, isometrics, obliques, weld symbols, threads and fasteners, dimensioning and tolerancing. Credits: 3, Hours: (2/2/0/0), Prereq: DRF-141; Arts & Sciences Elective Code: B

DRF-143 Engineering Design II (3)
Introduces the student to special topics in drafting: gears, structural drawing, pipe drawing. A major portion of the semester involves doing an engineering project. The project requires assembly drawings, weld complete, details, bill of materials and weight calculations. This project requires a comprehensive review of the drafting course. Students are also required to do work on the computer. Credits: 3, Hours: (2/2/0/0), Prereq: CAD-300, DRF-141; Coreq: CAD-140; Arts & Sciences Elective Code: B
DSL: Diesel

DSL-143 Fundamentals of Electricity (3)
Covers introduction to electricity, i.e. voltage, amperage and resistance with emphasis on Ohm's Law and its practical application. Meter fundamentals are covered. Series, parallel and series-parallel circuits are studied. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

DSL-156 Truck Electronics (3)
Continues the basic electrical coverage of DSL-143 with an additional emphasis on the types of electrical circuits and subassemblies found in most trucks. Students learn interior and exterior lighting, steering column, dash, wiper motors, temperature controls, power locks and windows, and on-board computers. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

DSL-308 Cooling Systems (2)
Introduces the student to truck cooling systems. The principles of cooling systems and the standard components of cooling systems are examined. Testing and servicing of cooling systems from a truck perspective are explained. Credits: 2, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

DSL-345 Truck Engines (3)
Covers the introduction to diesel engines commonly used in the trucking industry. The design of engine components and subassemblies is examined with emphasis on the reasons certain design features are used. Correct procedures for testing and servicing truck engines are explained and demonstrated. Credits: 3, Hours: (2/2/0/0), Prereq: DSL-355; Arts & Sciences Elective Code: B

DSL-355 Fundamentals of Internal Combustion Engines (3)
Covers fundamentals of two- and four-stroke engine operation, servicing and adjustment. Learning activities concentrate on proper disassembly, measuring and reassembly of actual engines. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

DSL-424 EFI Engine Systems (4)
Provides a thorough explanation and hands-on experience in the theory, operation, diagnosis, maintenance and repair of electronic fuel injected diesel engines. Learning activities include the use of testing equipment used to diagnose EFI engines. Lab activities are designed to reinforce the understanding of the operation and maintenance of these systems. Credits: 4, Hours: (2/4/0/0), Prereq: DSL-143, DSL-345, DSL-355; Arts & Sciences Elective Code: B

DSL-543 Truck Clutches (3)
Introduces students to the testing and servicing of clutches found on most trucks. Learning activities include examining, servicing and replacement of clutches. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

DSL-630 Air Brakes and ABS (2)
Covers a basic introduction to air brakes and anti-locking braking systems. Learning activities concentrate on theory, operation, diagnosis, maintenance, and repair of air and anti-lock brakes found on diesel trucks. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

DSL-642 Steering and Suspension (2)
Includes theory and operation of steering components and servicing. Students learn theory and operation of air ride and spring suspension components on light and heavy duty trucks. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

DSL-802 Trailer Servicing (3)
Involves servicing and minor repair to semi trailer and truck trailers. Learning activities include electrical, power train, brakes, air conditioning and tune-up. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B; Comments: Completion of first-year technical courses.

ECE: Early Childhood Education

ECE-103 Introduction to Early Childhood Education (3)
Gives students a historical and philosophical foundation of the field of early childhood education. Includes an overview of assessment and evidence-based practices. Addresses the influences of family centered practice, inclusion, culture and language. Explores early childhood careers. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

ECE-133 Child Health, Safety and Nutrition (3)
Focuses on evidence-based concepts in the fields of health, safety and nutrition and their relationship to the growth and development of the young child ages birth to eight. Blends current theory with problem solving, practical applications and assessments. Includes collaboration with families and assesses the role of culture, language and ability on health, safety and nutrition decisions in early childhood settings. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

ECE-158 Early Childhood Curriculum I (3)
Focuses on the development, implementation and assessment of appropriate environments and curricula for young children ages three through eight. Prepares students to utilize evidence-based, developmentally appropriate practices in the context of children's culture, language and abilities. Emphasizes understanding children's developmental stages and developing appropriate learning opportunities, interactions and environments to support each child in the following areas: literature, dramatic play, art, music, fine and gross motor play. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

ECE-170 Child Growth and Development (3)
Reviews typical and atypical development of children from conception to adolescence in all developmental domains. Examines interactions between child, family and society within a variety of community and cultural contexts and how each impacts the developing child. Examines theories and evidence-based practices associated with understanding and supporting children. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

ECE-221 Infant/Toddler Care and Education (3)
Focuses on care, education and assessment of children from birth to thirty-six months. Prepares students to utilize developmentally appropriate evidence-based practices including responsive caregiving, routines as curriculum, collaborative relationships with culturally, linguistically, and ability diverse children and families, and a focus on the whole child in inclusive settings. Credits: 3, Hours: (3/0/0/0), Prereq: ECE-170 or PSY-121; Arts & Sciences Elective Code: A

ECE-243 Early Childhood Guidance (3)
Focuses on developmentally appropriate evidence-based approaches and positive guidance strategies for supporting the development of each child. Emphasizes supportive interactions and developmentally appropriate environments. Uses assessment to analyze and guide behaviors. Studies impact of families, and each child's culture, language and ability on child guidance. Credits: 3, Hours: (3/0/0/0), Prereq: ECE-170 or PSY-121; Arts & Sciences Elective Code: A

ECE-262 Early Childhood Field Experience (3)
Supervised experience* in selected early childhood settings serving children ages birth through eight. Includes integration of theory, and developmentally appropriate evidence-based practice. Provides an understanding working with culturally, linguistically and ability diverse young children and families. Emphasizes professional relationships and behavior, appropriate adult/child interactions, basic curriculum planning and program routines. Credits: 3, Hours: (1/0/6/0), Prereq: ECE-103, ECE-158, ECE-170; Arts & Sciences Elective Code: A; Comments: *Requires a minimum of 108 hours of direct work with children

ECE-290 Early Childhood Program Administration (3)
Addresses the function common to administering quality child care programs, planning, implementation, operating and evaluating. Aspects covered include director responsibilities; policy setting; development; staff, fiscal and facility management; parent involvement; and marketing. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A; Comments: Experience in child care setting, Early Childhood curriculum courses preferred

ECE-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of an honors faculty member. Requires completion of an honors project learning contract. May be taken more than once. Credits: 1,
ECN: Economics

ECN-120 Principles of Macroeconomics (3) Introduces principles of the economizing problem with emphasis on national income and employment analysis. Includes national income accounting, the business cycle, money and banking, fiscal and monetary policy, and economic growth. Recommended for students pursuing a baccalaureate degree. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

ECN-130 Principles of Microeconomics (3) Emphasizes markets, the price system and the allocation of resources, demand and supply, market structures, price and output determination, and income distribution. Recommended for students pursuing a baccalaureate degree. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

ECN-924 Honors Project (1) Allows a qualified honors student to pursue a special concentration of study under the guidance of an honors faculty member. Requires completion of an honors project learning contract. May be taken more than once. Credits: 1; Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

ECN-928 Independent Study (1) Provides readings, papers or basic research or other projects under the individual guidance of a staff member. Credits: 1; Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

EDU: Education

EDU-110 Exploring Teaching (3) Introduces the concerns and activities of beginning teachers. The focus is on developing generic teaching skills applicable from preschool through high school. Microteaching is used to simulate actual teaching situations. Case studies are used to discuss common teaching problems. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

EDU-119 Behavior Management (3) Develops skills of observation and management of the behavior of others individually and in groups. Students develop strategies for helping others to manage their own behavior. This course meets part of the requirement for the Iowa Paraeducator Generalist Certification. May be repeated one time with permission of the instructor. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

EDU-129 Inclusion and Adaptation (3) Develops the skills to facilitate the mainstreaming of students with disabilities and work with gifted and talented students in school settings. Students taking the course learn strategies for instructing diverse groups of learners and adapting curriculum and materials. The course includes an overview of the special education system and the evolving relationship with regular education. Issues related to adults with disabilities are discussed. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

EDU-200 Topics in Education (1) Provides an opportunity for students to study a current issue in education. Topics are selected from the following categories: teaching methods, learning theory, motivation and professionalism. Credits: 1; Hours: (1/0/0/0), Arts & Sciences Elective Code: A

EDU-212 Educational Foundations (3) Examines the impact of social policies on the public education system. Introduces the history and philosophy of education. Students examine current beliefs about education and its effectiveness. Controversial issues are discussed and debated. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

EDU-240 Educational Psychology (3) Applies psychological concepts to the field of education. Major focus is on cognitive, behavioral and humanistic theories. Areas of emphasis include child and adolescent development, learning theory, memory, motivation, intelligence, instruction and measurement. Credits: 3; Hours: (3/0/0/0), Prereq: PSY-111; Arts & Sciences Elective Code: A

EDU-248 Exceptional Persons (3) Studies the educational, cultural, and social aspects of children and adults who are exceptional in the context of mental, emotional and physical development. Includes discussion of gifted and talented children in schools. Credits: 3; Hours: (3/0/0/0), Prereq: PSY-111; Arts & Sciences Elective Code: A

EDU-249 Cultural and Linguistic Diversity (3) Prepares staff to work with culturally and linguistically diverse children, including English language learners, those with language disorders, deaf and hard of hearing students. Includes use of technology, instructional methodology, appropriate translation and interpretation procedures, and communication with team members. Participates work collaboratively and individually to develop projects. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

EDU-259 Vision Impairment Support (3) Addresses competencies for state paraeducator certification in Level II Vision Impairment Area of Concentration. Prepares paraeducators to support children with vision impairments or blindness, including those with additional disabilities. Studies roles and responsibilities of the paraeducator in understanding the expanded core curriculum and how to integrate support of these skills into the instructional day, how to ensure student access to the core curriculum, strategies to promote independence and self-determination, and professional and ethical guidelines. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

EDU-279 Transition Services (3) Studies the role of the paraeducator and job coach in assisting teachers in preparing students who receive special education services for the transition from K-12 education to adult life. Studies the continuum of K-12 career and transition programs, as well as the variety of adult services that K-12 graduates may need in the areas of living, learning and working. Addresses issues of self-determination; career assessment; transition to living, learning and working; behavior support; and linkages to adult service providers. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

EDU-805 Literacy Tutor Experience (1-3) Provides students with an opportunity to spend 30, 60 or 100 hours in a school or other community agency tutoring in reading and other basic skills. In addition, 12 hours of seminar are part of the course. Credits: 1-3; Hours: (0/3-9/0), Arts & Sciences Elective Code: A; Comments: Minimum GPA of 2.5 required to take this course

EDU-810 Field Experience (3) Offers experience in classrooms. Students spend 100 hours per semester at a school working under the supervision of a teacher. Students choose between preschool, elementary and secondary settings. A seminar is part of the course. Credits: 3; Hours: (1/0/6/0), Prereq: EDU-110, PSY-111 and either PSY-121 or EDU-240; Arts & Sciences Elective Code: A; Comments: Minimum GPA of 2.5 required to take this course

EDU-924 Honors Project (1) Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. Credits: 1; Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

EDU-928 Independent Study (1) Provides readings, papers and basic research or other projects under the individual guidance of the staff member. Credits: 1; Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

EGR: Engineering

EGR-100 Engineering Orientation (1) Explores engineering career options and engineering disciplines. Students learn problem-solving skills and develop an educational plan of study. Credits: 1; Hours: (1/0/0/0), Prereq: MAT-102 or MAT-708; Arts & Sciences Elective Code: A

EGR-160 Engineering I (3) Develops skills in modeling and solving engineering problems, data analysis, engineering graphics, and technical communication using computer application software. Credits: 3; Hours: (2/2/0/0), Prereq: MAT-136; Arts & Sciences Elective Code: A

EGR-165 Engineering II (3) Develops skills in solving engineering problems using the C programming language. Programming and numerical techniques are directly applied to the engineering discipline. Credits: 3; Hours: 163
Course Descriptions

(2/2/0/0), Prereq: MAT-136; Arts & Sciences Elective Code: A

EGR-167 Engineering II (4)
Develops skills in solving engineering problems using the C-programming language. Programming and numerical techniques are directly applied to the engineering discipline. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-136; Arts & Sciences Elective Code: A

EGR-170 Materials Science (3)
Covers the different structures of materials and the resulting mechanical, electrical and magnetic properties; phase diagrams; kinetics and materials in engineering design. Credits: 3, Hours: (3/0/0/0), Prereq: CHM-165, MAT-136; Arts & Sciences Elective Code: A

EGR-180 Statics (3)
Covers topics such as vector algebra, forces, couples, equivalent-force couple systems, Newton's laws, friction, equilibrium, centroids, area moments of inertia and applications. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-210; Arts & Sciences Elective Code: A

EGR-180 Introduction to Electrical Science (4)
Covers DC and AC circuits, Ohm's law, Kirchhoff's voltage and current laws. Circuit analysis techniques including thevenin equivalents, superposition, source transformation, nodal and mesh analysis, transient and steady state response, complex impedance, average power, RMS voltage and current. Credits: 4, Hours: (3/2/0/0), Prereq: EGR-180, MAT-216; Arts & Sciences Elective Code: A

EGR-280 Thermodynamics (3)
Includes basic elements of classical thermodynamics including first and second law; reversibility; irreversibility; Carnot cycle; properties of pure substances, closed simple systems and one-dimensional steady-flow open systems; and engineering applications. Credits: 3, Hours: (3/0/0/0), Prereq: CHM-165, MAT-216; Arts & Sciences Elective Code: A

EGR-380 Mechanics of Deformable Bodies (3)
Introduces basic theory of deformable bodies by analyzing stress/strain relationships in objects subject to axial, transverse, bending, torsion, combined and buckling loads. Elementary theory of material failure also introduced. Credits: 3, Hours: (3/0/0/0), Prereq: EGR-180, MAT-216; Arts & Sciences Elective Code: A

EGR-400 PLTW - Introduction to Engineering Design (3)
Teaches problem-solving skills using a design development process. Focuses on using solid modeling computer design software to create, analyze and communicate product solutions. This course was developed by Project Lead the Way. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: A

EGR-410 PLTW - Principles of Engineering (3)
Using technology systems and manufacturing processes, students find out how math, science, and technology help people. This course was developed by Project Lead the Way. Credits: 3, Hours: (1/4/0/0), Prereq: EGT-400; Arts & Sciences Elective Code: A

EGR-420 PLTW - Digital Electronics (3)
Uses computer simulations to teach students the logic of electronics as they design, test and construct circuits and devices. This course was developed by Project Lead the Way. Credits: 3, Hours: (1/4/0/0), Prereq: EGT-400, EGT-410; Arts & Sciences Elective Code: A

EGR-440 PLTW - Biotechnical Engineering (3)
Introduces students to the application of biotechnical and engineering concepts related to biomechanics, genetic engineering and forensics. This course was developed by Project Lead the Way. Credits: 3, Hours: (1/4/0/0), Prereq: EGT-400, EGT-410; Arts & Sciences Elective Code: A

EGR-450 PLTW - Computer Integrated Manufacturing (3)
Teaches robotics and automated manufacturing concepts by creating three-dimensional designs with modeling software, then producing actual models of student designs. This course was developed by Project Lead the Way. Credits: 3, Hours: (1/4/0/0), Prereq: EGT-400, EGT-410; Arts & Sciences Elective Code: A

EGR-460 PLTW - Civil Engineering and Architecture (3)
Introduces teams of students to collaboration on the development of community-based building projects and conceptual design for project presentations. This course was developed by Project Lead the Way. Credits: 3, Hours: (1/4/0/0), Prereq: EGT-400, EGT-410; Arts & Sciences Elective Code: A

EGR-900 NSF Technology Seminar (1)
Investigates the skills and responsibilities associated with high technology careers. Students develop a Personal Growth Portfolio. May be repeated four times for credit. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

EGR-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

EGT: Engineering Technology

EGT-124 Strength of Materials (4)
Emphasizes design and analysis of bars, beams, shafts, connectors, columns and other structural members under various loadings. Requires students to determine stress, strain, deflection and required size. Covers thin walled pressure vessels, Poisson effect, thermal stresses, combined loads, eccentric loads and statically indeterminate loads. Demonstrates PC-based software as analysis and visualization tool. Credits: 4, Hours: (3/2/0/0), Prereq: EGT-125; Arts & Sciences Elective Code: B

EGT-125 Applied Statics (4)
Analyzes forces and moments necessary to produce static equilibrium for bodies at rest. Covers vectors, free body diagrams, the equations of equilibrium, analysis of simple structures (trusses, frames, and simple machines), friction (wedges, screws, belts, rolling wheels), fluid statics, hanging cables, centroids and area moments of inertia. Credits: 4, Hours: (3/2/0/0), Prereq: PHY-190; Arts & Sciences Elective Code: B

EGT-132 Kinematics (4)
Covers terminology, classification, analysis and design of planar mechanisms, stressing graphical techniques with CAD software. Includes position, velocity (relative and instant center methods) and acceleration for a variety of mechanisms typically containing four-bar or slider/crank linkages. Uses computer software (Working Model) for the modeling of mechanisms for visualization. Investigates the kinematics and design of cams and gears in preparation for later course work. Credits: 4, Hours: (2/4/0/0), Prereq: EGT-125; Coreq: CAD-141; Arts & Sciences Elective Code: B

EGT-136 Dynamics (4)
Deepens student understanding of the geometry of motion (kinematics) and the forces that create it (kinetics) through solving problems involving planar motion of both particles and rigid bodies. Analyzes the kinetics of planar motion using Newton's second law, work/energy and impulse/momentum methods. Covers the basics of vibrations, simple harmonic motion and rocketry. Credits: 4, Hours: (3/2/0/0), Prereq: EGT-125; Arts & Sciences Elective Code: B

EGT-146 Hydraulics (3)
Hydraulics is a basic course in the use of hydraulic pumps and systems. Special emphasis is given to pumping, controlling, measuring flows, and design and analysis. Special emphasis is placed on distinguishing between types of valves, pumps, hose and connection arrangements, and flow patterns. Students learn basic graphical symbols for making schematic drawings as well as the terminology for all hydraulics. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

EGT-188 Design Problems (4)
Offers students the opportunity to use their creativity in designing a specific product from scratch. The process will start with a basic concept as a solution to a problem and progress through an analytical stage involving calculations and layout drawings. The project will include final assembly and detail drawings, and a bill of materials. Credits: 4, Hours: (2/4/0/0), Coreq: EGT-194; Arts & Sciences Elective Code: B

EGT-194 Machine Design (5)
Focuses on problems involving the size, shape and material requirements of machine parts. Various loading conditions are applied to the machine components. Students analyze plates, shafts, weldments, fasteners, springs, wire rope and bearings. Credits: 5, Hours: (4/2/0/0), Coreq: EGT-188; Arts & Sciences Elective Code: B
EGT-400 PLTW - Introduction to Engineering Design (3)
Teaches problem-solving skills using a design development process. Focuses on using solid modeling computer design software to create, analyze and communicate product solutions. This course was developed by Project Lead the Way. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

EGT-410 PLTW - Principles of Engineering (3)
Using technology systems and manufacturing processes, students find out how math, science, and technology help people. This course was developed by Project Lead the Way. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

EGT-420 PLTW - Digital Electronics (3)
Uses computer simulations to teach students the logic of electronics as they design, test and construct circuits and devices. This course was developed by Project Lead the Way. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

EGT-440 PLTW - Biotechnical Engineering (3)
Introduces students to the application of biotechnical and engineering concepts related to biomechanics, genetic engineering and forensics. This course was developed by Project Lead the Way. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

EGT-450 PLTW - Computer Integrated Manufacturing (3)
Teaches robotics and automated manufacturing concepts by creating three-dimensional designs with modeling software, then producing actual models of student designs. This course was developed by Project Lead the Way. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

EGT-460 PLTW - Civil Engineering and Architecture (3)
Introduces teams of students to collaboration on the development of community-based building projects and conceptual design for project presentations. This course was developed by Project Lead the Way. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

EGT-928 Independent Study (1-3)
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

ELE: Electrical Technology

ELE-235 Electrical Theory, Measurement and Circuits (3)
Covers electrical theory, terminology, symbols, abbreviations and calculations. Focuses on using a variety of electrical meters to measure circuit parameters. Reinforces theory and classroom study with practical lab exercises. Credits: 3, Hours: (1.5/3/0/0), Prereq: ELE-233, MAT-230; Arts & Sciences Elective Code: B

ELE-238 AC, Magnetism, Transformers and Relays (1)
Expands existing study of AC theory and focuses on calculating AC sine waves. Introduces magnetic induction, transformer theory and magnetic relays. Reinforces theory and classroom study with practical lab exercises. Credits: 1, Hours: (.5/1/0/0), Prereq: ELE-233, MAT-230; Arts & Sciences Elective Code: B

ELE-400 Basic Photovoltaic Systems for Installers (3)
Prepares students for NBACEP certification with the use of various tools and techniques for solar electric component operation and interconnection. Standard practices in site assessments, system design and sizing. Studies a range of PV system operations and fundamentals of mechanical and electrical practices in accordance with the National Electrical Code and NBACEP. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

ELT: Electronics

ELT-100 Introduction to PLC Wiring and Troubleshooting (1)
Provides an introduction to system wiring as well as hardware and software troubleshooting tools and techniques. Concepts are explored and emphasized through lecture, reading and hands-on labs. Credits: 1, Hours: (.5/1/0/0), Prereq: ELT-101; Arts & Sciences Elective Code: B

ELT-101 Introduction to PLC Programming and Basic Discrete Control (1)
Provides an introduction to PLC ladder logic programming concepts, guidelines and programming best practices, as well as processors scan and basic discrete control. Explores and emphasizes concepts through lecture, reading and hands-on labs. Credits: 1, Hours: (1/5/0/0), Prereq: ELT-105; Arts & Sciences Elective Code: B

ELT-105 Introduction to Programmable Logic Controllers (2)
Provides an introduction to programmable logic controller (PLC) systems. Introduces system installation, commissioning, troubleshooting, and basic programming. Concepts are explored and emphasized through lecture, reading and hands-on labs. Credits: 2, Hours: (1/2/0/0), Prereq: ATR-308; Arts & Sciences Elective Code: B

ELT-127 Introduction to Intermediate PLC Instruction and Function (1)
Provides an introduction to timing and counting functions as well as compare functions and data manipulation. Concepts are explored and emphasized through lecture, reading and hands-on labs. Credits: 1, Hours: (.5/1/0/0), Prereq: ELT-100; Arts & Sciences Elective Code: B

ELT-128 Introduction to PLC Programming and Control (2)
Provides an introduction to various programmable control schemes, basic sequential control basic system integration. Concepts are explored and emphasized through lecture, reading and hands-on labs. Credits: 2, Hours: (1/2/0/0), Prereq: ELT-105; Arts & Sciences Elective Code: B

ELT-137 Introduction to Solid State Motor Control Wiring and Troubleshooting (1)
Provides an introduction to system wiring as well as hardware and software troubleshooting tools and techniques. Concepts including system components, operational theory and functionality are explored and emphasized through lecture, reading and hands-on labs. Credits: 1, Hours: (.5/1/0/0), Prereq: ELT-128; Arts & Sciences Elective Code: B

ELT-146 National Electrical Code and Electrical Wiring (5)
Covers electrical codes and wiring techniques that are essential to the installation of electrical wiring. Local and National Electrical Codes are used to complete electrical wiring diagrams for a residential structure. Practical experience is provided by laboratory exercises designed to familiarize the student with electrical wiring components, wiring techniques, and the tools of the trade. Credits: 5, Hours: (3/4/0/0), Prereq: ELT-238; Arts & Sciences Elective Code: B

ELT-179 Electronic Board Soldering (1)
Teaches the identification, selection and safe use of appropriate soldering tools and equipment. Covers the technology and techniques of proficient soldering and inspection of through-hole components, dual-inline package integrated circuits and surface mount components to printed circuit boards (PCBs). Demonstrates proper desoldering of through-hole and SMT components. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: B

ELT-224 Motors and Transformers (5)
Provides theory and hands-on experience with electric motors and transformers. Learning activities include reading, lecture and labs. Covers DC, three-phase and single-phase motors in depth, and studies three-phase and single-phase transformers, applications and connections. Credits: 5, Hours: (4/2/0/0), Prereq: ELE-238, MAT-233; Arts & Sciences Elective Code: B

ELT-255 Programmable Logic Controllers (6)
Covers basic and advanced programming of the most popular programmable controllers used in industrial automation. Basic ladder logic programming, timers, counters, data manipulation, data compare, temperature control and analog operations are covered. Troubleshooting and installation are also included. Credits: 6, Hours: (3/6/0/0), Prereq: ELT-211; Arts & Sciences Elective Code: B

ELT-277 Electronic Practices (3)
Presents DC current, voltage, energy, power, resistance, capacitance, inductance and semiconductor theory in a practical laboratory setting. Focuses on lab safety, component identification, schematic reading and the use of equipment to measure prototype circuits. Includes extensive laboratory sessions requiring schematic reading, constructing circuits, using soldering and solderless breadboard, and utilizing lab equipment
to measure and troubleshoot circuits. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

ELT-299 Introduction to LabView (3) Introduces LabView, including modular programming, loops, charts, arrays, clusters, case and sequence structures, strings and file I/O. Presents Windows operating system basics, word processing and Excel software. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

ELT-304 Introduction to Electrical Circuits (4) Studies the theory and application of electricity. Includes electrical safety, shop methods, electrical theory and circuit analysis. Laboratory experiments enhance learning of theories studied and provide hands-on experience with electrical test instruments and soldering equipment. Credits: 4, Hours: (3/2/0/0), Prereq: MAT-745; Arts & Sciences Elective Code: B

ELT-309 Digital Circuits (3) Presents the analysis and design of digital circuits. Introduces Boolean algebra as a tool for working with basic gates, flip-flops, latches, and adders and timers. Laboratory and computer-simulation exercises enhance understanding. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-517; Arts & Sciences Elective Code: B

ELT-341 Electric Circuits II (5) Adapts DC circuit analysis techniques to the AC realm. Examines the fundamental concepts of passive filters and frequency response. Includes computer simulations and extensive laboratory sessions. Credits: 5, Hours: (4/2/0/0), Prereq: ELT-345; Arts & Sciences Elective Code: B

ELT-345 Electric Circuits I (5) Presents fundamental DC concepts (i.e., current, voltage, polarity, energy, power), describes methods for analyzing DC electric circuits, studies resistive-inductive and resistive-capacitive circuits, and introduces the fundamental concepts of AC electricity. Includes computer simulations and extensive laboratory sessions. Credits: 5, Hours: (4/2/0/0), Prereq: College-level math course and Electronic Practices; Arts & Sciences Elective Code: B

ELT-396 Communications Electronics (4) Provides students the theoretical background necessary for working with systems used in today's communication industry. Focuses on signal representations, transmission of modulation of, and coding of both analog and digital signals; system block diagrams, operation and application of the phase-locked loop, and propagation of electromagnetic waves in guided media and free space. Communication Systems I and II complement this theory class with extensive laboratory examples. Credits: 4, Hours: (4/0/0/0), Prereq: ELT-518; Arts & Sciences Elective Code: B

ELT-398 Communications Systems I (3) Covers projects related to building and measuring the active filters; and the design, build and test of balance, FM, and AM modulators and demodulators. Includes the investigation and application of phase-locked loops and digital communication links using a variety of modulation techniques. Credits: 3, Hours: (1/4/0/0), Prereq: ELT-396; Arts & Sciences Elective Code: B

ELT-399 Communications Systems II (4) Continues Communications Systems I laboratory work related to the design, build and test of digital and analog communications links. Focuses on the measurement of antennas, transmission lines, the propagation of electro magnetic waves and waveguides, through lectures, comprehensive laboratory activities, lab report writing and computer simulations. Credits: 4, Hours: (1/6/0/0), Prereq: ELT-398; Arts & Sciences Elective Code: B

ELT-400 Local Loop (3) Introduces students to the construction and maintenance of the local loop. Learning activities include termination and equipment for both residential and commercial applications. Other topics covered include voice data, analog and digital circuits. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-443; Arts & Sciences Elective Code: B

ELT-401 Advanced Electrical Circuits (4) Continues Introduction to Electrical Circuits and expands to include AC theory, inductors, capacitors, transformers, three-phase, networks and magnetism. Reinforces concepts and provides experience and troubleshooting opportunities through lab exercises. Credits: 4, Hours: (3/2/0/0), Prereq: ELT-304, MAT-102; Arts & Sciences Elective Code: B

ELT-402 Introduction to Communication Systems (3) Provides an introduction to the telecommunications industry, including regulating bodies and standards. Technical concepts covered include color code, wire types, terminals and enclosures, connectors and splicing. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

ELT-408 Structured Cabling System (3) Introduces the components used in connecting electrical communication devices and systems. Students work with twisted pairs to construct cables used in communication networks. Laboratory experiments are designed to give the student practical experience with cabling and termination. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-427; Arts & Sciences Elective Code: B

ELT-427 Telephony Circuits I (3) Covers the theory of telephony circuits. Emphasis is placed on how a telephone functions; analog-to-digital conversion; multiplexing; and transmission of voice, data and video signals. Lab activities reinforce lecture topics. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-402; Arts & Sciences Elective Code: B

ELT-428 Telephony Circuits II (3) A continuation of ELT-427. This course expands the analysis of voice, video and data communication circuits. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-427, ELT-460; Arts & Sciences Elective Code: B

ELT-438 Data Acquisition & Analysis (2) Provides students with the knowledge required to specify, evaluate and use a wide variety of digital data acquisition systems in laboratory and field applications. Reinforces basic principles of sampling and digitizing theory with practical examples from everyday testing operations. Emphasizes the interaction between test design, data acquisition and analysis. Credits: 2, Hours: (2/2/0/0), Prereq: ATR-308, ELT-105; Arts & Sciences Elective Code: B

ELT-443 Multiplexing I (3) Introduces the concepts of switching networks and multiple-user communication lines. Topics include common channel signaling, public packet switched networks, integrated digital networks and synchronized optic networks. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-455; Arts & Sciences Elective Code: B

ELT-455 Transmission Circuits I (3) Explores in detail the methods of transmitting and receiving voice, data and video signals. The course includes fiber optic, microwave, satellite and data networking forms of transmission. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-428; Arts & Sciences Elective Code: B

ELT-460 Fiber Optics (3) Covers the theory and application of fiber optic principles and devices. Topics include performance comparisons of specific systems, noise analysis and receive sensitivity. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-408; Arts & Sciences Elective Code: B

ELT-500 LAN Design & Protocols (3) Provides the student with a basic understanding of networking. Topics include OSI model and industry standards, networking topologies, IP addressing with a subnet mask, networking components and basic network design. Credits: 3, Hours: (2/2/0/0), Prereq: NET-154; Arts & Sciences Elective Code: B

ELT-506 Router Basics (3) Introduces students to routers, setup, configuration and management of using routers in a network environment. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-500; Arts & Sciences Elective Code: B

ELT-517 Active Devices I: Transistor Amplifiers (6) Presents an analytical approach with laboratory and computer-simulation exercises to the design and troubleshooting of transistor amplifiers. Topics include BJTs, FETs, small signal/power amplifiers and frequency response. Credits: 6, Hours: (4/4/0/0), Prereq: ELT-277; Coreq: ELT-341, MAT-746; Arts & Sciences Elective Code: B

ELT-518 Active Devices II: Operational Amplifiers (3) Presents an analytical approach with laboratory and computer-simulation exercises to the design and troubleshooting of operational amplifier circuits. The four basic types of negative feedback are extensively examined. Topics include voltage amplifiers, comparators, analog-to-digital conversion, waveshaping and active filters. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-517; Arts & Sciences Elective Code: B

ELT-616 Microprocessors I (4) Studies counters, shift registers, memory, storage, digital signal processing and microprocessors. Credits: 4, Hours: (3/2/0/0), Prereq: ELT-309; Arts & Sciences Elective Code: B

ELT-621 Microprocessors II (4) Introduces software engineering through a combination of C programming language, robotics and version control software. Extensive laboratory sessions using C and robotics will enhance
ELT-798 Fundamentals of Hydraulic and Pneumatic Systems (5)
Focuses on proper usage and application of, as well as the theory and physics behind, hydraulic and pneumatic systems and controls. Introduces the various components used in each type of system, electro-hydraulic components, electro-pneumatic components and component selection. Students design, assemble and troubleshoot various types of hydraulic and pneumatic control systems and components. Credits: 5; Hours: (2/6/0/0); Prereq: ELT-211, MAT-109; Arts & Sciences Elective Code: B

ELT-845 Design Projects (4)
Provides students experience in individually designing subsystems and in working as part of a design group where each student has specific responsibilities toward achieving the overall goal of designing, building, troubleshooting and testing a complex electronic system. Credits: 4; Hours: (3/2/0/0); Coreq: ELT-521; Arts & Sciences Elective Code: B

ELT-853 Air Conditioning and Refrigeration II (10)
Covers domestic and light commercial refrigeration, air conditioning, heating systems and heat pumps in theory and labs. Provides students with extensive experience in system troubleshooting. Credits: 10; Hours: (8/4/0/0); Prereq: ELT-852; Arts & Sciences Elective Code: B

ELT-860 Heating, Vent, and Air Conditioning Systems and Controls (5)
Provides the student with working knowledge of commercial air handling units and heating/cooling systems. Pneumatic environmental controls application, calibration and troubleshooting are also covered in theory and laboratory exercises. Credits: 6; Hours: (4/4/0/0); Prereq: ELT-853; Arts & Sciences Elective Code: B

ELT-880 Telecommunications Internship (3)
Provides an on-site job experience for the student. Students are exposed to telecommunications equipment and systems in a typical work environment. Credits: 3; Hours: (0/0/0/12); Arts & Sciences Elective Code: B

ELT-924 Honors Project (1-3)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1; Hours: (1/0/0/0); Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

ELT-928 Independent Study (1-3)
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1; Hours: (1/0/0/0); Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

EMS: Emergency Medical Services

EMS-200 Emergency Medical Technician (8)
Prepares students to work for fire and ambulance services. Focuses on treatment of illness and injury, basic airway management, and automated defibrillation. Course can be taken for personal knowledge or to enhance marketability in other healthcare professions. This 152-hour course is the entry-level career certification course in Emergency Medical Services. Credits: 8; Hours: (7/1/1.5/0); Arts & Sciences Elective Code: B; Comments: Current certification in CPR for health care providers is required

EMS-300 Advanced Emergency Medical Technician (8)
Prepares students for the National Registry practical and written examinations for State of Iowa certification. Focuses on prehospital emergency care fundamentals, and advanced airway and cardiovascular management skills. Requires 72 hours of clinical internship at hospitals, ambulance services or fire departments. Credits: 8; Hours: (6/1/4.5/0); Prereq: EMS-200; Arts & Sciences Elective Code: B; Comments: Current certification in CPR for health care providers and active EMT certification are required

EMS-641 Introduction to Paramedicine (3)
Provides an overview of paramedic roles and responsibilities and the emergency medical service system. Includes discussion of medicolegal and ethical issues in EMS, agents of trauma and disease, and career opportunities for paramedics. Provides discussion and demonstration of proper documentation in EMS, emergency vehicle operations, and non-patient care aspects of EMS. Credits: 3; Hours: (3/0/0/0); Prereq: EMS-200; Arts & Sciences Elective Code: B; Comments: Need to hold a current EMT-B Iowa Certification

EMS-642 Pharmacology for Paramedicine (3)
Provides an introduction to drug classifications, mechanism of action and metabolism. Discusses indications, contraindications, dosages, routes of administration and side effects of drugs administered by the paramedic. Credits: 3; Hours: (3/0/0/0); Prereq: BIO-161, MAT-731; Arts & Sciences Elective Code: B

EMS-643 Cardiorespiratory Paramedicine (3)
Provides lecture, discussion and case-based teaching in the pathophysiology, recognition, and advanced life support of cardiovascular and respiratory emergencies and shock. Credits: 3; Hours: (3/0/0/0); Prereq: BIO-181, EMS-641, EMS-642; Arts & Sciences Elective Code: B

EMS-644 Paramedic Clinical I (3)
Provides opportunities for observation and supervised participation in the delivery of advanced life support in pre-hospital and emergency department settings. Credits: 3; Hours: (0/0/9/0); Prereq: BIO-181, EMS-641, EMS-642; Coreq: EMS-645; Arts & Sciences Elective Code: B

EMS-645 Paramedic I (2.5)
Provides scenario-based teaching and student practice in techniques of assessment and management of patients with cardiovascular and respiratory emergencies. This course includes ACLS certification. Credits: 2.5; Hours: (0.5/4/0/0); Prereq: EMS-641, EMS-642; Coreq: EMS-643, EMS-644; Arts & Sciences Elective Code: B

EMS-646 Paramedic Clinical II (4)
Provides opportunities for observation and supervised practice of patient assessment and management in various settings. Credits: 4; Hours: (0/0/12/0); Prereq: EMS-644; Coreq: EMS-647, EMS-648, EMS-649; Arts & Sciences Elective Code: B

EMS-647 Paramedic II (3.5)
Provides demonstration and scenario-based practice of assessment and management of trauma, medical, psychological, pediatric, geriatric and obstetric patients. Includes PALS and PHTLS certification. Credits: 3.5; Hours: (1/5/0/0); Prereq: EMS-645; Coreq: EMS-646, EMS-648, EMS-649; Arts & Sciences Elective Code: B

EMS-648 Special Patient Populations in Emergency Medical Services (4)
Provides lecture-discussion and case-based teaching of EMS, assessment and management of emergencies specific to pediatric, geriatric, disabled and obstetric patient populations. Includes GEMS certification. Credits: 4; Hours: (4/0/0/0); Prereq: EMS-643; Coreq: EMS-646, EMS-647, EMS-649; Arts & Sciences Elective Code: B

EMS-649 Trauma and Environmental Emergencies (4)
Provides lecture-discussion and case-based teaching in the kinetics of trauma, pathophysiology of shock and trauma, and techniques of trauma management. Discussion of identification and management of environmental emergencies including heat and cold, barotrauma, altitude, radiation, hazardous materials and drowning emergencies. Includes PEPP certification. Credits: 4; Hours: (4/0/0/0); Prereq: EMS-643; Coreq: EMS-646, EMS-647, EMS-648; Arts & Sciences Elective Code: B

EMS-650 Medical and Psychological Emergencies (4)
Provides lecture-discussion and case-based teaching in the pathophysiology, recognition and advanced life support assessment and management of emergencies involving the nervous, endocrine, renal, and gastrointestinal systems. Assessment and intervention in psychological emergencies. Includes AMLS certification. Credits: 4; Hours: (4/0/0/0); Prereq: EMS-643, EMS-648; Coreq: EMS-651, EMS-652; Arts & Sciences Elective Code: B

EMS-651 Paramedic Fieldwork (4)
Provides opportunities for guided paramedic practice and evaluation in the pre-hospital setting. Students are expected to achieve increasing independence as paramedic level practitioners. The student must complete a prescribed number of patient contacts as team leader. Credits: 4; Hours: (0/0/12/0); Prereq: EMS-646; Coreq: EMS-650; EMS-651; Arts & Sciences Elective Code: B

EMS-652 Paramedic Clinical III (4)
Provides an opportunity for guided paramedic practice and evaluation in hospital clinical environments. Credits: 4; Hours: (0/0/12/0); Prereq: EMS-646; Coreq: EMS-650, EMS-651; Arts & Sciences Elective Code: B
EMS-653 Paramedic III (1)
Provides an opportunity for scenario-based skill and assessment practice in biweekly lab sessions that prepare the student for the NREMT paramedic practical examination for certification. Credits: 1, Hours: (0/2/0/0), Prereq: EMS-647; Coreq: EMS-650, EMS-651, EMS-652; Arts & Sciences Elective Code: B

END:
Electroneurodiagnostic

END-100 Introduction to Electroneurodiagnostics (2.5)
Provides an introduction to basic electroencephalographic concepts and techniques. Instrumentation is demonstrated in the classroom and hands-on experience is provided in the laboratory. Credits: 2.5, Hours: (1/3/0/0), Coreq: BIO-161, HSC-107, HSC-117, HSC-210, HSC-211; Arts & Sciences Elective Code: B

END-200 Applied Electronics and Instrumentation (1.5)
Includes electrophysiological instrumentation associated with the conventional electroencephalograph; the power supply, contribution of electrodes, differential amplifier concepts, filters (low frequency, high frequency and 60-hertz filter), the writer unit, electrical circuitry, electrical safety and standards for clinical electroencephalographs. Also covers ambulatory monitoring and digital electroencephalography. Credits: 1.5, Hours: (1/1/0/0), Coreq: BIO-181, END-310, END-330; Arts & Sciences Elective Code: B

END-310 Electroneurodiagnostic Technical Science (7)
Provides theory and application of electrical concepts, recording techniques, data analysis and description. Credits: 7, Hours: (2/6/6/0), Prereq: BIO-168, END-100; Coreq: BIO-181, END-200, END-330; Arts & Sciences Elective Code: B

END-330 Electroneurodiagnostic Clinical Science (2)
Introduces students to electroneurodiagnosis, neurophysiology, functional neuroanatomy, normal and abnormal conditions, and correlates. Includes electroencephalographic signs of cerebral disorders. Studies specific neurological disease entities; integrates EEG patterns for cerebral disorders and diagnosis. Credits: 2, Hours: (2/0/0/0), Prereq: BIO-168, END-100; Coreq: BIO-181, END-200, END-310; Arts & Sciences Elective Code: B

END-400 Evoked Potentials I (1)
Provides evoked potential instrumentation: EP history, signal averaging, statistics, A/D converter, signal averages, amplifiers, filters and stimulators. Includes recording evoked potentials from volunteers and observing the effect of different variables. Credits: 1, Hours: (1/0/0/0), Prereq: END-200, END-310, END-330; Coreq: END-810; Arts & Sciences Elective Code: B

END-420 Evoked Potentials II (2)
Provides introduction in somatosensory, visual and brainstem auditory evoked responses. Laboratory sessions provide practical application and evaluation of EP data. Credits: 2, Hours: (1/2/0/0), Prereq: END-400, END-810; Coreq: END-830; Arts & Sciences Elective Code: B

END-810 Electroneurodiagnostic Clinic I (6)
Focuses on clinical application of basic EEG techniques according to lab protocol under direct supervision of staff. Record review with physicians and correlative seminars are included. Credits: 6, Hours: (1/0/15/0), Prereq: END-200, END-310, END-330; Coreq: END-400; Arts & Sciences Elective Code: B

END-830 Electroneurodiagnostic Clinic II (7.5)
Provides continued clinical recording techniques including a broad patient population and procedure range. Record review with physicians and correlative seminars are included. Credits: 7.5, Hours: (1/0/19.5/0), Prereq: END-400, END-810; Coreq: END-420; Arts & Sciences Elective Code: B

END-850 Electroneurodiagnostic Clinic III (5.5)
Provides clinical practice in performing electroencephalograms, evoked potentials, intraoperative monitoring and epilepsy. Record and review with physicians and correlative seminars are included. Credits: 5.5, Hours: (1/1/12/0), Prereq: END-420, END-830; Coreq: END-870; Arts & Sciences Elective Code: B

END-870 Sleep Technology (6.5)
Provides clinical practice in polysomnography using appropriate techniques according to protocol. Record and review with physicians and correlative seminars are included. Credits: 6.5, Hours: (1/1/15/0), Prereq: END-420, END-830; Coreq: END-850; Arts & Sciences Elective Code: B

ENG: English Composition

ENG-013 Basic Writing (3)
Provides group instruction in basic writing skills: writing to communicate with the reader, sentence and paragraph structure, proofreading for spelling, grammar and punctuation errors. Students in this course should not have previous or concurrent enrollment in Elements of Writing, Composition I and II, College Writing, or Workplace Communication. Credits: 3, Hours: (3/0/0/0), Prereq: Arts & Sciences Elective Code: D

ENG-027 Basic Essay Writing (1)
Introduces students to the concept of writing papers using the five paragraph organization approach. Students in this course should not have previous or concurrent enrollment in Elements of Writing, Composition I and II, College Writing, or Workplace Communication. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: D

ENG-059 College Prep Writing (3)
Provides students with basic skills instruction in a traditional group setting. The curriculum includes two hours of reading and one hour of writing per week. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: D

ENG-070 Personal Achievement Writing (1-2)
Designed to assess a student’s writing strengths and weaknesses. The student receives instruction on an individualized basis in the areas of skill needs while building on skills already mastered. The course is divided into two parts: knowledge about language and experience using the language. The course helps prepare the student to take Elements of Writing and may also be supplemental support for students enrolled in Composition I, Composition II, Workplace Communication or other writing courses. Credits: 1-2, Hours: (0/2-4/0/0), Arts & Sciences Elective Code: D

ENG-075 Personal Achievement Reading (1-2)
Designed to measure the student’s present reading skills, and from that measurement provide an individualized program for the improvement of skills. The course is divided into three main areas: pronunciation, vocabulary and comprehension. The reading materials utilized are related to the student's interests. Credits: 1-2, Hours: (0/2-4/0/0), Arts & Sciences Elective Code: D

ENG-101 Elements of Writing (3)
Develops students’ fluency in communication and clarity in thinking through writers' notebooks, expository writing, analytical reading and listening. Students use structured assignments to explore personal goals and values, exercising skills needed for reasoning and writing across the curriculum. Credits: 3, Hours: (3/0/0/0), Prereq: Qualifying placement score; Arts & Sciences Elective Code: A

ENG-105 Composition I (3)
Develops expository writing with emphasis on organization, supporting details, style, vocabulary and library research skills. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-101 or qualifying placement score; Arts & Sciences Elective Code: A

ENG-106 Composition II (3)
Teaches precise and responsible use of research tools. Requires critical analysis of reading materials, audience and self when communicating content material. Develops students’ ability to use effective and ethical arguments. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105; Arts & Sciences Elective Code: A

ENG-108 Composition II: Technical Writing (3)
Provides concepts, principles and practice of writing and analyzing documents in business, science (including health occupations) and industry. Research emphasized. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

ENG-120 College Writing (5)
Develops expository writing with emphasis on substance, organization, supporting details, style and vocabulary. Teaches precise and responsible use of research tools. Requires critical analysis of reading materials in curriculum content areas, current issues and literature. Develops students’ ability to use ethical and logical argument. Credits: 5, Hours: (5/0/0/0), Prereq: ENG-101 or qualifying placement score; Arts & Sciences Elective Code: A

ENG-150 Fundamentals of English Grammar (3)
Reviews English grammatical structure and examines advanced grammatical patterns for both native and non-native speakers of English. Provides practice in using English grammar fluently in writing, reading and speaking. Emphasizes grammar in application and linguistic analysis of grammar. (3/0/0/0), Arts & Sciences Elective Code: A
ENG-221 Creative Writing (3)
Offers students an opportunity to do advanced work in writing short story, poetry, literary nonfiction or play writing. Emphasizes regular workshops with attention to content issues, structures, forms and styles of particular genres. Students read and comment on other students' works as well as published material. Credits: 3, Hours: (3/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

ENG-225 Creative Writing: Poetry (3)
Offers a writing workshop devoted to students' poetry. Class time devoted to responding to and revising work, reading and discussing published poetry, and exploring various forms of the poem. Credits: 3, Hours: (3/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

ENG-233 Creative Writing: Short Fiction (3)
Offers a writing workshop focused on students' attempts and successes in writing 500- to 3,500-word short stories. Seventy-five percent of class time devoted to drafting, reading and responding to peers' drafts; 25 percent devoted to reading and discussing published short stories and the elements of fiction as they apply to crafting stories. Credits: 3, Hours: (3/0/0), Prereq: ENG-105; ENG-120; Arts & Sciences Elective Code: A

ENG-235 Creative Writing: Playwriting/Screenwriting (3)
Offers a writing workshop for students' playwriting or screenwriting. Class time devoted to reading and responding to students' work, and discussing published and produced plays and screenplays. Homework devoted to drafting and revising and to reading and responding to published and produced plays and screenplays. Credits: 3, Hours: (3/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

ENG-238 Creative Writing: Nonfiction (3)
Offers a writing workshop for students' nonfiction: personal essays, memoir, nature writing, literary journalism, or other subgenre of the craft. Class time devoted to reading and responding to classmates' work, discussing published nonfiction and the writing craft. Homework devoted to drafting and revising, and to reading and responding to published nonfiction in a variety of subgenres. Credits: 3, Hours: (3/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

ENG-240 Advanced Creative Writing (3)
Offers students an opportunity to do advanced work in fiction, poetry and literary nonfiction, with an eye toward getting something published. Students respond to each other's writing and enlarge their knowledge of the publishing industry. Credits: 3, Hours: (3/0/0), Prereq: ENG-221 or ENG-225 or ENG-233 or ENG-235 or ENG-238; Arts & Sciences Elective Code: A

ENG-245 Advanced Creative Writing: Short Fiction (3)
Provides a writing workshop approach to working on students' short fiction. Seventy-five percent of class time is devoted to reading and responding to other students' work and discussing the responses; 25 percent of class time is devoted to discussing already published work. All critiquing based in either New Critical/Elements of Fiction discourse or Reader Response. Credits: 3, Hours: (3/0/0), Prereq: ENG-221 or ENG-233; Arts & Sciences Elective Code: A

ENG-275 Editing a Literary Magazine (3)
Provides practical experience in reading and editing literary manuscripts (nonfiction, fiction and poetry). Students design and edit hypothetical magazines using actual student manuscripts and work on preparing an issue of Cedar Valley Divide, Kirkwood's student art and literary magazine. Credits: 3, Hours: (3/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

ENG-290 Literary Magazine Layout and Production (3)
Provides practical experience working on an editorial team to produce a student art and literary magazine, Kirkwood's Cedar Valley Divide (CVD). Focuses on designing and editing the magazine using Adobe InDesign and Photoshop software; coordinating with submitters, independent publishers and printers; and establishing and meeting deadlines to successfully publish the CVD by semester's end. Credits: 3, Hours: (2/2/0), Prereq: ENG-275; Arts & Sciences Elective Code: A

ENG-924 Honors Project (3)
Allows a qualified honors student to pursue a special concentration of study under the guidance of an honors faculty member. Requires that student meets honors eligibility criteria. Requires completion of an honors project contract. Credits: 1, Hours: (1/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

ENG-928 Independent Study (1-3)
Provides opportunity for independent writing projects under the guidance of a faculty member. Credits: 1-3, Hours: (1-3/0/0), Prereq: ENG-105, ENG-221; Arts & Sciences Elective Code: A; Comments: Permission of instructor.

ENV: Environmental Science

ENV-115 Environmental Science (3)
Examines environmental issues from a scientific perspective. Topics examined include ecosystems, energy, global warming, ozone depletion, air pollution, water resources, population growth and biodiversity. Students are required to analyze environmental problems and draw conclusions. Credits: 3, Hours: (3/0/0), Arts & Sciences Elective Code: A

ENV-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. Credits: 1, Hours: (1/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

ENV-928 Independent Study (0.5)
Provides students an opportunity to further their studies in environmental science. After consultation with instructor, readings, papers and basic research or other projects may be assigned. Credits: 0.5, Hours: (0.5/0/0), Arts & Sciences Elective Code: A; Comments: College-level biology or environmental science course or permission of instructor

ESI: Intensive English

ESI-006 L1 ELA Reading & Vocabulary (3)
Begin the study of English reading and vocabulary development for non-native speakers who have little to no English. Emphasizes reading skills in informal settings. Credits: 3, Hours: (3/0/0), Arts & Sciences Elective Code: D

ESI-007 L1 ELA Listening and Conversation (3)
Begin the study of conversation and listening skills in English for non-native speakers who have little to no English. Emphasizes communicative speaking and interactive listening in informal language settings. Credits: 3, Hours: (3/0/0), Arts & Sciences Elective Code: D

ESI-010 L1 ELA Phonetics and Pronunciation (3)
Begin the study of English segments and intonation for non-native speakers who have little to no English. Emphasizes the use of phonetic alphabet. Focuses on using segments and intonation, in informal language settings. Credits: 3, Hours: (3/0/0), Arts & Sciences Elective Code: D

ESI-011 L1 ELA Grammar (4)
Begin the study of the basics of English grammar for non-native speakers of English. Focuses on using English grammar fluently in writing, reading and speaking. Credits: 4, Hours: (4/0/0), Arts & Sciences Elective Code: D

ESI-014 L1 ELA Writing (2)
Provides practice in the basic formation of the English alphabet. Focuses on writing at the sentence level for non-native speakers who have little to no English. Increases the use of vocabulary in writing. Familiarizes the student with keyboarding. Credits: 2, Hours: (2/0/0), Arts & Sciences Elective Code: D

ESI-016 L2 ELA Writing (2)
Provides practice in the basic formation of English sentences, paragraphs and reports for non-native speakers of English. Provides practice in structure, and in using English vocabulary in writing. Credits: 2, Hours: (2/0/0), Prereq: ESI-014; Arts & Sciences Elective Code: D

ESI-018 L2 ELA Grammar (4)
Provides practice in the basics of English grammar for non-native speakers of English. Focuses on using English grammar fluently in writing, reading and speaking. Credits: 4, Hours: (4/0/0), Prereq: ESI-011; Arts & Sciences Elective Code: D

ESI-019 L2 ELA Listening Skills and Culture (3)
Provides beginning-level practice in conversation and listening skills in English for non-native speakers of English. Emphasizes speaking and listening in formal and informal language settings. Credits: 3, Hours: (3/0/0), Prereq: ESI-007; Arts & Sciences Elective Code: D
ESI-021 L2 ELA Phonetics and Pronunciation (3)
Provides practice in English segmentals and intonation of the English language for non-native speakers at the beginning level. Focusses on using segmentals and intonation, in formal and informal language settings. Credits: 3, Hours: (3/0/0/0), Prereq: ESI-010; Arts & Sciences Elective Code: D

ESI-023 L2 ELA Reading and Vocabulary (3)
Provides practice in reading and vocabulary development at the beginning level for non-native speakers of English. Emphasizes reading skills in academic settings. Credits: 3, Hours: (3/0/0/0), Prereq: ESI-006; Arts & Sciences Elective Code: D

ESI-037 L3 ELA Writing (2)
Continues practice in the formation of English sentences, paragraphs and reports for non-native speakers of English at a beginning intermediate level. Builds students' writing structure skills, and use of English vocabulary in writing. Credits: 2, Hours: (2/0/0/0), Prereq: ESI-016; Arts & Sciences Elective Code: D

ESI-038 L3 ELA Grammar (4)
Continues practice in English grammar for non-native speakers of English at the beginning intermediate level. Focusses on using English grammar fluently in writing, reading and speaking. Credits: 4, Hours: (4/0/0/0), Prereq: ESI-018; Arts & Sciences Elective Code: D

ESI-039 L3 ELA Listening Skills, Conversation and Culture (3)
Continues practice in conversation and listening skills in English for non-native speakers of English at the beginning intermediate level. Emphasizes speaking and listening in formal and informal language settings. Exposes students to English culture and cultural expectations. Credits: 3, Hours: (3/0/0/0), Prereq: ESI-019; Arts & Sciences Elective Code: D

ESI-040 L3 ELA Phonetics and Pronunciation (3)
Continues practice in English segmental and intonation of the English language for non-native speakers at the beginning intermediate level. Provides practice in using segmentals and intonation, in formal and informal language settings. Credits: 3, Hours: (3/0/0/0), Prereq: ESI-021; Arts & Sciences Elective Code: D

ESI-042 L3 ELA Reading and Vocabulary (3)
Continues practice in reading and vocabulary development at the beginning intermediate level for non-native speakers of English. Emphasizes reading skills in academic settings. Credits: 3, Hours: (3/0/0/0), Prereq: ESI-023; Arts & Sciences Elective Code: D

ESI-062 L4 ELA Culture and Conversation (3)
Continues practice in conversation in English for non-native speakers of English at the advanced intermediate level. Focuses on speaking, in formal and informal language settings. Exposes students to English culture and cultural expectations in conversation and oral interaction. Credits: 3, Hours: (3/0/0/0), Prereq: ESI-039; Arts & Sciences Elective Code: D

ESI-063 L4 ELA Writing (3)
Continues practice in the formation of English sentences, paragraphs, and reports for non-native speakers of English at an advanced intermediate level. Provides practice in writing structure, and using English vocabulary in writing. Emphasizes academic report structure and conventions. Credits: 3, Hours: (3/0/0/0), Prereq: ESI-037; Arts & Sciences Elective Code: D

ESI-064 L4 ELA Grammar and Usage (3)
Continues practice in English grammar for non-native speakers of English at the advanced intermediate level. Provides practice in using English grammar fluently in writing, reading and speaking. Emphasizes grammar in applications. Credits: 3, Hours: (3/0/0/0), Prereq: ESI-038; Arts & Sciences Elective Code: D

ESI-068 L4 ELA Reading and Vocabulary (3)
Practice in reading and vocabulary development at the advanced intermediate level. Emphasizes more subtle vocabulary and comprehension for academic settings. Credits: 3, Hours: (3/0/0/0), Prereq: ESI-042; Arts & Sciences Elective Code: D

ESI-069 L4 ELA Presentations (3)
Prepares non-native speakers of English for academic communication skills, including presentations. Provides opportunity to practice academic skills, emphasizing presentation and other skills, at the advanced intermediate level. Credits: 3, Hours: (3/0/0/0), Prereq: ESI-040; Arts & Sciences Elective Code: D

ESI-090 L5 ELA Culture and Conversation (3)
Continues practice in conversation in English for non-native speakers of English at the beginning advanced level. Provides practice in speaking in formal and informal language settings. Exposes students to English culture and cultural expectations in conversation and oral interaction. Credits: 3, Hours: (3/0/0/0), Prereq: ESI-062; Arts & Sciences Elective Code: D

ESI-093 English Language Acquisition Special Topics (1-12)
Develops English language skills in a classroom setting, in reading, writing, communication, grammar and/or for special purposes. Credits: 1-12, Hours: (1-12/0/0/0), Arts & Sciences Elective Code: D

EXS: Exercise Science
EXS-280 Exercise Physiology (4)
Defines exercise through the study of neuromuscular physiology, metabolism, exercise endocrinology, cardiometabolic response, environmental adaptation and optimized physical performance. Examines physiological response to various modes of exercise through laboratory activities and culminates with an original research project. Intended for students pursuing health-related careers, health pre-professional programs or those who have an interest in the effects of exercise on the human body. Credits: 4, Hours: (3/2/0/0), Prereq: BIO-173 or both BIO-177 & BIO-180; Arts & Sciences Elective Code: A

FIN: Finance
FIN-101 Principles of Banking (3)
Presents the fundamentals of bank functions in a descriptive fashion so that beginning bankers can view their chosen profession in a broad perspective. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

FIN-110 Money and Banking (3)
Presents a fundamental treatment of how money functions in the U.S. and world economies. Topics include the concept of money supply and the role the bank plays as a money creator and participant in the nation's payment mechanism. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

FIN-121 Personal Finance (3)
Provides a comprehensive examination of the concepts and principles of personal finance and offers solid strategies for successful management and planning. Students learn planning, analyzing and controlling financial resources, and develop the knowledge and skills necessary to take advantage of favorable financial opportunities, resolve personal financial problems, achieve self-satisfaction and strive towards financial security. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

FIN-130 Principles of Finance (3)
Examines the tools and techniques used in the world of finance. Students are introduced to basic financial concepts such as time value of money, asset valuation, risk analysis and return on investment. Evaluation and decision-making techniques are used as they pertain to financial management in various business situations. Credits: 3, Hours: (3/0/0/0), Prereq: ACC-152, MAT-140; Arts & Sciences Elective Code: A

FIR: Fire Science
FIR-110 History and Philosophy of the Fire Service (2)
Provides students with an understanding of where the fire service has come from so they can better help steer fire service into the future. Instructual units are facilitated through a guided self-study format. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

FIR-124 Building Construction (3)
Examines structural reactions to fire. Studies building codes and their relationship to the architectural strength of various designs. Covers how construction and design are key factors when inspecting buildings, preplanning fire operations and functioning at emergencies. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

FIR-127 Fire Behavior and Combustion (3)
Studies how the chemical and physical aspects of fuels, the combustion process and the products of combustion affect how fire is caused, spread and extinguished. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

FIR-130 Fundamentals of Fire Prevention (3)
Covers the techniques, procedures, regulations and enforcement of codes (fire, building, life safety) in various occupancies. Communication
with the property owner on changes to meet code requirements are presented. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

FIR-140 Firefighter I - Unit I (2)
Helps firefighters or potential firefighters prepare for Firefighter I Certification. Topics include basic firefighting tactics, fire behavior, safety, forcible entry, hose handling, ladders, protective clothing, SCBA Rescue and Ventilation. Completing Skills I does not meet all criteria for testing for FFI Certification. Attendance is mandatory at all sessions. Equivalent to the 24-hour Basic Attack Course. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

FIR-141 Firefighter I - Unit II (2)
Continues to build on skills taught in Firefighting Skills I. Students learn new skills and advance their previous skills for preparation for the Firefighter I Exam. Topics include fire alarm communication, fire department organization, fire hose, fire stream, water supplies, forcible entry and ventilation, ladders, organization, personal protective equipment and safety. Attendance for all sessions is mandatory. Class is graded P/F (Pass/Fail) basis. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

FIR-142 Firefighter I - Unit III (3)
Builds on skills developed in Firefighting Skills I and II. Provides the student with knowledge of the topics covered on the Firefighter I written exam. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

FIR-146 Firefighting Tactics and Strategy (3)
Studies methods of coordinating personnel, equipment and deploying apparatus on the fire ground. Practical methods of controlling and extinguishing structural and other types of fires are discussed. Includes simulation exercises. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

FIR-150 Fire Detection and Suppression Systems (3)
Covers the identification of system elements, the proper type for the occupancy as per code, fire department operations at premises, and inspection practices to ensure the system is operating and installed as required. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

FIR-180 Chemistry of Hazardous Materials (3)
Covers properties of chemistry in fire service. Types of chemicals, processes and legal requirements are discussed as they pertain to use, storage and transportation of chemicals. Credits: 3, Hours: (2.5/1/0/0), Prerequisite: MAT-102; Arts & Sciences Elective Code: B

FIR-183 Hazardous Materials Management (3)
Discusses the properties of chemically active substances related to hazardous materials. Identifies and demonstrates techniques, methods and strategies to mitigate haz-mat incidents. Covers state and federal laws as they relate to management of hazardous materials. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

FIR-201 Firefighter II (3)
Continues as the second level of standards-based certification available to candidates. Focuses on the basic principles of firefighting as they relate to Fire Fighter Professional Qualifications. Covers topics included in the Firefighter I program, and allows the candidate to participate in certification examinations to obtain Firefighter II certification based on NFPA 1001, 2002 edition. Credits: 3, Hours: (2.5/1/0/0), Prerequisite: FIR-289; Arts & Sciences Elective Code: B

FIR-213 Principles of Emergency Services (3)
Studies fire service nomenclature, career opportunities in fire protection, organization and functions of fire protection services, laws and regulations affecting the fire service, and fire departments as part of local government. Includes job shadowing with career firefighters. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

FIR-280 Instructional Techniques for Fire Service Training (3)
Covers concepts and techniques for conducting periodic company-level or small-unit training. The course emphasizes teaching principles applicable to in-service fire and rescue service skills training. Course meets NFPA standard 1041, 1992 version - covers objectives for Fire Instructor I and II as specified in this standard. Successful completion of this course allows the student to meet Iowa Fire Fighter I and Iowa Fire Instructor II course requirements as specified by the certifying agency - Fire Service Institute or Iowa State University. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

FIR-289 Firefighter I - Unit IV (2)
Prepares and guides the student for the department assignments necessary to become certified as Firefighter I. Requirements include giving a public education presentation and reviewing standard and safe operating procedures of a department. Course also includes CPR certification. Students must pass the Firefighter I exam through the Fire Service Institute to become certified. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

FIR-330 Fire Service Company Officer (3)
Introduces the basic principles and history related to national firefighter life safety initiatives. Focuses on the need for cultural and behavioral change across the emergency services. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

FIR-400 Fire & Emergency Services Safety & Survival (3)
Introduces the basic principles and history related to national firefighter life safety initiatives. Focuses on the need for cultural and behavioral change across the emergency services. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

FLC: Foreign Language - Chinese
FLC-141 Elementary Chinese I (4)
Develops functional abilities in the Chinese (Mandarin) language. Focuses on using Mandarin Chinese in linguistically, socially and culturally appropriate ways. Covers listening, speaking, reading, writing and cultural aspects of communication. Open to students with little or no previous study of Chinese. Credits: 4, Hours: (4/0/0/0), Arts & Sciences Elective Code: A

FLC-142 Elementary Chinese II (4)
Builds on language skills learned in Elementary Chinese I. Expands functional abilities in the Chinese (Mandarin) language and encourages improved use of Mandarin Chinese in linguistically, socially and culturally appropriate ways. Focuses on listening, speaking, reading, writing and cultural aspects of communication. Credits: 4, Hours: (4/0/0/0), Prerequisite: FLC-141; Arts & Sciences Elective Code: A

FLC-241 Intermediate Chinese I (4)
Concentrates on communicating Chinese (Mandarin) by practicing authentic language tasks to improve skills in reading, writing, speaking and listening. Focuses on building understanding of Chinese culture and extends students’ language use beyond contexts of elementary discourse. Course activities are conducted in Chinese. Credits: 4, Hours: (4/0/0/0), Prerequisite: FLC-142; Arts & Sciences Elective Code: A

FLC-242 Intermediate Chinese II (4)
Continues development in Chinese (Mandarin) communication, building upon cultural and linguistic skills. Focuses on practicing authentic language tasks to improve reading, writing, speaking and listening skills. Builds intermediate proficiency with extended discourse and expanding topics. Course activities are conducted in Chinese. Credits: 4, Hours: (4/0/0/0), Prerequisite: FLC-241; Arts & Sciences Elective Code: A

FLF: Foreign Language - French
FLF-141 Elementary French I (4)
Introduces the 5 Cs of second language acquisition (communication, cultures, connections, comparisons and communities) by developing the fundamental communicative skills of listening, speaking, reading and writing, and providing the opportunity to examine the practices and products of various francophone cultures. Making comparisons and connections between the French and English language, practices, products and people is an important course component. Open to students with little or no previous study of French. Credits: 4, Hours: (4/0/0/0), Arts & Sciences Elective Code: A

FLF-142 Elementary French II (4)
Continues to develop the 5 Cs of second language acquisition (communication, cultures, connections, comparisons and communities) by improving the fundamental communicative skills of listening, speaking, reading and writing acquired in Elementary French I. Examines the practices and products of francophone cultures. Includes discussion of the comparisons and connections that exist between various francophone cultures and language and our own. Credits: 4, Hours: (4/0/0/0), Prerequisite: FLF-141; Arts & Sciences Elective Code: A

FLF-241 Intermediate French I (4)
Develops the 5 Cs (communication, cultures, connections, comparisons and communities) by providing intensive practice in the fundamental communicative skills of listening, speaking, reading and writing, with a methodic study of
different cultural contexts and a review of the basic grammar. Examines the cultural practices and products of Francophone countries. Credits: 4; Hours: (4/0/0/0), Prereq: FLG-241; Arts & Sciences Elective Code: A

FLG-242 Intermediate French II (4)
Continues to develop the 5 Cs (communication, cultures, connections, comparisons and communities) by expanding the repertoire of realia (movies, readings, Internet explorations) and class activities. Provides continuous practice in developing the communicative skills and encourages group discussion about everyday subjects as well as the practices and products of Francophone cultures. Credits: 4; Hours: (4/0/0/0), Prereq: FLG-241; Arts & Sciences Elective Code: A

FLG-924 Honors Project (1)
Allows a qualified student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1; Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

FLG-928 Independent Study (1-3)
Provides for individualized learning beyond courses offered on a regular basis. Students work directly with a faculty member on furthering proficiency in several different areas of the student’s own choosing, e.g., reading comprehension, oral/oral proficiency, understanding of civilization and culture, etc. Credits: 1-3; Hours: (1-3/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

FLS: Foreign Language - Spanish

FLS-118 Spanish for Professionals: Hospitality (3)
Introduces the Spanish language with a special focus on culinary arts and hospitality. Covers vocabulary, grammar, reading and listening comprehension, and emphasizes oral communication in culinary and hospitality settings. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: B

FLS-128 Conversational Spanish (3)
Develops conversational skills in the Spanish language. The emphasis is on acquiring proficiency in communicating in Spanish in work situations. Includes activities that promote basic Spanish grammar, standardized and everyday vocabulary and basic understanding of Latin American culture. Credits: 3; Hours: (2/2/0/0), Arts & Sciences Elective Code: B

FLS-141 Elementary Spanish I (4)
Develops fundamental skills in the Spanish language. Emphasis is on acquiring the proficiency to communicate with the native speaker in everyday situations. Includes activities that promote an understanding and knowledge of the Spanish-speaking peoples and their culture. Credits: 4; Hours: (4/0/0/0), Arts & Sciences Elective Code: A

FLS-142 Elementary Spanish II (4)
Allows the student to communicate with others on subjects of daily common experience in most informal and a limited number of formal situations on activities related to family, work, health, friends, leisure activities, social life, environment, etc. The vocabulary used in this course is non-specialized, containing everyday words as well as frequently used expressions, all within a cultural context. Cultural facts from Spanish and Latin American cultures will also be presented in the classroom. Credits: 4; Hours: (4/0/0/0), Prereq: FLS-141; Arts & Sciences Elective Code: A

FLS-241 Intermediate Spanish I (4)
Provides practice of language beyond the controlled situations of the elementary course. Develops fundamental skills in Spanish through activities aimed at expressing original ideas and conveying messages in correct Spanish with the aid of authentic resources. Class activities offer advanced training in listening, speaking, reading, writing, and understanding the cultures of Spanish-speaking countries. Grammar study includes a review of previously introduced topics as well as new ones. Credits: 4; Hours: (4/0/0/0), Prereq: FLS-142; Arts & Sciences Elective Code: A

FLS-242 Intermediate Spanish II (4)
Enables students to continue to develop all communication skills, using primarily materials from literature, contemporary newspapers and magazines aimed at providing a better understanding of the Hispanic and Latin cultures and pertinent current issues. Class activities include pronunciation exercises, some grammar review and class discussion that promotes spontaneous conversation. Credits: 4; Hours: (4/0/0/0), Prereq: FLS-241; Arts & Sciences Elective Code: A

FLS-266 Advanced Spanish: Latin American and Spanish Culture (3)
Develops communication skills through the study of the history, literature and cultures of the Spanish-speaking countries of the world. May emphasize a specific area (Spain, Mexico, Central America, South America) or explore common aspects of all or several areas. Conducted in Spanish. May be repeated (elective credit second time). Credits: 3; Hours: (3/0/0/0), Prereq: FLS-232; Arts & Sciences Elective Code: A

FLS-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1; Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

GIS: Geographic Information Systems

GIS-110 Survey of Geographic Information Systems (3)
Introduces the applications of geospatial technologies, including Global Positioning Systems (GPS) and Geographic Information Systems (GIS). Explores global reference and coordinate systems, maps and generalization, as well as types of maps. Studies the basic components and
operation of GPS and GIS to develop an awareness of how they are used for data collection, analysis and decision-making in business, government and industry. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A; Comments: Understanding of basic computer literacy concepts and experience using Windows operating system and applications software. CSC-110 Intro to Computers is recommended.

**GIS-112 Introduction to ArcGIS (3)**
Provides an overview of the applications of geographic information systems (GIS). Focuses on ArcView, the software used to create, analyze, and display spatial data in a geographic information system. Hands-on computer exercises provide practical experience in several disciplines including city/government planning, site location and transportation. Credits: 3, Hours: (2/2/0/0), Coreq: CSC-110; Arts & Sciences Elective Code: B

**GIS-120 Geospatial Data Collection (3)**
Provides detailed instruction and hands-on use of GPS receivers to collect field data. Students locate and download data from multiple sources and understand the steps necessary to use the data in GIS software. Introduces spatial analysis, remote sensing and Landsat imagery, raster data and map algebra. Credits: 3, Hours: (2/2/0/0), Prereq: GIS-110, GIS-112; Arts & Sciences Elective Code: B

**GIS-122 Governmental GIS (3)**
Introduces mapping concepts employed in city and county offices. Students learn to read legal documents, to use coordinate geometry in order to enter parcel data and how to import CAD files into GIS. Includes the use of topological relationships and GIS in land, transportation and environmental operations of local, county, state and federal government offices. Credits: 3, Hours: (2/2/0/0), Prereq: GIS-110, GIS-112; Arts & Sciences Elective Code: B

**GIS-130 Remote Sensing (3)**
Introduces students to working with remotely sensed data. Students study how Landsat imagery is created to develop an understanding of how to read the images. Uses imagery software to analyze images, classify pixels, and understand how remotely sensed data is used in monitoring and managing the earth’s resources. Credits: 3, Hours: (2/2/0/0), Prereq: GIS-110, GIS-112; Arts & Sciences Elective Code: B

**GIS-210 Mapping for Decision Making (3)**
Provides a background in analyzing spatial data to make decisions. Students assemble data layers, discern patterns in the layers, construct maps necessary to analyze the data, and arrive at new information. Credits: 3, Hours: (2/2/0/0), Prereq: GIS-110, GIS-112; Arts & Sciences Elective Code: B

**GIS-212 Managing GIS Projects (3)**
Covers the steps necessary to develop and follow a project through to completion. Includes theories of management, tracking data and verifying that the completed task meets its intended purpose. Students work in teams to develop a project from start to finish. Credits: 3, Hours: (2/2/0/0), Prereq: GIS-110, GIS-112, GIS-122; Arts & Sciences Elective Code: A

**GIS-214 Internet Mapping Services (3)**
Introduces practical applications of Internet Mapping Services. Presents principles of cartography, data management and upkeep. Focuses on the uses of maps as user interfaces, the interactive elements of online maps, and creating and implementing online maps for specific audiences. Credits: 3, Hours: (2/2/0/0), Prereq: GIS-110, GIS-112, GIS-122; Arts & Sciences Elective Code: B

**GIS-220 GIS Field Study (1-3)**
Introduces the field of remote sensing. By analyzing remotely-sensed data in the lab and traveling to the site location, students describe the difference between real phenomena and how it is represented on a Landsat image. Uses aerial photography, topographic maps and Lidar Landsat imagery. Field work locations are determined annually by the GIS staff. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

**GIS-240 GIS Projects (3)**
Provides realistic experience in working on a GIS project. Students work with actual clients to complete a GIS project. Covers project communication, documentation and accuracy. Students conduct themselves as GIS professionals, meeting all necessary deadlines and goals communicated by the client. Credits: 3, Hours: (3/0/0/0), Prereq: GIS-110, GIS-112, GIS-122; Arts & Sciences Elective Code: B

**GLS: Global Studies**

**GLS-110 Global Leadership (1)**
Develops global perspectives and valuable skills necessary to effectively work in a global environment. Focuses on comparing and contrasting patterns of work-related and service practices in students’ home countries versus the US. Students develop leadership, personal responsibility, communication, conflict resolution and negotiation skills. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: B

**GLS-120 Education Experience Abroad (3)**
Provides a structured cross-cultural experience, including pre-departure cultural orientation, in-country immersion experience and culminating project. Includes history, religion, geography, philosophy, literature, anthropology, culture, fine arts, food, language and other relevant topics. Includes a short-term study abroad experience with additional fees for travel. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

**GRA: Graphic Communications**

**GRA-101 Survey of Graphic Communications (3)**
Introduces the graphic communication industry, including traditional layout and design techniques, electronic/traditional publishing, bindery operations and Internet design basics. Introduces the fundamental processes used in the graphic communication industry. Covers two-dimensional design concepts and production preparation. Explores current graphic design computer applications, as well as the Apple OS as it relates to its interaction with printers, servers and design.

**GRA-127 Illustrator I (3)**
Introduces Adobe Illustrator and its application in graphic communication. Learning activities include Adobe Illustrator tools as they apply to object (vector) based files, as well as Adobe Illustrator filters and layers. Students learn basic drawing and tracing techniques, creating line art, logos and learning how to simplify art work through stylizing. Creative use of type is also explored. Students learn how to set up color for reproduction. They also learn how to save and manage files created using these programs, as well as how these files interact with page layout, and paint (raster) programs. Credits: 3, Hours: (2/2/0/0), Prereq: GRA-101; Arts & Sciences Elective Code: B

**GRA-128 Illustrator II (3)**
Continues to explore vector drawing tools as they apply to object based files using the program Adobe Illustrator. Learning activities include more advanced drawing techniques, creating art of medium to high quality, and continue learning how to simplify artwork through stylizing. Students learn how to set up color for reproduction. They also learn how to save and manage files created using these programs, as well as how these files interact with page layout and paint (raster) programs. Credits: 3, Hours: (2/2/0/0), Prereq: GRA-127, GRA-131; Arts & Sciences Elective Code: B

**GRA-131 Digital Layout (3)**
Provides working knowledge of the InDesign page layout program and its use in creating effective page layouts combining graphics and type. Topics include the toolbox and tool usage, importing and editing text and graphics, master pages, use of styles, text and paragraph formatting, general layout and design concepts, printing operations, importing graphics and setting up text styles, columns and grids. Students create various single- and spot-color documents including fliers, newsletters and other printed material. Credits: 3, Hours: (2/2/0/0), Prereq: GRA-101; Arts & Sciences Elective Code: B

**GRA-132 Digital Layout II (3)**
Expands student knowledge of page layout programs using InDesign, including page setup, text and graphic frames, links management, use of spot and process colors within publications, how to color separate files, general layout and design concepts, and printing operations. Continues use of master pages, use of styles, text and paragraph formatting and effective use of type and graphics. Credits: 3, Hours: (2/2/0/0), Prereq: GRA-128, GRA-131; Arts & Sciences Elective Code: B

**GRA-140 Digital Imaging (3)**
Introduces electronic image editing software using Photoshop. Concepts covered include basic scanning techniques for grayscale and line art images; proper manipulation procedures required for various output sources, including input and output resolutions, file size, multiple file-saving formats, simple image enhancements and creating duotones; and creative application of Photoshop. Credits: 3, Hours: (2/2/0/0), Prereq: GRA-101; Arts & Sciences Elective Code: B
### Course Descriptions

**GRA-141 Digital Imaging II (3)**
Introduces color correction theory and practices, image enhancements using third-party plug-ins, effective use of layers, paint, adding type to images and color correction controls to create visually effective images. Strong emphasis is placed on properly preparing images for printing and publishing. Use of Photoshop for Web page design is also explored. Credits: 3, Hours: (2/2/0/0), Prereq: GRA-140; Arts & Sciences Elective Code: B

**GRA-152 Web Design II (4.5)**
Provides students with the knowledge to design a Web page using DHTML and other resources to incorporate animation and interactivity on their Web pages. Also covered are building forms and utilizing JavaScript on Web pages. Students are responsible for designing all elements of their own Web page. Credits: 4.5, Hours: (3/3/0/0), Prereq: GRA-140, CIS-207; Arts & Sciences Elective Code: B

**GRA-153 Web Media II (3)**
Continues Web content development and interactivity using Flash, Illustrator and Photoshop as the primary tools. Explores intermediate video editing and enhancement using Adobe Premier and After Effects. Requires working through Web content scenarios and developing Web design layouts, navigation interactivity, Web animations and multimedia applications. Interactive content and design are used in students’ final Graphic Communication portfolio. Credits: 3, Hours: (2/2/0/0), Prereq: GRA-127, GRA-131, GRA-140; Arts & Sciences Elective Code: B

**GRA-192 Production Techniques (4.5)**
Provides real and realistic hands-on experience, building on skills learned to date. Covers pre- and post-production project issues for both print and Web. Emphasizes managing multiple projects and deadlines, and working with other people, in part through a storefront scenario. Students work with actual clients in a team-based (company) operation, present packaging design and production, then practice design, output and proofing options. Students develop and present an analog portfolio of their graphic design and production skills. Credits: 4.5, Hours: (3/3/0/0), Prereq: CIS-207, GRA-128, GRA-132, GRA-140, GRA-195; Arts & Sciences Elective Code: B

**GRA-195 Introduction to Web Media (3)**
Provides introductory skills in Web content development and interactivity using Flash, Illustrator and Photoshop as the primary tools. Students work through textbook-based Web content scenarios to develop Web design concepts, layouts, navigation and interactivity, as well as Flash-based Web animations. Students develop interactive content and design to be used in their final (GRA-151) Web Design project. Credits: 3, Hours: (2/2/0/0), Prereq: GRA-127, GRA-131; Arts & Sciences Elective Code: B

**GRA-199 Graphic Communication Job Shadowing (1)**
Provides an opportunity to receive experience through job shadowing sessions with an approved graphic communications business. Students receive valuable learning experience in area businesses. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

**GRA-924 Honors Project (1)**
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

**GRA-928 Independent Study (1-3)**
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

**HCM: Hospitality, Culinary, Management**

**HCM-100 Sanitation and Safety (2)**
Studies basic principles of bacteriology, food borne illness, sanitation, workplace safety, personal hygiene, food security, health regulations and inspections. Emphasizes the importance of sanitary equipment and facilities, and pest control. Students must complete the National Restaurant Association Educational Foundation certification exam to pass this course. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

**HCM-109 Kitchen Essentials (1.5)**
Familiarizes students with standard operating procedures, employee practices and the tools and equipment used in a commercial food service operation. Students practice skills in work simplification, equipment operation and cleaning, recipe writing and standardization. Emphasizes food sanitation, personal hygiene and safety in the kitchen. Credits: 1.5, Hours: (5/2/0/0), Coreq: HCM-100, HCM-260; Arts & Sciences Elective Code: B

**HCM-117 Bakery Basics (3)**
Provides theory on basic baking methods and lab experience in preparing bakery products. Emphasizes yeast products, quick breads, pies, cakes, pastry doughs, custards, puddings and cookies. Stress the preparation and making of bakery products. Emphasis is also placed on sanitation, personal hygiene and safety. Costs $20 per student. Credits: 3, Hours: (3/0/0/0), Prereq: HCM-100, HCM-260; Arts & Sciences Elective Code: B

**HCM-117 Bakery Basics (3)**
Provides theory on basic baking methods and lab experience in preparing bakery products. Emphasizes yeast products, quick breads, pies, cakes, pastry doughs, custards, puddings and cookies. Stress the preparation and making of bakery products. Emphasis is also placed on sanitation, personal hygiene and safety. Costs $20 per student. Credits: 3, Hours: (3/0/0/0), Prereq: HCM-100, HCM-260; Arts & Sciences Elective Code: B

**HCM-117 Bakery Basics (3)**
Provides theory on basic baking methods and lab experience in preparing bakery products. Emphasizes yeast products, quick breads, pies, cakes, pastry doughs, custards, puddings and cookies. Stress the preparation and making of bakery products. Emphasis is also placed on sanitation, personal hygiene and safety. Costs $20 per student. Credits: 3, Hours: (3/0/0/0), Prereq: HCM-100, HCM-260; Arts & Sciences Elective Code: B

**HCM-122 International Breads (3)**
Provides expanded theory on bread baking, and additional lab experience in preparing yeast and quick bread products. Includes identification of special ingredients, traditional shaping techniques, costing and selection of ingredients, preparation procedures, use and care of bakery equipment, sanitation and work simplification. Introduces the history and traditional uses of breads. Credits: 3, Hours: (1/0/0/0), Prereq: HCM-117, HCM-125, HCM-126; Arts & Sciences Elective Code: B

**HCM-123 Internation Pastries (3)**
Provides additional theory and lab experience in preparing pastries representative of cultural traditions of the world. Stress baking processes, use and care of equipment of bakery equipment, sanitation, safety, work simplification, costing and production of high quality pastry items. Includes research into cuisines of the world and associated pastries. Credits: 3, Hours: (1/4/0/0), Prereq: HCM-117, HCM-126; Coreq: HCM-125; Arts & Sciences Elective Code: B

**HCM-125 Basic Cake Decorating (1)**
Provides instruction for the beginning cake decorator. Emphasizes practical border work, cake writing, figure piping, flowers, wedding cake assembly and airbrushing. Students utilize decorator's tools, practice basic decorating design, techniques and develop artistic creativity. Equipment required. Credits: 1, Hours: (0/2/0/0), Prereq: HCM-100; Arts & Sciences Elective Code: B

**HCM-126 Science of Baking (2)**
Introduces food science principles as applied to baking and pastry arts. Explores the functions of bakery ingredients using scientific methods. Students create, compare and revise recipes with an emphasis on quality, nutrient content and cost. Introduces sensory evaluation of food. Credits: 2, Hours: (1/2/0/0), Prereq: HCM-100; Arts & Sciences Elective Code: B

**HCM-127 Advanced Cake Decorating (1)**
Provides advanced skills in the art of cake decorating, including fondant icing and its use in the baking industry; designing tiered and multi-level cakes; and making decorations and floral arrangements with gum. Credits: 1, Hours: (0/2/0/0), Prereq: HCM-125; Arts & Sciences Elective Code: B

**HCM-130 Plated Desserts (1)**
Provides experience in the preparation of fine dining style plated desserts. Students rotate through different dessert components making sauces, pastries, mousses, fillings, cakes, and ice creams. Students learn how to make with chocolate, pastillage, cooked sugar and pastry garnishes, adding extra dimension to desserts. Each week the class focuses on new desserts, learning how to plate and serve sweet works of art. Credits: 1, Hours: (0/2/0/0), Prereq: HCM-117; Arts & Sciences Elective Code: B

**HCM-133 Fabrication I (1.5)**
Studies the fabrication of meats including beef, pork, poultry and fish in a lab setting. Stresses proper cooking methods for various cuts, and the importance of cooking and yield tests. Emphasizes proper kitchen procedures, use and care of equipment, sanitation, safety, cost control and efficient work methods. Credits: 1.5, Hours: (.5/2/0/0), Prereq: HCM-100, HCM-138, HCM-260; Arts & Sciences Elective Code: B

**HCM-134 Fabrication II (1.5)**
Studies the fabrication of meats including lamb, veal, seafood, duck, quail, pheasant and offal in a lab setting. Stresses proper cooking methods for various cuts, and the importance of cooking and yield tests. Emphasizes proper kitchen procedures, use and care of equipment, sanitation, safety, cost control and efficient work methods. Credits: 1.5, Hours: (.5/2/0/0), Prereq: HCM-133; Arts & Sciences Elective Code: B
HCM-138 Food Fundamentals (3)
Studies the composition of foods and the scientific principles involved in food preparation. Emphasizes basic food handling competencies and cookery techniques. Students work with herbs, spices, dairy, eggs, fruits, vegetables, starches, stocks, sauces and soups, learning to produce quality products. Focuses on the development of proper kitchen procedures, use and care of equipment, sanitation, cost control and efficient work methods. Credits: 3; Hours: (1/4/0/0). Prereq: HCM-147; Coreq: HCM-100, HCM-260; Arts & Sciences Elective Code: B

HCM-140 Fabrication (3)
Studies the fabrication of meats including beef, pork, poultry, lamb, fish and seafood in a lab setting. Stresses proper cooking methods for various items and cuts, and the importance of cooking and yield tests. Emphasizes proper kitchen procedures, use and care of equipment, sanitation, safety, cost control and efficient work methods. Credits: 3; Hours: (1/4/0/0). Prereq: HCM-161; Arts & Sciences Elective Code: B

HCM-147 Culinary Techniques (1.5)
Introduces fundamental cookery methods in a blended lab and theory environment. Explores the theory behind cookery methods before applying that theory when producing various dishes. Introduces moist heat, dry-heat and combination cookery methods. Emphasizes knife skills and the use and care of kitchen equipment, sanitation, safety, kitchen procedures, cost control and efficient work methods. Credits: 1.5; Hours: (1/5/2/0/0). Prereq: HCM-109; Coreq: HCM-100, HCM-260; Arts & Sciences Elective Code: B

HCM-161 Stocks and Sauces (1.5)
Develops student understanding of and practical skills in the production of stocks, sauces and a variety of condiments. Emphasizes modern and classical sauce techniques. Develops general kitchen production skills through repeated performance. Reinforces proper use and care of equipment, sanitation, safety, cost control and efficient work methods. Credits: 1.5; Hours: (1/5/2/0/0). Prereq: HCM-100, HCM-138; Arts & Sciences Elective Code: B

HCM-166 Culinary Arts (4)
Emphasizes advanced culinary competencies while rotating through various stations in a full-service, operating restaurant kitchen. Requires hands-on food preparation experience at breakfast, lunch and dinner in the restaurant. Emphasizes proper kitchen procedures, kitchen management, team work, use and care of equipment, sanitation, safety, cost control and efficient work methods. Credits: 4; Hours: (2/0/6/0). Prereq: HCM-140, HCM-181, HCM-269; Arts & Sciences Elective Code: B

HCM-181 International Cuisine (4)
Introduces various international cuisines and their ingredients, preparation methods and cultural influences. Provides further practical experience in preparing quality food, and practice in following standard recipes to prepare a variety of dishes with varying degrees of difficulty. Students work individually and produce their own work independent of others in the class. Emphasizes critical thinking skills as students evaluate their completed dishes. Reinforces proper kitchen procedures, use and care of equipment, sanitation, safety, cost control and efficient work methods. Credits: 4; Hours: (1/6/0/0). Prereq: HCM-138, HCM-140; Arts & Sciences Elective Code: B

HCM-190 Bakery Essentials (1)
Familiarizes students with standard operating procedures, and the tools and equipment used in a commercial bakery. Students practice skills in: work simplification, mixing techniques, ingredient identification, equipment operation and cleaning, recipe writing and standardization. Emphasizes food sanitation, personal hygiene and safety in the bakery. Credits: 1; Hours: (0/2/0/0). Coreq: HCM-100; Arts & Sciences Elective Code: B

HCM-204 Service Techniques (3)
Defines and describes points of service in restaurant and banquet functions. Discusses sales techniques, cash handling standards, methods of customer satisfaction, and other topics related to the smooth operation of any restaurant or catered event. Requires hands-on experience at breakfast, lunch and dinner in a full-service restaurant. Emphasizes proper service procedures, cost control and efficient work methods. Credits: 3; Hours: (1/0/6/0). Prereq: HCM-100; Arts & Sciences Elective Code: B

HCM-213 Service Management (Lab) (4)
Allows students to perform as supervisors and managers in the dining areas. Requires management techniques and theories in working with others to create a successful restaurant environment, under the direction of professional staff. Emphasizes computer application in analyzing food and beverage costs, labor costs and other operating costs as applied to the Class Act restaurant. Credits: 4; Hours: (2/0/6/0). Prereq: HCM-100, HCM-204, HCM-260; Arts & Sciences Elective Code: A

HCM-227 Menu Planning (1)
Studies the principles of menu marketing and management. Focuses on writing and analyzing menus for various food service groups, types of food service facilities and service styles, then designing a menu cover. Credits: 1; Hours: (1/0/0/0). Prereq: HCM-100, HCM-138; Arts & Sciences Elective Code: B

HCM-231 Nutrition (2)
Reviews basic nutritional concepts in relation to current health concerns and the food service industry. Includes practice in recipe and menu modification to improve nutrition. Upon successful completion of a national test, students are certified by the National Restaurant Association Educational Foundation. Credits: 2; Hours: (2/0/6/0). Arts & Sciences Elective Code: B

HCM-251 Purchasing, Receiving and Inventory (2)
Studies principles in purchasing, receiving, issuing and inventory management. Emphasizes cost management techniques. Students practice skills in a clinical lab experience supervised by the purchasing manager. Credits: 2; Hours: (1/5/0/1.5). Prereq: HCM-100, HCM-260; Arts & Sciences Elective Code: B

HCM-256 Cost Control and Merchandising (3)
Defines and describes the cost control process in a foodservice operation. Emphasizes cost control methods in the purchasing, receiving, storing, storage, production and service stages. Practices specification writing, recipe costing, menu pricing and product yield tests. Offers basic instruction in bakery merchandising, and opportunities to create bakery product displays. Credits: 3; Hours: (3/0/0/0). Prereq: HCM-260; Arts & Sciences Elective Code: B

HCM-260 Hospitality Math (3)
Reviews the fundamentals of mathematics, including calculating percent, ratios, decimals, fractions, weights and measures, and introductory algebra concepts. Emphasizes application of mathematical fundamentals to a variety of culinary and hospitality use. Includes equivalencies, recipe costing and conversion, calculating food and labor cost percentages, baker's percentages, yield conversions, and selling prices. Credits: 3; Hours: (3/0/0/0). Arts & Sciences Elective Code: B

HCM-268 Baking for Dietary Restrictions (2)
Provides fundamental knowledge necessary to accommodate baking for customers with restrictive dietary needs, including diabetes, celiac intolerance, heart conditions and common allergies. Focuses on comparing, revising and producing recipes in a lab environment, with an emphasis on evaluating product quality and ingredients relating to special needs baking. Credits: 2; Hours: (1/2/0/0). Prereq: HCM-100, HCM-117, HCM-122, HCM-123, HCM-126, HCM-260; Arts & Sciences Elective Code: B

HCM-269 Garde Manger (lab/leo) (1.5)
Introduces basic cold food preparation and presentation, including sandwiches, salads, salad dressings and simple cold appetizers. Emphasizes proper kitchen procedures, use and care of equipment, sanitation, safety, cost control and efficient work methods. Credits: 1.5; Hours: (1/5/2/0/0). Prereq: HCM-100, HCM-138; Arts & Sciences Elective Code: B

HCM-273 Advanced Garde Manger (3)
Studies advanced techniques in cold food preparation and presentation techniques. Emphasizes charcuterie, aspers, various garnishes, terrines, hors d'oeuvre, charcuterie and food decorating. Focuses on proper kitchen procedures, use and care of equipment, sanitation, safety, cost control and efficient work methods. Credits: 3; Hours: (1/4/0/0). Prereq: HCM-140, HCM-181, HCM-269; Arts & Sciences Elective Code: B

HCM-279 Hospitality Accounting (3)
Provides an understanding of basic accounting concepts and procedures relevant to hotel and food service operations. Includes recording transactions, understanding financial statements, managing inventory, payroll problems, occupancy issues and other special topics. Credits: 3; Hours: (3/0/0/0). Prereq: HCM-260; Arts & Sciences Elective Code: B

HCM-290 Wedding Cake Decorating (1)
Provides theory and experience in designing and preparing traditional and contemporary multi-layered wedding cakes. Includes the process of taking cake orders from customers, and procedures required for delivery and set up of wedding cakes. Studies current trends related to wedding cake production. Credits: 1; Hours: (0/2/0/0). Prereq: HCM-100, HCM-125; Arts & Sciences Elective Code: B
Course Descriptions

HCM-295 Professional Production (4)
Provides an opportunity to receive on-the-job training with the professional bakers at The Hotel at Kirkwood Center. Maximizes exposure and training depth through learning experiences related to the production demands of the commercial outlets of The Hotel. Credits: 4, Hours: (1/0/0/0), Prereq: HCM-100, HCM-122, HCM-123, HCM-125, HCM-126, HCM-260; Arts & Sciences Elective Code: B

HCM-310 Hospitality Law (3)
Reviews legal subjects relevant to the hospitality industry. Emphasis on government regulations, food and liquor liability, patron rights and safety, employer/employee rights and responsibilities, the court system, and business management. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

HCM-315 Wine, Beer and Spirits Basics (3.5)
Identifies characteristics of alcoholic beverage classifications including wine, beer and spirits. Describes fermentation, brewing and distillation. Reviews alcoholic service basics and beverage control laws. Weighted toward wine, this class introduces wine classifications, characteristics, tasting and pairings with food. Credits: 3.5, Hours: (2.5/2/0/0), Arts & Sciences Elective Code: B

HCM-317 Advanced Wine, Beer and Spirits (3)
Expands upon knowledge and enhances skills acquired in prerequisite to improve student's ability to critically taste wine, beer and spirits. Emphasizes the relationship between food and alcoholic beverages. Introduces mixology and bar management. Credits: 3, Hours: (2/2/0/0), Prereq: HCM-315; Arts & Sciences Elective Code: B

HCM-321 Introduction to Hospitality Industry (1)
Develops an understanding of the hospitality industry and career opportunities in close cooperation with the college's Career Services department. Students create an education and career portfolio. Credits: 1, Hours: (1/0/0/0), Coreq: HCM-324; Arts & Sciences Elective Code: B

HCM-324 College Orientation (1)
Provides group orientation and activities for hospitality students enrolled in applied science programs. Reviews program requirements, along with department and college policies and procedures. Focuses on academic planning, identifying campus resources and being a successful student at Kirkwood. Includes introduction of academic and career portfolio development. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

HCM-326 Basic Hospitality Communications (3)
Allows students to improve English writing skills (grammar and mechanics), listening skills, phone and e-mail etiquette, and basic customer service skills. Enhances skills through exercises applicable to the hospitality industry. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-013; Arts & Sciences Elective Code: B

HCM-330 Hospitality Personnel Management (3)
Introduces the functions of human resource management, including, planning, communicating, recruiting, hiring, training, coaching, counseling, discipline, performance evaluation, termination and labor relations. Emphasizes the legal issues related to managerial decisions, motivation and managing diversity. Students are certified by the National Restaurant Association Educational Foundation upon successful performance on the national test. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

HCM-340 Hospitality Events and Catering (FOH) (3)
Applies and refines, in a rigorous practical setting, competencies mastered in previous course work within the Culinary Arts program. Students must demonstrate front-of-the-house management skills as they plan, produce and successfully execute college catering events. Emphasizes quality product and service, financial performance, teamwork and customer satisfaction, along with demonstrated mastery of refined competencies. Credits: 3, Hours: (1/0/6/0), Prereq: HCM-213, HCM-227; Arts & Sciences Elective Code: B; Comments: Students must be flexible to attend class during the day, evenings and weekends

HCM-342 Hospitality Events and Catering (BOH) (3)
Applies and refines, in a rigorous practical setting, competencies mastered in previous course work within the Culinary Arts program. Students must demonstrate back-of-the-house management skills as they plan, produce and successfully execute college catering events. Emphasizes quality product and service, financial performance, teamwork and customer satisfaction, along with demonstrated mastery of refined competencies. Credits: 3, Hours: (1/0/6/0), Prereq: HCM-117, HCM-166, HCM-227, HCM-231; Arts & Sciences Elective Code: B; Comments: Students must be flexible to attend class during the day, evenings and weekends

HCM-402 Culinary Competition (2)
Emphasizes skills and techniques for preparing foods for culinary competitions. American Culinary Federation culinary guidelines are followed. Students prepare showpieces and platters, and participate in culinary shows and competitions. Credits: 2, Hours: (0/4/0/0), Prereq: HCM-181; Arts & Sciences Elective Code: B

HCM-404 Culinary Travel Studies (1-3)
Focuses on the history, culture and cuisine of a specific geographic region, with the major emphasis on cuisine. This course is offered for variable credit and includes a study tour of a specific geographic region. May be repeated for credit. Credits: 1-3, Hours: (1-3/0/0/0), Arts & Sciences Elective Code: B

HCM-530 Culinary Capstone (1)
Integrates the skills, knowledge, professional qualities and attributes required by the industry. Requires students to create a multi-course menu and demonstrate proficiency in a number of crucial functions, including ingredient preparation, fabrication, sauce production, application of classical cooking methods, mathematical decision-making, cost control, sanitation and nutritional analysis. Credits: 1, Hours: (.5/1/0/0), Prereq: HCM-166, HCM-227, HCM-231, HCM-273; Coreq: HCM-342; Arts & Sciences Elective Code: B

HCM-596 Uniformed Services (2)
Defines and describes the various positions within the uniform services department of a hotel. Provides hands-on experience by a rotation through various stations: bell stand, valet parking, doorman and concierge. Credits: 2, Hours: (1/0/3/0), Prereq: HCM-600; Arts & Sciences Elective Code: B

HCM-597 Front Office Management (4)
Presents a systematic approach to front office procedures by detailing the flow of business through the entire guest cycle. Examines the various elements of effective front office management including forecasting and revenue management, front office planning and operation, and management of human resources. Requires students to perform various duties throughout the front office. Prepares the student for an externship at a select-service hotel or rooms division position at a full-service property. Credits: 4, Hours: (2.5/0/4.5/0), Prereq: HCM-600, HCM-601; Arts & Sciences Elective Code: B

HCM-599 Engineering and Risk Management (1)
Provides exposure to various mechanical systems within a hotel, including fire suppression, heating and cooling, geothermal, kitchen and laundry equipment, surveillance systems, communication systems, alarm systems and guestroom security equipment, such as locks. Discusses guest protection and internal security for asset protection. Explores risk management and loss prevention issues and outlines OSHA regulations that apply to lodging properties. Credits: 1, Hours: (1/0/0/0), Prereq: HCM-597, HCM-602; Arts & Sciences Elective Code: B

HCM-600 Introduction to Lodging Operations (2)
Provides students with an overview of the lodging industry and how its functions are organized and operated. Each of the seven traditional disciplines is introduced: general management, hotel sales, financial control, rooms operations, food and beverage operations, human resources, and physical plant maintenance. Business ethics and effective communication are also emphasized. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

HCM-601 Housekeeping and Laundry Operations (3)
Provides students with the principles of housekeeping management and laundry operations in the hotel industry. Emphasizes direct day-to-day operations, from big-picture management issues such as inventory and human resources, to technical details for cleaning each hotel area. Gives students the opportunity to learn first-hand the duties of hotel room attendants and to work in the hotel laundry. Credits: 3, Hours: (1.5/0/4.5/0), Coreq: HCM-600; Arts & Sciences Elective Code: B

HCM-602 Introduction to Food and Bar Operations (3)
Focuses on the management of food and beverage operations in lodging establishments. In-
includes stewarding, banquets, restaurant, beverage and room service. Prepares students for internships in lodging operations. Credits: 3, Hours: (3/0/0/0), Prereq: HCM-600; Arts & Sciences Elective Code: B

HCM-603 Hotel Sales and Catering (3)
Examines sales department activities related to group and transient business. Includes developing leads, building relationships, closing the sale, servicing groups and account follow-up/maintenance. Discusses group meeting trends and practices. Explores the discipline of revenue management to determine the applicability of revenue maximization strategies and their operational aspects. Students will be given the opportunity to experience a professional sales and catering department first-hand by working with The Hotel Sales & Catering staff. Credits: 3, Hours: (2/0/3/0), Prereq: MKT-110, HCM-932; Arts & Sciences Elective Code: B

HCM-614 Leadership in Hospitality (3)
Examines the profound difference between management and leadership in the hotel industry. Utilizes case studies to explore power and empowerment, quality management, high-performance teams, ethics and various management philosophies. Requires utilization of competencies mastered in previous course work within the Hotel Management program as students participate in The Hotel's Manager on Duty (MOD) program. Students must be flexible in assuming MOD shifts which will encompass evenings, weekend and overnights. Credits: 3, Hours: (2/0/3/0), Prereq: HCM-597, HCM-602, HCM-932; Arts & Sciences Elective Code: B

HCM-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

HCM-928 Independent Study (1-3)
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

HCM-932 Internship (0.5-4)
Provides an opportunity to receive on-the-job training at The Hotel at Kirkwood Center. Maximizes exposure and training depth through learning experiences structured by the program coordinator and training sponsor. May focus on one position/department or may be structured to encompass numerous areas within the hotel. Credits: 0.5-4, Hours: (0/0/0/32-256), Prereq: HCM-597, HCM-602; Coreq: HCM-213, HCM-599; Arts & Sciences Elective Code: B

HCM-932 Internship (0.5-4)
Provides an opportunity to receive on-the-job training at The Hotel at Kirkwood Center. Maximizes exposure and training depth through learning experiences structured by the program coordinator and training sponsor. May focus on one position/department or may be structured to encompass numerous areas within the hotel. Credits: 0.5-4, Hours: (0/0/0/32-256), Prereq: HCM-597, HCM-602; Coreq: HCM-213, HCM-599; Arts & Sciences Elective Code: B

HCM-933 Hotel Externship (1-4)
Provides an opportunity to receive on-the-job training at an approved hotel. Maximizes exposure and training depth through learning experiences structured by the program coordinator and the training sponsor. May focus on one position/department or may be structured to encompass numerous areas within the hotel. Credits: 1-4, Hours: (0/0/0/4-16), Prereq: HCM-597, HCM-602; Arts & Sciences Elective Code: B

HCM-934 Internship Seminar (2)
Provides an opportunity to receive experience through on-the-job training at The Hotel at Kirkwood Center. Maximizes exposure and training depth through learning experiences structured by the program coordinator and training sponsor. Rotation typically includes time in Guest Services, and Housekeeping and Laundry, but arrangements may be made to encompass other areas within The Hotel at Kirkwood Center. Credits: 2, Hours: (2/0/0/0), Prereq: HCM-597, HCM-602; Coreq: HCM-935; Arts & Sciences Elective Code: B

HCM-935 Hotel Internship (1)
Provides an opportunity to receive on-the-job training at The Hotel at Kirkwood Center. Maximizes exposure and training depth through learning experiences structured by the program coordinator and training sponsor. May focus on one position/department or may be structured to encompass numerous areas within The Hotel. Credits: 1, Hours: (0/0/0/4), Prereq: HCM-597, HCM-602; Coreq: HCM-934; Arts & Sciences Elective Code: B

HCR: Heating and Air Conditioning

HCR-410 Electrical Applications I (3)
Covers general knowledge of basic electrical applications used by industry. Use of basic electrical equipment including multimeters is stressed. Topics include current, voltage, resistance, symbols, and basic AC and DC circuits. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

HCR-450 Electrical Apps for HVAC II (3)
Continues the coverage of electrical applications used by HVAC installers. Students learn a more thorough explanation of voltage and current, including basic measuring techniques and safety concerns. Motors and transformers in their typical applications are also included. Credits: 3, Hours: (2/2/0/0), Prereq: HCR-410; Arts & Sciences Elective Code: B

HCR-600 Pipe Joining Methods (3)
Covers the correct techniques to use when joining pipes. Students learn correct techniques for making a solder joint, a brazed joint and a threaded joint. Alternative techniques are also taught, including flare, crimp and compression. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

HCR-605 HVAC Installation I (5)
Provides a comprehensive introduction to designing and installing HVAC systems. Students learn sheet metal fabrication and installation, basic principles of heat transfer, and the basic refrigeration cycle applied to air conditioning. Credits: 5, Hours: (2/6/0/0), Arts & Sciences Elective Code: B

HCR-610 HVAC Installation II (7)
Provides a comprehensive introduction to designing and installing HVAC systems. Other topics covered include refrigerant handling procedures, gas piping and sizing, chimney and vent calculations, and the uniform mechanical code. Credits: 7, Hours: (3/8/0/0), Prereq: HCR-605; Arts & Sciences Elective Code: B

HCR-710 Fundamentals of Plan and Print Reading (2)
Covers the fundamentals of blueprints and floor plans used for common layouts. Includes dimensions, specifications and interpretation of details found on typical sets of plans. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

HIS: History

HIS-121 Ancient Mediterranean World (3)
Surveys the cultural, religious, political and social heritage of the ancient Near Eastern people as the foundation of Western civilization. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HIS-122 Europe in the Age of Monarchy (3)
Explores the social, cultural, intellectual, economic and political foundations of Western civilization in Europe from the Middle Ages to Absolutism and Constitutionalism. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HIS-123 Europe in the Age of Revolution (3)
Studies four revolutions - the Scientific, French, Industrial and 19th Century Liberal revolutions - that changed the traditional Western society into the modern world. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HIS-124 Europe in the Age of Nationalism (3)
Examines themes of modern European civilization. Emphasis is on the development of nationalism, the rise of Communism and Fascism, and the changes in the present society. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HIS-135 Modern World Military History (3)
Examines the development of modern warfare from the Napoleonic Era to the present, using a multi-disciplinary approach. Focuses on how national and international politics, technology, social issues, economics, religion, and ideology shape military policy, expectations, outcomes and cultural expressions. Concentrates on key conflicts throughout multiple regions to illustrate the evolving dynamics of strategy and tactics. Discusses warfare's different forms: conventional, guerrilla and nuclear. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A
**HIS-151 U.S. History to 1877 (3)**
Studies the European background, the colonial experience, the revolutionary period and 19th century history. Includes political, economic and social history of this period as well as the development of American thought. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

**HIS-152 U.S. History Since 1877 (3)**
Studies the period from reconstruction to the present. Emphasis is upon industrialization and its impact; the development of a strong federal government; an aggressive foreign policy; and a growing involvement in an international economy. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

**HIS-221 Holocaust and Genocide in Memory and Literature (3)**
Explores the reasons for the Holocaust and the nature and history of anti-Semitism. Analyzes why the Holocaust/Final Solution occurred in Germany. Studies resistance and both collaboration and resistance between Nazism and foreign countries. Compares the Holocaust aimed at the extermination of the Jews with genocide and extermination of other groups in history. Uses a comparative framework. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

**HIS-254 American Indian History (3)**
Examines American Indian societies from the colonial era to the present, using a cross-cultural framework focusing on six major geographical areas of the United States: New England and the Northeast, the Southeast, the Great Lakes region, the Plains, the Southwest and the Northwest. Emphasizes American Indian cultures, including religion and socio-political structure. Examines American Indian responses to federal Indian policy, including removal, allotment and termination, as well as present-day issues related to revitalization. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

**HIS-291 History of Science (3)**
Covers major aspects of the history of science from the early modern period into the 20th century. As this is a history course, not a science or technology course, the emphasis is on the historical backgrounds of various scientific ideas. The course focuses on some of the major figures in the development of modern Western science including Newton, Darwin, Faraday and Einstein. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

**HIS-924 Honors Project (1)**
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

**HIS-928 Independent Study (1-3)**
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

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**HIT: Health Information Technology**

**HIT-220 Introduction to Medical Coding (2.5)**
Studies basic disease and procedural coding of the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM). Credits: 2.5, Hours: (2.5/0/0/0), Coreq: BIO-168, HIT-360, HSC-115; Arts & Sciences Elective Code: A

**HIT-240 Advanced Coding and Classification (3)**

**HIT-280 CPT-4 Coding (3)**

**HIT-291 Reimbursement Methods (2.5)**
Introduces prospective payment systems for inpatient health care (Diagnosis Related Groups-DRG) and ambulatory health care (Ambulatory Patient Classifications-APC). Explores Local Coverage Determination (LCD) and the Resource Based Relative Value System (RBRVS). Focuses on fraud and abuse issues, coding compliance, and the National Correct Coding Guide. Includes practical application of diagnosis and procedural coding as well as DRG and APC assignment. Credits: 2.5, Hours: (2.5/0/0/0), Prereq: HIT-240; Arts & Sciences Elective Code: B

**HIT-350 Health Information Systems (2.5)**
Provides an overview of the use of automated information systems in the health care delivery system. Introduces terminology and essential concepts of health information systems and management of data. Examines data integrity and privacy/security issues affecting the access to and use of patient information. Credits: 2.5, Hours: (2.5/0/0/0), Prereq: CSC-110, HIT-360; Arts & Sciences Elective Code: B

**HIT-360 Introduction to Health Information Technology (3)**
Provides an overview of the health information management profession, and the development, content and analysis of medical records in health care settings. Students will learn the importance of health information management in reimbursement and different classification systems. Includes legal issues in medical records, patient confidentiality, form construction and design, numbering systems, indexes, and registries. Explores health information storage and retention systems and computerization of health records. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

**HIT-420 Legal Aspects of Health Information (2)**
Includes use of the medical record as a legal document, release of information, consents, the medical record in legal proceedings and an overview of current health legislation. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

**HIT-431 Quality Improvement (3)**
Focuses on quality assessment and performance improvement in health care settings and the role of health information management professionals in quality improvement, utilization management, credentialing and risk management. Simulations of quality assessment and utilization management functions, the role of peer review organizations and their impact on health information are included. Credits: 3, Hours: (3/0/0/0), Prereq: HIT-360; Arts & Sciences Elective Code: B

**HIT-450 Health Statistics (2)**
Empasizes abstracting of medical records and computer input of data. Includes basic mathematical and statistical principles, hospital statistics and formulas, vital and public health data sources. Discusses presentation of data and data quality. Credits: 2, Hours: (2/0/0/0), Prereq: HIT-360, MAT-731; Arts & Sciences Elective Code: B

**HIT-490 Health Management and Supervision (3.5)**
Provides basic principles of personnel supervision including developments and considerations vital to the performances of supervisors in today’s health care environment. Credits: 3.5, Hours: (3.5/0/0/0), Prereq: HIT-552; Arts & Sciences Elective Code: B

**HIT-495 Medical Office Management (2.5)**
Present concepts and procedures in relation to medical office management, phone etiquette, patient scheduling, patient medical recordkeeping, manual and computerized bookkeeping, and ordering of office supplies. Credits: 2.5, Hours: (2.5/0/0/0), Arts & Sciences Elective Code: B

**HIT-550 Professional Practice Experience I (2.5)**
Combines the theory of health information management with supervised practice in selected health care settings. Introduces the student to the Health Information Management/Medical Record department, its specific health information systems, filing systems, numbering systems, indexes, registries, etc., including health care provider specific coding practices. Coordinated by the college. Credits: 2.5, Hours: (0.5/0/0/0), Coreq: HIT-220, HIT-360; Arts & Sciences Elective Code: B

**HIT-551 Professional Practice Experience II (1)**
Combines the theory of health information management in a physician’s office. Provides practical application in specific health information systems, filing systems, numbering systems and provider specific coding practices. Coordinated by the college. Credits: 1, Hours: (1/0/0/0), Prereq: HIT-550; Arts & Sciences Elective Code: B

**HIT-552 Professional Practice Experience III (3)**
Combines the theory of health information management in selected health care settings with experiences in health information systems, quality assurance, coding of diseases and procedures, and medical record management. Credits: 3,
Course Descriptions

Hours: (0/0/9/0), Prereq: HIT-551; Arts & Sciences Elective Code: B

HIT-553 Professional Practice Experience IV (3) Combines the theory of health information management in selected health care settings. Provides practical application in specific health information systems, filing systems, numbering systems, indexes, registries, etc., including provider specific coding practices. Coordinated by the college. Credits: 3, Hours: (3/0/0/0), Prereq: HIT-552; Arts & Sciences Elective Code: B

HSC: Health Sciences

HSC-103 Studies in Health Sciences (0.5-3) Provides readings, papers, seminars and basic research or other projects/assignments under the individual guidance of a faculty member. Credits: .5-3, Hours: (1.5-3/0/0/0), Arts & Sciences Elective Code: B; Comments: Permission of instructor, coordinator

HSC-107 Professionals in Health (2) Presents skills and characteristics expected for professional preparation and employability. Provides an overview of the health industry as it relates to health and safety regulations. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

HSC-115 Medical Terminology (4) A comprehensive study of medical terminology as the language of medicine. Analyzes words by dividing them into component parts. Relates the medical terms to the structure and functional pathology of diseases and current medical procedures. Emphasizes word usage, abbreviations, pronunciation and spelling. Credits: 4, Hours: (4/0/0/0), Arts & Sciences Elective Code: B

HSC-117 Basic Medical Terminology (2.5) Introduces basic word structure and terminology pertaining to body systems. Includes spelling, pronunciation and word usage. Provides a basic overview of disease process, symptoms, anatomy, special procedures, pharmacology and abbreviations. Credits: 2.5, Hours: (2.5/0/0/0), Arts & Sciences Elective Code: B

HSC-142 Elements of Pharmacology (1) Introduces essential concepts of pharmacology including drug legislation, terminology and pharmacy therapy in the clinical management of patient care. Provides an overview of the different drug classifications and their actions and use. Credits: 1, Hours: (1/0/0/0), Prereq: None; Coreq: HSC-115; Arts & Sciences Elective Code: B

HSC-168 Nurse Aide (3.5) Meets the training requirements for nurse aides in long-term care facilities. Emphasizes achieving basic knowledge and demonstrating skills to provide safe, effective care. Credits: 3.5, Hours: (2.25/1/2.25/0), Arts & Sciences Elective Code: B

HSC-191 Professional Roles I: Communication and Technology (2) Assists those pursuing a nursing career with foundational communication techniques necessary to work and succeed in health care. Includes concepts based on the nurse-patient relationship, interdisciplinary communication and collaboration, crisis and conflict resolution, principles of teaching and learning, informatics/technology, medical terminology and documentation. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

HSC-195 Professional Roles II: Professional Identity and Engagement (2) Provides knowledge and develops skills for the advancement of the professional nursing role in health care. Includes concepts based on legal and ethical implications, the health care environment, nursing process and health promotion. Emphasizes safe practice based on quality and safety education for nurses’ (QSEN) competencies throughout the concepts discussed. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

HSC-205 Exploration of Healthcare Careers (3) Explores all aspects of health care and careers in the field. Focuses on understanding basic wellness, and growth and development of the human being. Includes field trips to an emergency room at a local hospital, a surgical center, a free healthcare clinic, a dental clinic, an outpatient OT/PT/speech center, administrative offices at a nursing home and a laboratory. Covers the past, present and future of health care. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

HSC-210 Health Skills I (1) Introduces basic patient care skills: infection control techniques, measuring and recording vital signs, and body mechanics. Laboratory practice and skill achievement is required. Credits: 1, Hours: (0.5/1/0/0), Arts & Sciences Elective Code: B

HSC-217 Introduction to Pathology (3) Introduces the study of pathology. Includes description, etiology, signs and symptoms, diagnostic procedures, current medical treatment, progression and prevention of disease in each body system, with emphasis on basic concepts and terminology. Credits: 3, Hours: (3/0/0/0), Prereq: BIO-161; Arts & Sciences Elective Code: B

HSC-924 Honors Project (1) Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

HSV: Human Services

HSV-101 Human Services Career Orientation (3) Introduces the value base of human services and evaluates problems that can be encountered in working with people when these values conflict with client needs. Introduces the framework of the human services approach, specifically formation of individual values, systems analysis, problem solving and conflict resolution. Concepts of systems analysis are accompanied by application of these concepts to problems. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HSV-110 Human Service Policy and Programs (3) Investigates the relationship between social service programs and related social issues in the context of cultural conditions. Introduces historical trends in human services and acquaints students with current human services available to various client groups. Credits: 3, Hours: (3/0/0/0), Prereq: HSV-101; Arts & Sciences Elective Code: A

HSV-120 Observation Skills (3) Focuses on learning the distinction between inference and behavior, and recording behaviors in a systematic way. Course also includes learning the importance of environment as an influence on human behavior. Closely related competencies to be addressed are writing behavioral objectives and contracts. Credits: 3, Hours: (3/0/0/0), Prereq: HSV-101; Arts & Sciences Elective Code: A

HSV-131 Basic Problem Solving Skills (3) Includes an overview of various intervention techniques. Students learn principles of communication, interviewing and conflict resolution and then practice the techniques in role played videotape situations. Credits: 3, Hours: (3/0/0/0), Prereq: HSV-101; Arts & Sciences Elective Code: A

HSV-200 Adaptation Strategies (3) Examines the values, skills and issues of working with people with disabilities in vocational, residential, social/recreational and other community settings. Focuses on exploring, researching and understanding the relationships between consumers, families, support staff, community-based agencies and other community systems. Encourages students to develop the skills to utilize adaptation strategies necessary to promote independence, participation and success among all age groups. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HSV-201 Loss, Trauma and Resilience (3) Examines loss as a part of life and the impact of trauma on individuals, families, and communities. Studies processes of resilience including grieving and growth. Discusses cultural influences and ethical issues. Explores social services and theories of helping as resources for survivors. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HSV-282 Health and Psychosocial Rehabilitation (3) Focuses on an overview of health, substance abuse and mental health issues of individuals. Students develop skills in identification, planning, assessment, treatment/interventions, and the development of social support systems and community resources. Students apply their
knowledge of integrated practice in a discipline-specific project. Credits: 3, Hours: (3/0/0/0), Prereq: HSV-101; Arts & Sciences Elective Code: A

HSV-287 Counseling Theories and Techniques (3)
Provides further reinforcement and expands topics introduced in Basic Problem Solving. Includes goals of psychosocial rehabilitation, mental health disorders and their diagnosis, and categories and classification of Axis I Psychiatric Disorders. Describes the process of making appropriate client referrals, locating community human service resources and agencies, and creating and implementing service plans for health care issues. Credits: 3, Hours: (3/0/0/0), Prereq: HSV-101, HSV-131, HSV-282; Arts & Sciences Elective Code: A

HSV-292 Substance Abuse and Treatment (3)
Examines alcohol and drug issues and the implications of having an addiction. Includes theories of the addictive process, prevention and treatment options, and specific counseling and therapeutic skills used with individuals in inpatient and outpatient settings. Focuses on the impact of the family unit, social systems and the greater community. Students apply their knowledge of integrated practice in a discipline-specific project. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HSV-800 Human Services Field Experience and Seminar (3-6)
Places students in a human service agency for 220 hours. Encourages students to gain deeper insight through a field experience seminar. Students can objectify their experience through discussion with the instructor. Credits: 3-6, Hours: (.5-1/3-6/3-6/0), Arts & Sciences Elective Code: A; Comments: Completion of Human Service classes. Minimum GPA of 2.5 required to take this course.

HSV-813 Alcohol and Drug Counselor Field Experience and Seminar I (6)
Places the student in a Substance Abuse Treatment facility for a total of 250 hours. A weekly seminar maximizes student experience through insight from the other students and the instructor. These insights enable the students to objectify their experiences. Credits: 6, Hours: (1/0/15/0), Coreq: HSV-292; Arts & Sciences Elective Code: A; Comments: Meets part of the practicum requirement for the Iowa Board of Certification. Minimum GPA of 2.5 required to take this course.

HSV-814 Alcohol and Drug Counselor Field Experience & Seminar II (6)
Places the student in a Substance Abuse Treatment facility for a total of 250 hours. Follows and builds on Alcohol & Drug Counselor Field Experience and Seminar I. A weekly seminar maximizes student experience through insight from the other students and the instructor. These insights enable the students to objectify their experiences. Credits: 6, Hours: (1/0/15/0), Arts & Sciences Elective Code: A; Comments: Meets part of the practicum requirements for the Iowa Board of Certification. Minimum GPA of 2.5 required to take this course.

HSV-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires an independent study contract. Credits: 1-2, Hours: (0/2-4/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

HSV-928 Independent Study (1-3)
Allows the student to pursue a special concentration of study under the guidance of a faculty member. Requires an independent study contract. Credits: 1-2, Hours: (0/2-4/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising faculty member and dean

HUM: Humanities

HUM-105 Working in America (3)
Introduces students to the humanities through an interdisciplinary study of work. By examining works of art, literature, music, philosophy, religion, history and anthropology, the course explores human labor in the past, present and future in an attempt to understand how work shapes human nature and culture. Focus will be on the meanings and values of students' work experiences. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HUM-316 Encounters in Humanities (3)
By asking a series of questions about various examples of human activity (literature, philosophy, history, visual arts and music), teaches a method of inquiry for use in understanding and appreciating the humanities. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HUM-123 U.S. Film History (3)
Tracks the development of film art in the United States from its earliest silent years to the modern era. Identifies and explores the contributions of American filmmakers and the influences of the American film industry and American culture on cinema as an art form. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HUM-124 World Film History (3)
Tracks the development of film art in countries other than the United States from the primitive era to the modern era. Identifies and explores the contributions of major world filmmakers and the influences of the various film industries and cultures as reflected in the films of these specific countries. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HUM-142 Popular Culture (3)
Introduces students to the study of popular culture. Examines the ways in which human beings interact with popular culture, both as individuals and as part of the larger society. The course also examines a wide variety of popular texts to illustrate the ways in which they reflect and perhaps shape cultural values. Through this process, students develop skills for the critical analysis of advertising, television programs, comic books, and interactive multimedia, among other forms of popular culture. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HUM-190 Culture and Technology (3)
Introduces students to the relationships between technology and culture through an interdisciplinary study of the humanities. The course examines these relationships through works in the humanities, for example art, literature, music, philosophy, religion, history, film and anthropology. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HUM-200 International Study in Humanities (3)
Provides students with the opportunity to pursue studies in such areas as history, art, politics, music, literature, and foreign language. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

HUM-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

IND: Industrial Technology

IND-119 Industry Orientation (1)
Presents information relating to careers and jobs that may result from the completion of the HVAC installer program. Topics include job specific information provided by employers and visits to actual work settings. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: B

IND-155 Microcomputer Applications (2)
Covers several applications for microcomputers in business and industry. Included are operating systems, data management, communications, word processing and peripheral devices. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

IND-156 Microcomputers for the Trades (2)
Introduces personal computer concepts and basic computer applications. Covers basic concepts of MS Windows, Office, CAD, Angel, Amatrol and other software used in the IMT, EPDT and AIT programs. This course is intended for students with no knowledge or experience using personal computers. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

IND-167 Torqueing and Tensioning (1)
Focuses on proper use of torque wrenches to apply appropriate torque and tension on bolts. Reinforces concepts and theory covered in lecture with hands-on labs. Credits: 1, Hours: (.5/1/0/0), Arts & Sciences Elective Code: B

IND-175 Advanced Alignment (1)
Introduces intermediate fundamentals of shaft alignment using dial indicators and laser alignment. Reinforces concepts and theory covered in lecture and online material with hands-on labs. Credits: 1, Hours: (.5/1/0/0), Prereq: ATR-302; Arts & Sciences Elective Code: B

IND-187 Predictive Maintenance (2)
Covers all facets of predictive maintenance, including thermal imaging, vibration analysis and trend analysis. Reinforces concepts and theory covered in lecture and online material with
hands-on labs. Credits: 2, Hours: (1/2/0/0), Prereq: ATR-302; Arts & Sciences Elective Code: B

**IND-191 Preventative Maintenance (2)**
Covers all facets of preventative maintenance, including scheduling, data collection, administration and actual performance of PMs. Reinforces concepts and theory covered in lecture and online material with hands-on labs. Credits: 2, Hours: (1/2/0/0), Prereq: ATR-302; Arts & Sciences Elective Code: B

Focuses on proper usage and application of, as well as the theory and physics behind, hydraulic and pneumatic systems and controls. Introduces the various components used in each type of system, electro-hydraulic components, electro-pneumatic components and component selection. Students design, assemble and troubleshoot various types of hydraulic and pneumatic control systems and components. Credits: 5, Hours: (2/6/0/0), Prereq: ELE-238, MAT-233; Arts & Sciences Elective Code: B

**INT: Interior Design**

**INT-126 Introduction to Interior Design (3)**
Introduces the field of interior design, design elements, systems, principles and theories. Applications of the principles of design and concept development to two and three dimensional design projects. Focuses on the process of design and helps students apply their knowledge to space planning and furniture layout projects. Develops design vocabulary relative to interior design. Studies team work structures and dynamics. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

**INT-128 Historical Interiors and Architecture (3)**
Provides a complete survey and evaluation of interior and architectural styles throughout history, as well as furnishings, art and decorative arts. Focuses on identifying, recognizing and evaluating significant historical periods, design, architecture, and art relating to interior design. Covers use of correct terminology and vocabulary associated with the history of interior design. Credits: 3, Hours: (3/0/0/0), Coreq: INT-126; Arts & Sciences Elective Code: B

**INT-129 SketchUp for Interior Design (3)**
Introduces the basic concepts of Interior design illustration and digital model building. Explores artistic expression using a variety of techniques through computer software. Emphasizes development of artistic graphics and models necessary for representing interiors as well as locating them in context. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

**INT-132 Theories and Visual Applications (3)**
Addresses the application of design and color theories through sketching, manual drawing and rendering, and use of technology. Covers various types of production methods and media to produce presentation drawings and documents. Focuses on creation of visual presentations and verbal presentation techniques. Demonstrates creative thinking and problem solving through presentation of a variety of ideas. Credits: 3, Hours: (2/2/0/0), Prereq: ARC-300, INT-126, INT-129; Arts & Sciences Elective Code: B

**INT-206 Residential Design I (4)**
Introduces residential design and specialties, such as kitchen, bath and lighting design. Applies NKBA guidelines and principles of lighting design to small/medium scale projects. Focuses on identifying and selecting appropriate FFE items specific to kitchen, bath and lighting design projects. Covers use of appropriate terminology to describe kitchen, bath, and lighting design projects, as well as human factors and ergonomics. Credits: 4, Hours: (4/0/0/0), Prereq: ARC-185, CAD-201, INT-132; Arts & Sciences Elective Code: B

**INT-207 Commercial Design I (4)**
Introduces commercial space planning, with an emphasis on restaurant, retail, hotel and entertainment design. Explores sustainable and acoustic design solutions. Demonstrates industry specific guidelines and sustainability guidelines. Credits: 4, Hours: (4/0/0/0), Prereq: ARC-185, CAD-201, INT-132; Arts & Sciences Elective Code: B

**INT-211 CAD REVIT for Interior Design (3)**
Emphasizes basic skills of 3D, BIM (Building Information Modeling) as applied to interior design projects through simulated, real work exercises, focuses on CAD related information, attention to detail, and converting existing (non-Revit) drawings to full Revit computer models. Credits: 3, Hours: (3/0/0/0), Prereq: CAD-201; Arts & Sciences Elective Code: B

**INT-216 Residential Design II (4)**
Focuses on refinement of creative and theoretical problem solving skills with respect to large scale residential design, with an emphasis on whole home design and different styles of homes. Explores aging in place, accessibility, universal design, and furniture design and construction. Emphasizes selection, interpretation and application of anthropometric data and universal design principles. Credits: 4, Hours: (4/0/0/0), Prereq: INT-206; Arts & Sciences Elective Code: B

**INT-217 Commercial Design II (4)**
Refines creative and theoretical problem solving skills with respect to large scale commercial design, with an emphasis on office design and systems furniture, as well as educational and health care environments through medium scale projects. Emphasizes factors relating to health, safety and welfare of users. Focuses on concepts, theories, materials, systems and occupants. Credits: 4, Hours: (4/0/0/0), Prereq: minimum grade C- in INT-206; Arts & Sciences Elective Code: B

**INT-300 Textiles for Interior Design (3)**
Studies fibers, yarns, fabrics, finishes and regulations used in commercial and residential interior textile products. Evaluates fabric properties according to variables of end-use serviceability and product categories. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

**INT-304 Historical Interiors II (3)**
Surveys the progression of architecture, decorative arts and furniture styles from classical antiquity through the rococo period of Europe. Projects and study stress the identification and coordination of these periods. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

**INT-311 Global Perspectives in Interior Design (3)**
Combines collaborative effort and hands-on teamwork to focus on national and global design issues, and human factors through exposure to contemporary issues, historical architecture and design, varying dynamics, other cultures, and different economic groups. Requires field study and travel. Credits: 3, Hours: (3/0/0/0), Prereq: INT-126; Arts & Sciences Elective Code: B

**INT-312 Interior Design Topics (1-3)**
Examines current topics related to interior design. Can include, but is not limited to, interior photography, sustainability, furniture construction and other contemporary topics. Credits: 1-3, Hours: (1/3-0/0/0), Prereq: ARC-185, CAD-201, INT-132; Arts & Sciences Elective Code: B

**INT-924 Honors Project (1)**
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

**INT-928 Independent Study (1-3)**
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

**INT-932 Internship (0.5-4)**
Provides an opportunity to receive interior design work experience through on-the-job training in an approved work setting. This internship will be approved by the Interior Design coordinator and will be evaluated with a letter grade. Credits: 0.5-4, Hours: (0/0/0/2-16), Arts & Sciences Elective Code: A

**ITP: Interpreting**

**ITP-954 Practicum and Seminar (6)**
Application of concepts and skills learned in the classroom or in community or educational interpreting situations under the guidance of a mentor interpreter. This on-the-job experience occurs as the final phase of the program. In the seminar portion of the course, students discuss roles and responsibilities of the interpreter, current professional topics, and application of the Code of Ethics. Students will keep logs, journals, and develop a portfolio. Credits: 6, Hours: (2/0/12/0), Prereq: ITP-221; Arts & Sciences Elective Code: A
ments: ITP-221 must be completed with a grade of C or better.

**LIT: Literature**

**LIT-105 Children's Literature (3)**
Provides a broad overview of children's literature, with emphasis upon work done by American writers and illustrators. Students use standard techniques of literary analysis to critique the works explored in the course. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**LIT-158 Literature of the African Peoples (3)**
Provides an introduction to the literature and culture of persons of African descent. Readings include fiction and nonfiction authors from Africa, the Caribbean and the United States. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**LIT-203 Forms of Literature: Story Cycle (3)**
Explores, through story cycles and critical theory, the questions: What is a story cycle? How are they crafted, read and interpreted? How are they different from or similar to other forms of literary expression? How does form affect interpretation? Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**LIT-204 Forms of Literature: Nonfiction (3)**
Focuses on literary nonfiction - essays, memoirs, profiles or criticism - that aspires not only to inform, but also to employ language aesthetically and prompt reflection on experience. Students will explore, through literature and critical theory, the following questions: What is literary nonfiction? How are works of literary nonfiction crafted, read and interpreted? How are they different from and similar to other forms of literary expression? How does form affect interpretation? Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**LIT-205 Forms of Literature: Drama (3)**
Focuses on the study of dramatic literature. Students will practice a method of reading and interpreting plays, exploring the following questions: What is drama? How are works of drama crafted, read and interpreted? How are they different from and similar to other forms of literary expression? How does form affect interpretation? Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**LIT-206 Forms of Literature: Fiction (3)**
Explores, through short stories, novels, films and critical theory, the following questions: What is fiction? What are its common elements? How does understanding these elements and the ways they interconnect affect our understanding of how fiction is crafted, read and interpreted? How is fiction different from or similar to other forms of literary expression? Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**LIT-207 Forms of Literature: Poetry (3)**
Focuses on the study of poetry. Students will practice reading and interpreting poems, exploring the following questions: What is poetry? How are poems crafted, read and interpreted? How are they different from and similar to other forms of literary expression? How does form affect interpretation? Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**LIT-208 Forms of Literature: New Media (3)**
Explores online and computer-based literature. Employing relevant literary theory, students study traditional literature (poetry, fiction, nonfiction, drama) and compare those forms to new media literary forms like hyperfiction and hypertext. Questions include the following: What is new media literature? How does it compare with traditional genres? What makes it qualify as literature? How does literary form affect interpretation? Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**LIT-209 Forms of Literature: Film Adaptation (3)**
Focuses on the relationship between literary works (fiction, drama, nonfiction, poetry or graphic literature) and their adaptations to film. Students explore the adaptation of literature to film; how the elements of plot, character, setting, point of view, symbol and theme are adapted or altered from literature to film; and how film adaptations influence our understanding of both literature and film. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**LIT-222 Literature and Culture: American Dreams (3)**
Explores a variety of expressions of self and society in America through established fiction, autobiography, journals, letters, photographs and other cultural artifacts. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**LIT-224 Literature and Culture: Women and Work (3)**
Through reading literature along with social documents by women and men, the course explores gender identity and work issues for women in traditional and nontraditional gender roles - as domestic angels, factory workers or professionals. Materials may include autobiographies, letters, films, short fiction, poetry, drama, novels and other artifacts. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**LIT-225 Literary Themes: Beyond Bartleby: Images of Business and Labor in Literature and Film (3)**
Explores images and issues of business and labor as they manifest in major fiction and nonfiction texts. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**LIT-226 Literary Themes and the Search for Identity (3)**
Explores the theme of identity in literature - short stories, novels, poems, plays and nonfiction. May use ideas and approaches from literary criticism, psychology, philosophy and religion to illuminate the importance of stories in structuring human experience and establishing a sense of our own identities. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**LIT-227 Literature and Culture: World Poetry (3)**
Explores non-Western traditional and contemporary poetry of Asia, Africa, the Middle East, Latin America and the Caribbean. Studies the forces that shape the creation as well as the experience of poetry in these cultures, such as politics, gender, religion, technology, etc. Students learn to compare literary expression across cultures and to place the Western tradition in a larger context. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**LIT-924 Honors Project (1)**
Allows a qualified honors student to pursue a special concentration of study under the guidance of an honors faculty member. Requires that students meet honors eligibility criteria. Requires completion of an honors project contract. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

**LIT-928 Independent Study (1-3)**
Provides readings, papers and/or research projects in literature under the guidance of a staff member. Credits: 1-3, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

**LIT-945 Selected Topics (1-3)**
Offers specialized study in interest areas. Areas may include special courses in mythology, American culture, adolescent literature or other concentrations. Credits: 1-3, Hours: (1-3/0/0/0), Prereq: ENG-105 or ENG-120; Arts & Sciences Elective Code: A

**MAP: Medical Assistant**

**MAP-123 Administrative Medical Office Procedures (3)**
Presents the principles of administration for the medical office including facility and supply management, telephone and appointment techniques, managing records, and medical bookkeeping. Credits: 3, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

**MAP-142 Medical Insurance and Legalities (3)**
Provides a working knowledge of basic medical insurance programs, forms utilized and the record keeping of insurance claims. Also includes medical ethics and legalities related to medicine. Credits: 3, Hours: (3/0/0/0), Prereq: BIO-161, HSC-115; Arts & Sciences Elective Code: B

**MAP-210 Medical Lab (3.5)**
Provides basic principles and skills in hematology, urinalysis, venipuncture, blood chemical exams, and quality control as applied to the medical office. Credits: 3.5, Hours: (1.5/4/0/0), Prereq: BIO-161, HSC-107, HSC-115, HSC-210, MAP-123; Arts & Sciences Elective Code: B

**MAP-260 Basic Electrocardiography (3)**
Provides instruction in electrocardiography including psychological and physical preparation of a patient for an ECG, paper set-up and operation of equipment, mounting of tracings and troubleshooting to obtain acceptable tracings. This course does not include complex interpretation and diagnosis of cardiac rhythms. Credits: 1, Hours: (0.5/1/0/0), Prereq: BIO-161, HSC-107, HSC-115, HSC-210, MAP-123; Arts & Sciences Elective Code: B
MAP-312 Medical Assistant Clinical Procedures (3)
Includes basic clinical skills used in a medical office; preparing for the patient's visit; assisting the physician and patient during examination and treatment, including minor surgery; positioning, microbiology and sterilization; X-rays; physical therapy; nutrition; and administration of injected medications as applied to the medical office. Credits: 3, Hours: (1.5/3/0/0), Prereq: BIO-161, HSC-107, HSC-115, HSC-210, MAP-123; Arts & Sciences Elective Code: B

MAP-501 Math for Medications (1)
Provides a basic mathematical background for an understanding of measurement systems and the calculation of dosages of oral and parenteral medications for medical assisting. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

MAP-513 Medical Assisting Pharmacology (3)
Provides a basic background in the classification of drugs, their sources, uses and legal implications. Discusses characteristics of typical drugs, side effects, precautions, interactions and patient education. Credits: 3, Hours: (3/0/0/0), Prereq: BIO-161, HSC-115; Arts & Sciences Elective Code: B

MAP-618 Medical Assisting Externship (7)
Offers supervised practical experience in medical offices, clinics and other medical care settings. Credits: 7, Hours: (2/0/15/0), Prereq: MAP-123, MAP-210, MAP-312, MAP-513, MAP-142, MAP-260, MAP-501; Arts & Sciences Elective Code: B; Comments: All Medical Assisting technical courses.

MAS: Masonry

MAS-118 Masonry Safety (1)
Provides instruction on masonry construction safety and health topics for entry-level workers. Credits: 1, Hours: (3.5/1/0/0), Arts & Sciences Elective Code: B

MAS-129 Masonry Scaffold Builder and User (2)
Provides instruction on how to correctly construct 4'-0", 5'-0" and 6'-0" tubular masonry scaffolding in a safe manner. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

MAS-215 Masonry Tools and Equipment I (2)
Provides knowledge and use skills of basic manual masonry tools and equipment covering selection, use, maintenance and repair. Includes measuring devices, builders' levels and transits, trowels and other mortar tools, basic masonry cutting and shaping tools, levels, squares, mortar mixing, and material handling equipment. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

MAS-217 Masonry Lab I (8)
Provides introductory, intensive hands-on skills in construction of masonry structures including handling and identification of materials. Develops skills in handling and laying masonry units, mixing mortar, finishing joints. Includes introduction and practice in basic masonry walls and the activities required to construct them. Credits: 8, Hours: (4/8/0/0), Arts & Sciences Elective Code: B

MAS-218 Masonry Tools and Equipment II (2)
Extends knowledge and use skills of masonry tools and equipment covering selection, use, maintenance and repair. Includes power tools and equipment such as masonry drilling tools and equipment, masonry fastening devices, power fasteners, masonry and concrete cutting devices and equipment, scaffolding and ladders. Credits: 2, Hours: (2/0/0/0), Prereq: MAS-215; Arts & Sciences Elective Code: B

MAS-222 Masonry Lab II (9)
Provides advanced, intensive hands-on skills in construction of masonry structures. Improves skills in handling and laying masonry units, mixing mortar, and finishing joints. Includes introduction and practice in complex masonry walls, flashings, reinforcement, finishing and cleaning. Credits: 9, Hours: (4/10/0/0), Prereq: MAS-217; Arts & Sciences Elective Code: B

MAS-800 Masonry Pre-Lab Experience (2)
Provides hands-on experience using masonry tools, supplies and equipment. May take place on-campus or off-campus. Appropriately prepares students for their first Masonry Lab. Credits: 2, Hours: (0/4/0/0), Arts & Sciences Elective Code: B

MAS-920 Field Experience (3)
Provides capstone masonry construction experience. Includes final evaluation covering masonry skills, work habits, skills in working with others and ability to contribute to the success of the project. Credits: 3, Hours: (0/0/0/12), Prereq: MAS-218, MAS-222; Arts & Sciences Elective Code: B

MAT: Mathematics

MAT-052 Pre-Algebra (3)
Introduces basic algebra concepts and reviews basic math. Includes fractions, decimals, proportions and percents. Introduces integers, exponents, simple equations and graphing. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: D

MAT-059 Introduction to Technical Mathematics (2)
Prepares the student for the study of technical mathematics. Concentrates on algebraic skills and other related math skills. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: D

MAT-062 Elementary Algebra (3)
Includes the properties of the real numbers, equations and inequalities in one variable, formulas, applications, operations and factoring of polynomials, exponents, and graphing linear equations. This course presumes a proficiency in fractions, decimals and signed numbers. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: D

MAT-076 Preparation for College Mathematics (3)
Provides students with the knowledge necessary for success in college-level mathematics courses. Emphasizes active computer-based learning supported by instructor guidance and small group lectures. Includes signed numbers, fractions, decimals and percents, geometry and measurement, and algebraic expressions and equations. May include linear equations and inequalities, polynomials and factoring. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: D

MAT-095 Personal Achievement Math (2-L)
Individualized course of instruction in basic math. Topics include: whole numbers, fractions, decimals, ratio and proportion, and percent. Additional topics may include pre-algebra, metric system and technical math. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: D

MAT-102 Intermediate Algebra (4)
Includes equations, inequalities, systems of equations, matrices, functions, graphs, polynomials, rational expressions, exponents, radicals and logarithms. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-070, or MAT-076 through Module 7; Arts & Sciences Elective Code: B

MAT-107 Survey of Mathematics (4)
Provides an overview of topics that include: sets, real number systems, ratios, proportions, percentages, geometry, algebra and functions. The course is for students with a minimum of one year of high school algebra and who intend to take Statistical Ideas or Mathematics and Society. Credits: 4, Hours: (4/0/0/0), Arts & Sciences Elective Code: B; Comments: One year high school algebra or placement test.

MAT-109 Industrial Maintenance Math Fundamentals (3)
Demonstrates mathematical principles to enable students to understand and apply course material covered throughout the Industrial Maintenance Technology program. Improves math fundamentals that are used throughout the rest of the program. Includes metric prefixes and conversions, exponents, scientific notation, percents, ages, dimensional analysis, ratio and proportions, areas, volumes, and algebraic expressions. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-062; Arts & Sciences Elective Code: B

MAT-115 Mathematics and Society (3)
Introduces selected areas of mathematics in familiar settings and develops students' conceptual and problem-solving skills. The course includes a study of mathematical concepts selected from statistics, probability, game theory, growth patterns and coding information. Other topics may be included. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-102 or MAT-107 or MAT-707; Arts & Sciences Elective Code: A

MAT-117 Mathematics for Elementary Teachers (3)
Designed to deepen students' understanding of the mathematics they will teach to elementary school children. Includes methods of problem solving, measurement, geometry, place value, arithmetic operations in a variety of algorithms and the relationships between these algorithms. Students also explore concepts using manipulatives. This course was developed for elementary education majors who choose a specialization different from mathematics, but is not limited to those students. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-102 or MAT-707; Arts & Sciences Elective Code: A

MAT-120 College Algebra (3)
Uses a problem-solving approach to illustrate how algebra can model and solve real-world problems. Emphasizes linear, exponential and logarithmic functions. This liberal arts course is not prepara-
tion for calculus. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-102 or MAT-708 or MAT-707 through Module 10; Arts & Sciences Elective Code: A

MAT-136 Trigonometry and Analytic Geometry (5)
Examines trigonometric functions, graphs, identities and applications. Includes conic sections, polar coordinates, parametric equations, vectors, planes and surfaces. Credits: 5, Hours: (5/0/0/0), Prereq: MAT-138; Arts & Sciences Elective Code: A

MAT-137 Applications of Geometry (1)
 Begins with a review of right angle trigonometry as it applies to the machinist and continues with additional trig (both right angle and oblique angle) and geometry concepts. Emphasizes practical application of the mathematical concepts to the planning and programming skills required for CNC programs. Credits: 1, Hours: (1/0/0/0), Prereq: MAT-736; Arts & Sciences Elective Code: B; Comments: Equivalent industrial math experience may be taken in lieu of prerequisite.

MAT-138 College Algebra with Limits (4)
 Examines polynomial, rational, radical, exponential and logarithmic functions and equation solutions. Includes matrices, sequences, series and introduces limits. This course is intended for all students who will eventually take any calculus course. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-102 or MAT-708; Arts & Sciences Elective Code: A

MAT-140 Finite Math (3)
 Includes methods of solving linear equations and inequalities. Introduces linear programming, matrices, functions, graphs, counting techniques, probability, mathematics of finance and applications. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-102 or MAT-708 or MAT-707 through Module 10; Arts & Sciences Elective Code: A

MAT-149 Linear Algebra (3)
 Includes matrix and vector arithmetic, using matrices to solve systems of linear equations, eigenvalues and eigenvectors, diagonalization of matrices, and an introduction to subspaces of Euclidean space. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-210; Arts & Sciences Elective Code: A

MAT-150 Discrete Math (3)
 Introduces concepts in discrete mathematics as applied to computer science. Includes logic, methods of proof, sets, functions, relations, counting techniques, discrete probability, permutations and combinations, graphs and trees. Emphasizes connections between discrete math and programming concepts. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-102 or MAT-708 or MAT-707 through Module 10; Arts & Sciences Elective Code: A

MAT-155 Statistical Ideas (3)
 Designed for students who are not majoring in mathematics or the sciences. The course provides an overview of the basic ideas needed by consumers of statistics and can also provide a helpful framework for a more detailed study of the subject. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-102 or MAT-107 or MAT-707; Arts & Sciences Elective Code: A

MAT-157 Statistics (4)
 Focuses on descriptive statistics (mean, median, mode, standard deviation and variance) and introduces correlation and linear regression. Emphasizes inferential statistics and probability distributions as applied to confidence intervals, hypothesis testing of mean and standard deviation, and applications to business and other fields. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-102 or MAT-707 or MAT-155; Arts & Sciences Elective Code: A

MAT-162 Business Statistics (4)
 Introduces statistics, primarily for business majors. Investigates methods of collection, organization, presentation, analysis and interpretation of quantitative data as tools in effective business decision-making. Computer applications are used to assist in visualizing and analyzing data. Covers descriptive statistics, probability, confidence intervals and hypothesis testing for one and two samples, regression, correlation and chi-square. Additional topics may be covered, including ANOVA. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-138 or MAT-140 or MAT-155 or MAT-157; Arts & Sciences Elective Code: A

MAT-165 Business Calculus (3)
 Studies the techniques of differential and integral calculus likely to be encountered in an undergraduate course in business economics. Applications are emphasized in these areas. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-138; Arts & Sciences Elective Code: A

MAT-210 Calculus I (4)
 Includes limits, derivative, differentiation, the differential elementary applications of calculus and introduction to integration. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-136; Arts & Sciences Elective Code: A

MAT-216 Calculus II (4)
 Continues Calculus I and includes study of the integral, integration, application of integration, techniques of integration and infinite series. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-210; Arts & Sciences Elective Code: A

MAT-219 Calculus III (4)
 Continues Calculus II and includes study of vector functions, function of several variables, multiple integrals and vector fields. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-216; Arts & Sciences Elective Code: A

MAT-227 Differential Equations With Laplace (4)
 Studies exact equations, separable equations, linear equations, physical applications, series solutions, systems of linear differential equations and methods of approximating the solutions to first-order equations. Laplace transforms are introduced and used to solve differential equations. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-216; Arts & Sciences Elective Code: A

MAT-230 Maintenance Math I (2)
 Reviews mathematical principles and fundamentals that enable students to understand and apply course material throughout the Industrial Maintenance, Energy Production and Automation programs. Covers metric prefixes, conversions, exponents, scientific notation, engineering notation, ratios, proportions and algebraic expressions. Credits: 2, Hours: (2/0/0/0), Prereq: MAT-052 or MAT-707; Arts & Sciences Elective Code: B

MAT-233 Maintenance Math II (2)
 Reviews mathematical principles and fundamentals that enable students to understand and apply course material throughout the Industrial Maintenance, Energy Production and Automation programs. Covers dimensional analysis, area, volume, binary and electrical formulas. Credits: 2, Hours: (2/0/0/0), Prereq: MAT-230; Arts & Sciences Elective Code: B

MAT-700 Basic Math (3)
 Covers basic business skills such as computing with whole numbers, fractions, decimals, percents, and simple exponents and radicals. Includes evaluating formulas, such as interest formulas and geometric measurements, and solving percent problems. Familiarizes students with ratio and proportion as a problem solving tool, the metric system, dimensional analysis, basic algebra with signed numbers and solving first degree equations. Introduces basic statistics, reading tables and graphs, and calculating averages and weighted means. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

MAT-707 Algebra Mastery 1 (3)
 Continues modules from MAT-076, including linear equations and inequalities, polynomials, factoring, and systems of linear equations and inequalities. May cover radical expressions and equations, exponential and logarithmic functions, and rational expressions and equations. Emphasizes active, computer-based, individually-paced learning supported by instructor guidance and small-group lectures. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-076; Arts & Sciences Elective Code: B

MAT-708 Algebra Mastery 2 (3)
 Continues modules from MAT-707, including rational and radical expressions and equations, exponential and logarithmic functions, and quadratic equations. Emphasizes active, computer-based, individually-paced learning supported by instructor guidance and small-group lectures. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-707 or MAT-076 through Module 8; Arts & Sciences Elective Code: B

MAT-715 Industrial Math I (3)
 Covers basic math skills such as addition, subtraction, multiplication and division of whole numbers, decimals and fractions. Covers specifically dimensional analysis and significant digit concepts. Also gives practice and solving stated problems and covers introductory algebra concepts. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

MAT-716 Industrial Math II (3)
 Covers basic algebra as it relates to fundamental equations, ratios and proportion, and percent-ages. Covers applied geometry as it relates to finding length, area, volume, etc. Also covers basic right angle trigonometry and gives more practice in solving stated problems. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-700; Arts & Sciences Elective Code: B
MAT-719 Applied HVAC Math (3)
Provides instruction in basic math skills such as addition, subtraction, multiplication, and division of whole numbers and fractions. Includes ratio and proportion, percent and percentage, computed measure, and heat load calculations. Covers specific math concepts related to HVAC and terminology technicians will encounter in the field. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-700; Arts & Sciences Elective Code: B

MAT-731 Introduction to Math (2)
Reviews basic arithmetic operations and problem solving, including whole numbers, fractions, decimals, ratio and proportion, and percent as they apply to health professions. Covers computations, evaluating formulas with signed numbers and radicals, and exponents, as well as practical applications of the Metric, Troy and Apothecaries’ systems of measurement. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B; Comments: Placement test.

MAT-732 Introduction to Math (3)
For Respiratory Therapy and END students only. Reviews basic math concepts, including whole numbers, fractions, decimals, ratio and proportion, percents, the number system, geometric shapes and graphs. Covers basic algebra topics, such as integers, expressions, scientific notation, equations, application problems, graphing straight lines and slopes, and variation. Overviews percent solutions, concentration problems, preparing solutions and dosage problems. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B; Comments: Placement test.

MAT-735 Machinist Mathematics I (2)
Begins with a review of fractions and decimals as they are used to solve shop problems. Students are introduced to the problems involving powers and roots, tapers and angles. Use of the calculator is introduced, along with handbook tables and formulas. Introduces the student to metric conversion and more advanced applied math involving calculations of area, volume and weight of material. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

MAT-736 Machinist Mathematics II (3)
Continues Machinist Mathematics I. Introduces students to more advanced practical mathematics. Includes metric conversion, area and volume calculation, temperature conversion and expansion of metals. Right angle trigonometry is introduced along with calculations that relate to numerical control programming. Credits: 1, Hours: (1/0/0/0), Prereq: MAT-735; Arts & Sciences Elective Code: B

MAT-737 Applied Plumbing Math (3)
Provides instruction on the applied mathematics used in the plumbing and pipelitting industries. Reviews addition, subtraction, multiplication, division of whole numbers and fractions, and measurement conversions. Includes pipefitting dimensions and diameters, fitting allowances or make-up dimensions, 90, 60, 45 and 22 1/2 degree piping offsets, parallel offsets and rolling offsets. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-700; Arts & Sciences Elective Code: B

MAT-738 Plumbing Math Concepts (1)
Provides instruction on plumbing trade calculations including British Thermal Units (BTUs), heat transfer, heat loss and heat gain, latent and sensible heat, volume, weight and surface area calculations, percentage calculations, water and head pressure calculations, Boyle’s Law, and the application of Boyle’s Law. Credits: 1, Hours: (1/0/0/0), Prereq: MAT-737; Arts & Sciences Elective Code: B

MAT-739 Pipe Fitters Math (3)
Provides practical math skills intended for the pipe welder apprentice, journeyman or supervisor. Students complete a series of math exercises commonly used in pipefitting. Trigonometry review to complex rolling offsets are covered. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-102 or MAT-765; Arts & Sciences Elective Code: B

MAT-745 Technical Mathematics I (4)
Covers applied geometry, functions and their graphs, trigonometry, systems of linear equations, operations with algebraic expressions, solving quadratic equations, and logarithms and exponentials. Stresses applied problems from the engineering field, as well as using scientific calculators as problem-solving tools. Credits: 4, Hours: (4/0/0/0), Arts & Sciences Elective Code: B

MAT-746 Technical Mathematics II (4)
Includes logarithms and exponentials, solving nonlinear equations, variation, sequences, binomial theorem, trig identities, analytic geometry and statistics. Introduces the fundamental concepts of calculus, including limits, the derivative, definite and indefinite integrals and applications of each. Emphasizes solving problems relevant to the mechanical engineering field. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-745; Arts & Sciences Elective Code: B

MAT-755 Fabrication Math I (2)
Covers basic math skills such as addition, subtraction, multiplication and division of whole numbers, decimals and fractions. Introduces linear measurement with emphasis on common measurement tools and techniques, scientific calculators, handbook tables, basic algebraic concepts, metric conversion, and applied problems of calculating area, volume, mass and weight. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

MAT-756 Fabrication Math II (2)
Continues Fabrication Math I. Introduces students to more advanced practical mathematics, including plane geometry and trigonometry, by resolving real industry problems. Credits: 2, Hours: (2/0/0/0), Prereq: MAT-755; Arts & Sciences Elective Code: B

MAT-764 Welding Mathematics I (2)
Covers basic mathematical skills needed for layout design, fabrication and blueprint reading. Addition, subtraction, multiplication, and division of fractions and decimals is covered with special emphasis on their application. Geometric principles and linear measurement units are included to assist in understanding and utilizing basic shop skills. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

MAT-765 Welding Mathematics II (3)
Covers basic algebra as it relates to fundamental equations, ratios and proportions, and percents. Also covers basic right angle trigonometry and provides for additional practice in solving stated problems. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-764; Arts & Sciences Elective Code: B

MAT-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

MAT-928 Independent Study (1)
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1, Hours: (0/4/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

MFG: Manufacturing

MFG-120 Machine Trade Printreading I (1)
Introduces students to the importance of prints in industry. Covers the alphabet of lines and principles of sketching. Continues with an introduction to orthographic projection, auxiliary views, detail and assembly drawings, dimensions and tolerances, and sectional views. Title block information is covered along with materials lists, drawing notes and drawing change systems. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

MFG-130 Machine Trade Printreading II (1)
Continues Machinist Trade Printreading I. Covers geometric dimensioning and tolerancing and the interpretation of advanced prints, including numerical control programming and documents. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

MFG-135 Fabrication Print Reading I (2)
Introduces students to the importance of blueprints in industry. Covers topics such as the alphabet of lines, orthographic projection, auxiliary views, detail and assembly drawings, dimensions and tolerances and sectional views. Basic fabrication, machining, and welding prints are covered. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

MFG-136 Fabrication Print Reading II (2)
Continues Fabrication Print Reading I. Covers advanced print reading topics dealing with sheet-metal fabrication, welding and machining. Geometric dimensioning and tolerancing are included. Credits: 2, Hours: (2/0/0/0), Prereq: MFG-135; Arts & Sciences Elective Code: B

MFG-140 Geometric Dimensioning and Tolerancing (1)
Provides information concerning the special symbols used in geometric dimensioning and tolerancing. These symbols are a language used to communicate the ideas and intent of the designer to the people who manufacture the parts or the person who inspects the finished part. Credits: 1, Hours: (1/0/0/0), Prereq: MFG-120, MFG-130; Arts & Sciences Elective Code: B; Comments: Appropriate work experience may be taken in lieu of prerequisite course work

MFG-145 Light Machining for Maintenance Trades (4)
Covers machine/shop safety, machine theory, blueprint reading, tolerances, tooling selection,
machine feed and speed, and proper usage of manual knee mills and manual lathes. Empha-
sizes print reading, mill and lathe usage, and machining maintenance, in a hands-on lab setting. Credits: 4, Hours: (2/4/0/0), Arts & Sciences Elective Code: B

MFG-202 Manufacturing Processes (2) Introduces students to modern manufacturing processes. Learning activities introduce special symbols used on mechanical drawings. Credits: 2, Hours: (0/4/0/0), Prereq: DRF-142, DRF-143; Arts & Sciences Elective Code: B

MFG-213 Basic Machine Theory (5) Covers theory of operation of machining tools, metallurgy as it applies to manufacturing, identification and elementary heat treatment of steel. Safety is taught as it applies to each machine process. Proper terminology of the machinist trade is emphasized. Credits: 5, Hours: (5/0/0/0), Arts & Sciences Elective Code: B

MFG-215 Advanced Machine Theory (3) Continues Basic Machine Theory. Covers more advanced principles in setup and operation of lathes, mills, and grinders. Introduces carbide lathe tools, milling cutters, and emphasizes productivity and accuracy. Covers theory of basic shaper setup and operation, and an introduction to basic turret lathe setups. Shop safety, cooperation and communication continue to be stressed. Credits: 3, Hours: (3/0/0/0), Prereq: MFG-227; Arts & Sciences Elective Code: B

MFG-222 Machine Operations I (4) Covers lab use of basic measuring tools, layout and inspection tools, and bench work. Safe operation of machine tools and heat treating equipment is taught. Emphasis is on following blueprints and holding tolerances through the use of a variety of processes to produce a product. Credits: 4, Hours: (0/8/0/0), Coreq: MAT-735, MFG-120, MFG-213; Arts & Sciences Elective Code: B

MFG-227 Advanced Machine Operations I (4) Continues MFG-222. More complex prints are used to introduce additional machine tool processes. Credits: 4, Hours: (0/8/0/0), Prereq: MFG-222; Coreq: MAT-735, MFG-120; Arts & Sciences Elective Code: B

MFG-228 Machine Operations II (4) Covers advanced setup and operation of lathes, mills and grinders using different materials and cutters. Productivity and safe operation are emphasized. Credits: 4, Hours: (0/8/0/0), Prereq: MFG-227; Coreq: MAT-735, MFG-130, MFG-215; Arts & Sciences Elective Code: B

MFG-230 Advanced Machine Operations II (4) Continues MFG-228. Use of carbide cutters is emphasized. Productivity and safety continue to be emphasized, along with more complex prints and setups. Credits: 4, Hours: (0/8/0/0), Prereq: MFG-228; Coreq: MAT-735, MFG-130, MFG-215; Arts & Sciences Elective Code: B

MFG-259 Measurement, Materials & Safety (NIMS) (3) Explores basics of machining, raw materials, use of hand tools, safety and maintenance. Includes measurement techniques, materials, safety, machine tool math, quality control and maintenance. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. This course aligns with NIMS (National Institute of Metalworking Skills) standards. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

MFG-279 CNC Machine Operations (4) Provides a basic understanding of CNC codes commonly used in a machine shop. Focuses on computer-based and hands-on training in code writing and CNC machine setup and operation, while producing various related projects. Credits: 4, Hours: (1/6/0/0), Arts & Sciences Elective Code: B

MFG-281 CNC Punch Press Operations (NIMS) (3) Introduces basic operations of a CNC turret press. Covers basic and advanced tooling, programming using G&M code and CAM software. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. This course aligns with NIMS (National Institute of Metalworking Skills) standards. Credits: 3, Hours: (1/4/0/0), Prereq: MFG-259, MFG-286; Arts & Sciences Elective Code: B

MFG-283 Laser Cutting Operations (2) Introduces basic theories and practices of machine operation, shop procedures, material properties and material handling. Covers programming and editing and adjusting parameters. Students perform inspections and routine machine maintenance. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

MFG-290 Automated Production Methods for AMET (3) Introduces automation as it applies to machining, fabrication and welding. Covers automation feeding, automatic cycle repetition, robots and other equipment-oriented concepts. Studies theory of system concepts, as such as mass production, batch processing and just-in-time processing. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

MFG-291 CNC Mill Operator (NIMS) (3) Introduces basic milling operations. Covers manual and CNC milling practices, tooling, machining practices and applied mathematics. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. This course aligns with NIMS (National Institute of Metalworking Skills) standards. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

MFG-297 Milling Machine Operations (NIMS) (3) Introduces basic and advanced manual milling operations. Covers manual milling machine practices, tooling, machining principles and applied mathematics. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. This course aligns with NIMS (National Institute of Metalworking Skills) standards. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

MFG-298 Surface Grinding Operations (NIMS) (2) Introduces basic surface grinding operations. Covers precision surface grinding practices, grinding wheel identification, proper grinding techniques and grinding safety. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. This course aligns with NIMS (National Institute of Metalworking Skills) standards. Credits: 2, Hours: (1/2/0/0), Prereq: MFG-259, MFG-286; Arts & Sciences Elective Code: B

MFG-299 Turning Operations (Turning Between Centers - NIMS) (3) Introduces basic and advanced lathe operations dealing with turning parts between centers. Focuses on general lathe practices, lathe tool grinding, lathe nomenclature, proper use of lathe tooling as applied to turning between centers and lathe safety. Emphasizes teamwork, critical
thinking and problem solving through hands-on experience and practical applications. This course aligns with NIMS (National Institute of Metalworking Skills) standards. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

MFG-302 CNC Fundamentals (3) Introduces computer numerical control as it relates to CNC lathes and milling machines. The use of microcomputers and related software is covered. Emphasizes input language, codes, machine setup and operation, inspection of parts, and communication with peripherals. Credits: 3, Hours: (1/4/0/0), Prereq: MFG-227, MFG-215; Arts & Sciences Elective Code: B

MFG-311 Intermediate CNC (6) Continues the introductory course adding canned cycles, looping, sub-routines and interpretation of programs written by others. Internal machining on the lathes is covered. More complex parts and production of multiple parts will be undertaken. Credits: 6, Hours: (1/10/0/0), Prereq: MFG-302 or appropriate industrial experience; Arts & Sciences Elective Code: B

MFG-313 Advanced CNC (6) Allows students to progress from the trainees to the full-size industrial CNC machines. Conversational programming is introduced, and advanced projects involving mating parts and short production runs are undertaken. Students are introduced to computer-assisted programming as it applies to CAD/CAM. Routine and preventive maintenance procedures are learned. Credits: 6, Hours: (0/12/0/0), Prereq: MFG-311 or appropriate industrial CNC programming experience; Arts & Sciences Elective Code: B

MFG-317 Automated Production Methods (5) Covers computer-assisted programming and introduces students to automation as it applies to machining operations. Automatic machine feeding, automatic cycle repetition, robots and other equipment-oriented concepts are studied. System concepts such as mass production, batch processing and just-in-time processing are covered from a theoretical view. Credits: 5, Hours: (1/8/0/0), Prereq: MFG-313; Arts & Sciences Elective Code: B

MFG-318 Introduction to Fabrication Practices (5) Introduces basic theories and practices used in precision sheet metal fabrication, including layout, shearing, punching and bending. Students apply theory concepts through practical lab projects, with emphasis on shop safety, cooperation and communication. Credits: 5, Hours: (2/6/0/0), Arts & Sciences Elective Code: B

MFG-324 Turning Operations (Turning in a Chuck - NIMS) (3) Introduces basic and advanced lathe operations dealing with turning parts in different types of chucks. Covers general lathe practices pertaining to turning in a chuck, lathe tool grinding, lathe nomenclature, proper use of lathe tooling as applied to turning in a chuck and lathe safety. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. This course aligns with NIMS (National Institute of Metalworking Skills) standards. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

MFG-332 CNC Mill Program and Setup (NIMS) (3) Introduces basic CNC vertical milling operations. Focuses on setup and operation practices pertaining to CNC milling and programming language using G&M codes. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. This course aligns with NIMS (National Institute of Metalworking Skills) standards. Credits: 3, Hours: (2/2/0/0), Prereq: MFG-259, MFG-286, MFG-291, MFG-297; Arts & Sciences Elective Code: B

MFG-334 CNC Lathe Program & Setup (NIMS) (3) Introduces basic CNC horizontal lathe turning operations. Covers setup and operation practices pertaining to CNC turning and programming language using G&M codes. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. This course aligns with NIMS (National Institute of Metalworking Skills) standards. Credits: 3, Hours: (2/2/0/0), Prereq: MFG-259, MFG-286, MFG-291, MFG-297; Arts & Sciences Elective Code: B

MFG-339 CNC Press Brake Operator (NIMS) (2) Introduces CNC controls and programming as related to a CNC press brake. Covers advanced concepts in tooling, bending principles and applied mathematics dealing with a hydraulic down acting CNC press brake. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. This course aligns with NIMS (National Institute of Metalworking Skills) standards. Credits: 2, Hours: (1/2/0/0), Prereq: MFG-259, MFG-286, Coreq: MFG-287; Arts & Sciences Elective Code: B

MFG-341 CNC Lathe Operations (NIMS) (2) Continues CNC lathe turning (program and setup). Covers advanced concepts pertaining to CNC turning and programming language using G&M codes and CAM software. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. This course aligns with NIMS (National Institute of Metalworking Skills) standards. Credits: 2, Hours: (1/2/0/0), Prereq: MFG-259, MFG-286, MFG-292, MFG-299, MFG-324, MFG-334; Arts & Sciences Elective Code: B

MFG-343 CNC Milling Operations (NIMS) (2) Continues CNC milling (program and setup). Covers advanced concepts pertaining to CNC vertical and horizontal milling machines and programming language using G&M codes and CAM software. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. This course aligns with NIMS (National Institute of Metalworking Skills) standards. Credits: 2, Hours: (1/2/0/0), Prereq: MFG-259, MFG-286, MFG-291, MFG-297; Arts & Sciences Elective Code: B

MFG-348 EDM Wire Operations (NIMS) (1) Introduces basic and advanced operations dealing with a CNC Electrical Discharge Machine (EDM). Covers basic and advanced EDM theory and concepts, programming using G&M code and CAM software. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. This course aligns with NIMS (National Institute of Metalworking Skills) standards. Credits: 1, Hours: (.5/1/0/0), Prereq: MFG-259, MFG-286; Arts & Sciences Elective Code: B

MFG-390 Introduction to Automated Fabrication Practices (7) Introduces CNC through water jet and turret punch techniques. Emphasizes equipment operation, programming, safety and maintenance, offline programming and troubleshooting. Credits: 7, Hours: (2/10/0/0), Prereq: MFG-318; Arts & Sciences Elective Code: B

MFG-391 Intermediate Automated Fabrication Practices (7) Continues MFG-390. Focuses on complex problem solving and application, with emphasis on communications with respect to machines, computers or offline program systems. Introduces the laser cutter to demonstrate various cutting methods. Credits: 7, Hours: (2/10/0/0), Prereq: MFG-390; Arts & Sciences Elective Code: B

MFG-392 Advanced Automated Fabrication Practices (7) Focuses on computer assist software for programming, and the steps of metal fabrication. Students complete multiple projects from start to finished product. Credits: 7, Hours: (2/10/0/0), Prereq: MFG-391; Arts & Sciences Elective Code: B

MFG-420 Jig and Fixture Design (2) Covers theory of design and machining practices as they relate to jigs and fixtures used in manufacturing facilities. Introduces students to the importance of jig and fixture classification and to their uses in modern machine tools. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

MFG-500 Statistical Process Control (1) Covers the current transformation methods of industry and business toward a complete quality control system. Includes management theory on quality, productivity and controlled charting techniques. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

MFG-924 Honors Project (1) Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

MGT: Management

MGT-101 Principles of Management (3) Applies current techniques and methods to the management functions of planning, organizing, leading and controlling. Focuses on critical analysis, development and effectiveness of organiza-
Course Descriptions

MGT-121 Project Management Basics (3)
Defines project management and examines the role of the project manager. Emphasizes on-the-job project management knowledge areas and processes. Practical applications and case studies are used to reinforce and apply concepts to real life situations. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MGT-124 Project Management Tools (3)
Continues MGT-121, focusing on traditional project management tools and emerging project management technologies. Students develop a project plan, define and sequence tasks, identify critical path, allocate resources, estimate risks and maintain a budget. Uses popular project management software, such as MS Project and MS Excel. Credits: 3, Hours: (2/0/0/0), Prereq: MGT-121; Arts & Sciences Elective Code: B

MGT-130 Principles of Supervision (3)
Introduces the management functions of planning, organizing, leading and controlling. Focuses on technical supervision skills and human relations skills needed to develop a productive work team, and conceptual skills to group independent organizational processes. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

MGT-137 Developing Leadership Skills (1)
Designed to give valuable suggestions on communicating effectively using coaching, counseling, delegating and performance reviews to develop subordinates. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

MGT-139 Effective Team Building for Managers (1)
Participants learn the basics of team management, how to motivate team members, how to improve the communication process and understand the principles of leadership. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

MGT-140 Time Management in the Workplace (1)
Focuses on high performance work times, being effective vs. being efficient, time wasters and solutions to them. Students also learn organizational skills, how to set goals, plan and prioritize. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

MGT-145 Human Relations in Management (3)
Emphasizes the importance of proper attitudes towards self, others and organization values. Stresses the development of a good self-concept and the relationship this has to energy levels, emotions, verbal and nonverbal communication. Prepares students to understand how to deal with conflict and how to be a productive member of a work group. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

MGT-155 Integrated Project Management (3)
Allows students to practice managing a variety of projects from initiation to completion. Students demonstrate technical and applied knowledge gained in their field, as well as critical thinking, diverse perspectives and communication skills. Credits: 3, Hours: (3/0/0/0), Prereq: MGT-124; Arts & Sciences Elective Code: B

MGT-158 Office Supervision and Management (3)
Develops vocabulary and knowledge needed to examine sound principles and successful practices used by office managers to effectively and efficiently manage an office. This course provides students an opportunity to hone essential soft skills while exploring human resource issues. In addition, students design and implement an etiquette training module. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MGT-170 Human Resource Management (3)
Includes managerial philosophy of human resource administration, emphasizing the study of the personnel functions of recruiting, interviewing, selecting, placement, training and evaluating. Also addresses the issues of diversity in a dynamic environment. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MGT-171 Human Resource Strategies and Tools (3)
Includes the application of tools and techniques in the following HR functions: talent acquisition, total rewards, employee and labor relations, training/development, and workplace safety. Credits: 3, Hours: (3/0/0/0), Prereq: CSC-110, MGT-101, MGT-170; Arts & Sciences Elective Code: B

MGT-205 Introduction to Global Trade (3)
Addresses the complications associated with business operations in today’s global economy. Focuses on applying knowledge gained through business core courses of managing, marketing, accounting, operations, and finance with particular attention on global business operations. Translates theory into practice and helps students learn the terminology and systems that support international trade. Emphasizes understanding the language of trade for documents and movement of goods and services while meeting corporate needs within environmental constraints and corporate goals. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

MGT-206 Global Business Skills (3)
Focuses on fundamental global business skills needed in today’s global business environment. Includes a basic understanding of globalization as it impacts the business environment, close examination of culture as it relates to business, ethical decision making in the cross-cultural environment, and culturally appropriate techniques for international business settings. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

MGT-300 Introduction to Entrepreneurship (3)
Examines the feasibility of a new business concept and the fundamentals of organizing a small business. Students measure their potential as an entrepreneur, identify business opportunities, examine entry strategies, understand the advantages and disadvantages of buying a business and evaluate the value of that business. Focuses on realizing business strengths, weaknesses, opportunities and threats. Implements the planning process through feasibility and business plans. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MGT-301 Management Capstone (3)
Emphasizes current trends in management and upper-level management concepts such as planning, organizing, leading and controlling. Provides a career component that focuses on employment tools, tips, preparation and industry exploration. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-102, MGT-101, MGT-145; Arts & Sciences Elective Code: B

MGT-305 Business Plans for Entrepreneurs (3)
Focuses on small business strategies by developing a business plan and studying successful small businesses. Incorporates finance, marketing, sales, organizational structure, and strategic management and decision making. Addresses the unique entrepreneurial experience of conceiving, evaluating, creating, managing and potentially starting a business. Credits: 3, Hours: (3/0/0/0), Prereq: MGT-300; Arts & Sciences Elective Code: B

MGT-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

MGT-928 Independent Study (1-4)
Taken concurrently with a standard course in the student’s area of specialty. Special projects and/or individual readings are assigned by the program coordinator or an individual staff member. Projects must be approved before the beginning of the semester in which the work is to be done. Credits: 1-4, Hours: (1-4/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

MIL: Military

MIL-100 Foundations of the U.S. Air Force I (1)
Introduces the U.S. Air Force and Air Force Reserve Officer Training Corps (AFROTC). Features the history and structure of the Air Force, its capabilities, career opportunities, installations, and core values while developing team building, communication and leadership skills. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

MIL-101 Foundations of the U.S. Air Force II (1)
Continues Foundations I. Provides more information about the U.S. Air Force and Air Force Reserve Officer Training Corps (AFROTC). Features the history and structure of the Air Force, its capabilities, career opportunities, installations, and core values while developing team building, communication and leadership skills. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

MIL-104 Army ROTC Leadership & Personal Development (1-3)
This is the first semester in a four-semester sequence that is the "basic course" of Army ROTC. This course introduces cadets to the military personal challenges and competencies that are
critical for effective leadership. Cadets learn how
the personal development of life skills such as
critical thinking, goal setting, time management,
physical fitness, and stress management relate to
leadership, officerhood, and the Army profes-
sion. The focus is on developing basic knowledge
and comprehension of Army leadership dimen-
sions while gaining a big picture understanding of
the ROTC program, its purpose in the Army, and
its advantages for the student. No military obliga-
tion is associated with participation in the course.
Credits: 1-3, Hours: (1-3/0/0/0), Arts & Sciences
Elective Code: A

MIL-105 Army ROTC Introduction to Tactical
Leadership (1-3)
This is the second semester in a four-semester
sequence that is the "basic course" of Army
ROTC. The course builds on the foundations of
officerhood that were developed in the first sem-
ster class. This course overviews leadership
fundamentals such as setting direction, prob-
lem-solving, listening, presenting briefs, providing
feedback, and using effective writing skills. Ca-
dets explore dimensions of leadership values,
attributes, skills, and actions in the context of
practical, hands-on, and interactive exercises.
Cadre role models and the building of stronger
relationships among the cadets through common
experience and practical interaction are critical
aspects of the experience. No military obligation
is associated with participation in the course.
Credits: 1-3, Hours: (1-3/0/0/0), Prereq:
MIL-104; Arts & Sciences Elective Code: A

MIL-110 AFROTC Leadership Lab I (1)
Develops knowledge of what is required to be an
Air Force officer by honing leadership skills
through hands-on experience and performing
various tasks at the University of Iowa AFROTC
Detachment. Faculty supervise all labs, but stu-
dents plan and conduct all events. Credits: 1,
Hours: (1/0/0/0), Arts & Sciences Elective Code: A

MIL-112 AFROTC Leadership Lab II (1)
Develops knowledge of what is required to be an
Air Force officer by honing leadership skills
through hands-on experience and performing
various tasks at the University of Iowa AFROTC
Detachment. Faculty supervise all labs, but stu-
dents plan and conduct all events. Credits: 1,
Hours: (1/0/0/0), Arts & Sciences Elective Code: A

MIL-200 The Evolution of USAF Air & Space
Power I (3)
Provides general aspects of air and space power
through historical perspectives. Covers the time
from the first balloons and dirigibles to the Space
Age global positioning systems of the Persian
Gulf War. Historical examples define the Air
Force's capabilities and missions, and demon-
strate the evolution of today's USAF air and space
power. Credits: 1, Hours: (1/0/0/0), Arts & Sci-
ences Elective Code: A

MIL-204 Army ROTC Innovative Team
Leadership (1-3)
This is the third semester in a four-semester
sequence that is the "basic course" of Army
ROTC. The course explores the dimensions of
creative and innovative tactical leadership strat-
egies and styles by examining team dynamics and
two historical leadership theories that form the
basis of the Army leadership framework (trait and
behavior theories). Cadets practice aspects of
personal motivation and team building in the con-
text of planning, executing, and assessing
team exercises and participating in leadership
labs. Focus is on continued development of the
knowledge of leadership values and attributes
through an understanding of Army rank, struc-
ture, and duties, and basic aspects of land navi-
gation and squad tactics. No military obligation
is associated with participation in the course.
Credits: 1-3, Hours: (1-3/0/0/0), Prereq: MIL-105;
Arts & Sciences Elective Code: A

MIL-205 Army ROTC Tactical Leadership (1-3)
This is the final semester in a four-semester se-
quence that is the "basic course" of Army ROTC.
The course examines the challenges of leading
tactical teams in the complex contemporary op-
erating environment (COE). The course highlights
dimensions of terrain analysis, patrolling, and
operation orders. Further study of the theoretical
basis of the Army leadership framework explores
dynamic leadership in the context of military
operations. Cadets develop greater self-awareness as they assess their own leader-
ship styles and practice communication and team
building skills. No military obligation is associated
with participation in the course. Credits: 1-3,
Hours: (1-3/0/0/0), Prereq: MIL-204; Arts & Scien-
ces Elective Code: A

MKT: Marketing

MKT-130 Social Media in Business (3)
Outlines the fundamentals of social media mar-
keting in business. Addresses strategies for inte-
grating a solid social content plan with traditional
marketing plans and/or organizational goals for
utilizing social media, and determining the best
social media platforms. Credits: 3, Hours:
(3/0/0/0), Prereq: MKT-110; Arts & Sciences
Elective Code: B

MKT-135 Content Marketing (3)
Outlines the fundamentals of creating online
marketing content that support social media
marketing strategies. Addresses strategies for
customizing creative content that meets ROI
objectives, developing and maintaining online
professional presence through optimization of
content and appropriate business communica-
tions for various platforms. Credits: 3, Hours:
(3/0/0/0), Prereq: MKT-110, MKT-130; Arts &
Sciences Elective Code: B

MKT-140 Principles of Selling (3)
Provides basic skills needed to sell goods and
services in a marketing economic system. Stu-
dents learn about careers in selling, buyer be-
havior, product knowledge and selling concepts.
Emphasis is on problem solving. Credits: 3,
Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MKT-150 Principles of Advertising (3)
Acquaints students with the philosophy of adver-
tising, historical concepts, and practical applica-
tions of advertising at the local and national
levels. Includes media and media selection, copy-
writing, and layout, with an emphasis on product
selection for advertising. Credits: 3, Hours:
(3/0/0/0), Arts & Sciences Elective Code: A

MKT-160 Principles of Retailing (3)
Studies retailing and its functions in a free enter-
prise system. All facets of retail operation are
considered including planning, organization,
personnel, facilities, control, pricing, buying,
selling and promotion. Credits: 3, Hours:
(3/0/0/0), Arts & Sciences Elective Code: A

MKT-168 Buying and Merchandising Strategies
(3)
Studies buying and merchandising principles as
they apply to management. Decision-making and
critical thinking skills are developed in buying,
inventory control and pricing. Credits: 3, Hours:
(3/0/0/0), Arts & Sciences Elective Code: B

MKT-180 Customer Service Strategies (1)
Designed to help students target their customers
and develop appropriate services. Discusses the
use of effective customer services as a competi-
tion tool. Credits: 1, Hours: (1/0/0/0), Arts &
Sciences Elective Code: B

MKT-190 International Marketing (3)
Covers the theoretical and practical concepts of
international marketing. A clear delineation of
marketing functions in domestic and internation-
al business is stressed. Other topics covered
include cultural dynamics of the global markets,
political and legal environment and multinational
markets. Credits: 3, Hours: (3/0/0/0), Arts &
Sciences Elective Code: A

MKT-195 Marketing Management (3)
Examines the marketing process from product
conception to production and delivery. Empha-
sizes marketing plan development, situation analysis, marketing strategies and product management for both new and current products. Utilizes a group project to develop and enhance marketing and management skills. Credits: 3, Hours: (3/0/0/0), Prereq: MKT-110; Arts & Sciences Elective Code: A

MKT-924 Honors Project (1) Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

MKT-928 Independent Study (1-3) Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

MMS: Mass Media Studies

MMS-101 Mass Media (3) Surveys the field of mass communications. Takes the theoretical position that mass communication is a social system, considering the functions, structure and performance of the individual medium, as well as the auxiliaries. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MMS-104 Introduction to Electronic Production (2) Presents basic principles and techniques used in audio and video production. Emphasizes studio operation, including how to operate cameras and studio switchers, and how to serve as floor director. Includes audio techniques such as operation of audio console and use of prerecorded music. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MMS-131 News Reporting (3) Involves an in-depth study of objective news reporting and advocacy journalism as well as training in writing leads, the news story, interviewing, copyright and editing. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A; Comments: Ability to type 30 wpm required

MMS-133 News Media Convergence (3) Introduces skills required for print, broadcast and Web journalism. Students develop skills that include identifying news, interviewing and event coverage, researching, reporting, writing print and broadcast material and converting it to the Web. Final versions of stories will be evaluated for publication in the Communique, broadcast on KSP News and posted to the Kirkwood Student Media Web site. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of program coordinator

MMS-155 Visual Reporting (2) Introduces communication with photo graphics, editing and combining words and photographs for newspapers, magazines and brochures. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: A

MMS-200 Advanced Audio (2) Teaches recording, editing and audio production techniques. Students conduct interviews and create music sound tracks. Credits: 2, Hours: (1/2/0/0), Prereq: MMS-104; Arts & Sciences Elective Code: A

MMS-215 Broadcast Writing and Performance (3) Emphasizes scripts and commercial writing skills. Students will announce and perform before microphones and cameras. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MMS-220 Advanced Television (2) Designed to teach students the proper operation of remote video and audio equipment. Course emphasizes script writing and videotape editing. Final projects will be televised on Kirkwood's cable channel. Credits: 2, Hours: (1/2/0/0), Prereq: MMS-104; Arts & Sciences Elective Code: A

MMS-240 Promotions and Public Relations (3) Teaches how to plan an effective promotional campaign by identifying target audiences, understanding the effect of mass communication media and preparing materials for media campaigns. Includes principles of design and layout. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MMS-290 Field Experience (3) Provides on-the-job training in the media field. Credits: 3, Hours: (0/0/9/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor/coordinator

MMS-928 Independent Study (1-3) Allows the student to pursue a special concentration of study under the guidance of a faculty member. Requires an independent study contract. Credits: 1-2, Hours: (0/2-4/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising faculty member and dean

MMS-948 Special Projects (1) Provides opportunity to carry out a media project under professional direction. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

MTR: Medical Transcription

MTR-102 Professionalism in Medical Transcription (2) Provides an overview of the career through lectures, job shadowing and a tour, with an emphasis on professional issues and confidentiality. Credits: 2, Hours: (2/0/0/0), Coreq: HSC-115; Arts & Sciences Elective Code: B

MTR-113 Medical Transcription (2.5) Develops skills of transcribing various medical reports with an emphasis on the proper use of medical terminology. Introduces transcription systems and management techniques. Confidentiality in the completion of medical reports is stressed. Credits: 2.5, Hours: (2.5/0/0/0), Coreq: HSC-115, MTR-102; Arts & Sciences Elective Code: B

MTR-150 Career Medical Transcription (6.5) Includes transcribing physician-dictated reports with an emphasis on developing accuracy, speed and medical knowledge for transcription of medical reports. Correct usage of grammar, punctuation, editing and proofreading skills are emphasized along with professionalism and confidentiality. Credits: 6.5, Hours: (6.5/0/0/0), Prereq: MTR-113; Arts & Sciences Elective Code: B; Comments: All Medical Transcription courses

MUA: Music - Applied

MUA-101 Applied Voice (1-2) Provides weekly applied lessons and guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons and regular practice of fundamental techniques, repertoire and performance. This course is not intended for students who wish to pursue transfer study in music. One weekly 30-minute lesson is one credit. One weekly 60-minute lesson is 2 credits. May be repeated for credit. Credits: 1-2, Hours: (1-2/0/0/0), Arts & Sciences Elective Code: A

MUA-119 Class Piano (1) Introduces a wide range of basic functional performance skills enabling students to utilize the piano/keyboard for enjoyment and as a stepping stone for further piano studies. Includes sight-reading, harmonization, repertoire, accompanying, transcription, improvisation and other creative activities. Students with a transfer interest in music and no prior piano skills should enroll in this course. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

MUA-147 Applied Instrumental (1-2) Provides weekly applied lessons and guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons and regular practice of fundamental techniques, repertoire and performance. This course is not intended for students who wish to pursue transfer study in music. One weekly 30-minute lesson is one credit. One weekly 60-minute lesson is 2 credits. May be repeated for credit. Credits: 1-2, Hours: (1-2/0/0/0), Arts & Sciences Elective Code: A

MUA-300 Applied Euphonium (2) Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertoire. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-301 Applied Bassoon (2) Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertoire. May be repeated for credit. Credits: 2,
MUA-302 Applied Cello (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-303 Applied Clarinet (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-304 Applied Percussion (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-305 Applied Flute (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-306 Applied French Horn (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-307 Applied Guitar (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-308 Applied Oboe (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-310 Applied Piano (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-311 Applied Saxophone (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-312 Applied String Bass (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-314 Applied Trombone (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-315 Applied Trumpet (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-316 Applied Tuba (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-317 Applied Viola (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-318 Applied Violin (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUA-319 Applied Voice (2)
Instruction intended for advanced students and those with a transfer interest in music. Provides weekly one hour applied lessons, and a weekly performance seminar. Includes guided instruction in tone production, technique, musicianship and performance practice. Students advance their skills through weekly lessons, seminar, and regular practice of fundamental techniques and solo repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUS: Music - General

MUS-100 Music Appreciation (3)
Includes study of elements and forms of music with attention to major historical periods and composers of historical significance and survey of indigenous music. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MUS-102 Music Fundamentals (3)
Introduces music majors and nonmajors to the principal elements of music theory including notation, melody, choral harmony and musical form. Intended for students with strong interest but limited background in music theory. Credits:
192 Course Descriptions

3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MUS-120 Music Theory I (3)
Studies the notation of pitch and rhythm, meter, major and minor key relationships, melodic structure, intervals, triads, two-part counterpoint, the basics of four-part harmony and instrument transposition. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MUS-121 Music Theory II (3)
Studies seventh chords (spelling, quality, inversions, Roman numerals and figures) and the use of all inversions of diatonic seventh chords in four-part harmony, melodic phrase structures and the harmonization of melody, the concepts of modulation and tonicization (secondary-dominant function chords), and binary and ternary forms. Credits: 3, Hours: (3/0/0/0), Prereq: MUS-120; Arts & Sciences Elective Code: A

MUS-127 Great Composers (3)
Examines composers and musical compositions specific to the Western classical music tradition. Uses the case studies of nearly 30 specific composers and works to answer these questions: Is there such a thing as a "masterpiece of music" and, if so, why do these masterpieces endure? Expands the student’s knowledge of classical masterworks and their creators, and offers a broader appreciation of the historical and cultural significance of classical concert music through listening exercises, class discussions and attending live performances. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MUS-135 Music Theory Lab I (1)
Supports the objectives in MUS-120 by developing skills in ear training (aural identification of scales, intervals and chords), dictation (rhythmic, melodic and harmonic), and sight singing. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

MUS-136 Music Theory Lab II (1)
Continuation of Music Theory Lab I. Supports the objectives in MUS-121 by developing skills in ear training (aural identification of scales, intervals and chords), dictation (rhythmic, melodic and harmonic) and sight singing. Credits: 1, Hours: (0/2/0/0), Prereq: MUS-135; Arts & Sciences Elective Code: A

MUS-140 Concert Choir (1)
Serves students with ability and desire to sing in a mixed-voice group. May be repeated for credit. Credits: 1, Hours: (0/0/3/0), Arts & Sciences Elective Code: A

MUS-145 Concert Band (1)
Introduces new literature each semester to extend the experience of the student's learning to read and play different styles and tempos. This group is open to community members and does not require an audition. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

MUS-150 Chamber Ensemble (1)
Students practice and perform traditional literature for trios, quartets and other small groups. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

MUS-157 Vocal Jazz Ensemble (1)
Provides auditioned members an opportunity to sing a variety of jazz styles from traditional to contemporary arrangements. May be repeated for credit. Credits: 1, Hours: (0/5/0/0), Arts & Sciences Elective Code: A

MUS-163 Instrumental Jazz Ensemble (1)
Explores various styles of jazz from traditional to contemporary through a performance-oriented class. May be repeated for credit. Credits: 1, Hours: (0/0/0/4), Arts & Sciences Elective Code: A

MUS-165 Jazz Combo (1-2)
Explores various styles of jazz in a small group setting and emphasizes improvisational techniques. This course must be taken for a grade, may not be challenged and is transferable. Credits: 1-2, Hours: (0/2/4/0), Arts & Sciences Elective Code: A

MUS-191 Jazz Improvisation (2)
Studies theoretical principles and techniques used in the jazz idiom. Provides opportunity for application of music theory at the performance level to include scales, chord progressions, melodic patterns and rhythmic elements. Recommended for both instrumentalists and vocalists. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MUS-193 Jazz Improvisation II (2)
Continues the study as outlined in Jazz Improvisation. Credits: 2, Hours: (2/0/0/0), Prereq: MUS-191; Arts & Sciences Elective Code: A

MUS-207 Introduction to Film Music (3)
Familiarizes students with the major genres of film and notable film composers from the early twentieth century to the present. Analyzes movie soundtracks to discover how film composers influence the mood of the film, affect the development of characters and propel the narrative. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MUS-208 American Popular Music & Jazz (3)
Examines the evolution of American popular music styles and jazz genres from their early stages to the present. Emphasizes important individual works, composers and performers of jazz, rock, folk, blues and others. Enlarges the use of basic music vocabulary, improves aural perception of style and genre, and encourages a fuller understanding of how popular music and jazz enrich life, function in society and reflect cultural diversity. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MUS-209 Topics in Western Music History (3)
Examines style periods, composers and works of Western art music from c. AD 600 to the present, and explores the issues that influenced their composition. Through reading, listening and discussion, the course builds a basic musical vocabulary, improves aural perceptions of form and genre, and encourages a deeper appreciation for music as cultural expression and personal enrichment. Music reading is helpful, but not necessary. Intended for students with strong interest in music. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MUS-220 Music Theory III (3)
Studies plainchant and modal theory; early polyphony in 2, 3 and 4 voices; inventions and fugues, borrowed, Neapolitan and augmented sixth harmonies; harmonic and melodic variations; sonata form and rondo form. Examines and analyzes music from the medieval period through the early Romantic era. Credits: 3, Hours: (3/0/0/0), Prereq: MUS-121; Arts & Sciences Elective Code: A

MUS-221 Music Theory IV (3)
Studies enriched and chromatically altered harmonies and enharmonic modulation; instrument transposition and the orchestral score; the materials of Impressionism; tonality in the 20th century; and atonality, set theory and twelve-tone structures. Examines and analyzes music from the 1820s to the present. Credits: 3, Hours: (3/0/0/0), Prereq: MUS-220; Arts & Sciences Elective Code: A

MUS-235 Music Theory Lab III (1)
Supports the objectives in MUS-220 by developing advanced skills in ear training (aural identification of scales, intervals and chords), dictation (rhythmic, melodic and harmonic) and sight singing. Credits: 1, Hours: (0/2/0/0), Prereq: MUS-136; Arts & Sciences Elective Code: A

MUS-236 Music Theory Lab IV (1)
Continuation of Music Theory Lab III. Supports the objectives in MUS-221 by developing advanced skills in ear training (aural identification of scales, intervals and chords), dictation (rhythmic, melodic and harmonic) and sight singing. Credits: 1, Hours: (0/2/0/0), Prereq: MUS-235; Arts & Sciences Elective Code: A

MUS-259 Intro to MIDI (3)
Presents an overview of and practical experience music-related hardware and software products. Introduces Musical Instrument Digital Interface (MIDI), along with digital audio and its application to composition, orchestration, recording, performance and education. Includes drum programming, plug-ins, loops, soft synths, instrument patch maps, MIDI/Audio editing and file conversion. Emphasizes sequencing software and synthesizers to produce music projects. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A; Comments: Knowledge of basic music fundamentals required.

MUS-263 Advanced MIDI (3)
Emphasizes advanced Musical Instrument Digital Interface (MIDI) topics and explores, in detail, MIDI and digital audio components. Includes sample libraries, groove clips, soft synths, MIDI/audio/video synchronization, electronic keyboards and signal processors. Students create original compositions and music projects of increasing complexity with Sonar sequencing and Finale notation programs. Credits: 3, Hours: (3/0/0/0), Prereq: MUS-259; Arts & Sciences Elective Code: A

MUS-268 Audio Production I (3)
Studies the history, theory and techniques of audio production. Focuses on the fundamentals of sound: what it is, how it is created and how we perceive it. Studies capturing, editing, mixing and mastering audio using a variety of analog and digital equipment, and computer software such as Pro Tools, Logic Pro, Sonar and SAW. Credits: 3, Hours: (3/0/0/0), Prereq: MUS-259; Arts & Sciences Elective Code: A
Course Descriptions

3. Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MUS-269 Audio Production II (3)
Continues the study of the history and theory of audio production. Expands on the fundamentals of sound by working with diverse musical ensembles and events. Studies advanced recording, mixing and mastering techniques in a variety of hands-on, real world situations. Credits: 3, Hours: (2/2/0/0), Prereq: MUS-268; Arts & Sciences Elective Code: A

MUS-284 Songwriting (2)
Develops skills in melody, harmony and arranging, as well as creative approaches to musical composition, lyric writing and an individual writing style. Students focus on both songwriting and performance, culminating in a portfolio of their original songs. Emphasis is on computer music technology. Students complete a portfolio of several songs that typify various current practices of contemporary songwriters. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A; Comments: Basic music fundamentals, familiarity with basic computer skills. Requires permission of instructor.

MUS-286 Sound Reinforcement (3)
Continues the study of the history and theory of audio production, as it relates specifically to live sound engineering. Applies the knowledge of live sound engineering while working with diverse musical ensembles and events, in a variety of hands-on, real world situations. Credits: 3, Hours: (2/2/0/0), Prereq: MUS-268; Arts & Sciences Elective Code: A

MUS-298 Performance Seminar for Musicians (1)
Provides the opportunity to develop and improve performing techniques required of all musicians. Emphasizes student performances, development of repertoire and discussion of performance style. Required of all music majors and open to all students enrolled in applied lessons. May be taken four times for credit. Credits: 1, Hours: (0/2/0/0), Coreq: Any applied music lesson MUA-300 through MUA-319; Arts & Sciences Elective Code: A

MUS-924 Honors Project (1)
Qualifies a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

MUS-928 Independent Study (1-2)
Allows the student to pursue a special concentration of music study under the guidance of a faculty member. Requires an independent study contract. Credits: 1-2, Hours: (0/2-4/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising faculty member and dean

NET: Computer Networking

NET-122 Computer Hardware Basics (3)
Introduces the operation of a modern personal computer from a hardware point of view. Students learn about the basic components of a computer and develop troubleshooting skills for advanced courses. Some of the areas covered include system boards, storage drives, memory and power supply. In addition, some software topics, such as operating systems, are presented. Low-level laboratory exercises enhance and reinforce understanding of the material covered. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

NET-137 Advanced PC Concepts (3)
Follows and builds on the prerequisite, Computer Basics. The first half of the course is spent reviewing, but also going into more depth on the topics covered in the beginning hardware course. The second half of the course deals primarily with software considerations (such as BIOS, drivers and operating systems) necessary to understanding how modern PCs work. Throughout the course, tie-in to A+ certification topics is done for the benefit of those who plan to take the Comp-TIA exam. Credits: 3, Hours: (2/2/0/0), Prereq: NET-122; Arts & Sciences Elective Code: B

NET-154 Networking Basics (3)
Introduces the foundations of networking, including concepts, terminology and practical experience, to explore entry-level career opportunities in IT and networking. Provides a hands-on approach to learn and use networking tools as they apply to home and small businesses. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

NET-156 Network Plus (3)
Prepares users for a basic introduction to networking, and can also be used to prepare for CompTIA's Network+ certification exam. Presents current networking hardware and software along with the skills necessary to succeed in the field of networking. Covers protocols, network design and implementation, and troubleshooting and support. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

NET-174 LAN Administration (3)
Focuses on the hardware and software requirements of a client-server network, the installation process, workstation configuration and configuration of the user environment using a current network operating system. Includes workstation and server configuration, network printing setup, creation and management of network user accounts, security, scripting, directory structures, and file server management and monitoring. Introduces network administrator duties, such as network configuration and system support. Credits: 3, Hours: (2/2/0/0), Prereq: NET-321; Arts & Sciences Elective Code: B

NET-184 Wide Area Network (WAN) Basics (2)
Introduces the student to concepts used to connect multiple local area networks to form a wide area network. Topics include routing, hardware used to connect network segments, leased telephone lines, dial-up telephone lines and other transmission media. Credits: 2, Hours: (2/0/0/0), Prereq: NET-236; Arts & Sciences Elective Code: B

NET-192 Network Cabling (3)
Introduces students to the advanced concepts of network infrastructure. Students learn what types of media are used and the concepts about the manufacture and installation of that media. Additionally, students work with copper media in installation, trim-out and finishing. Other topics include infrastructure standards, request for proposals and basic electrical theory. Credits: 3, Hours: (2/2/0/0), Prereq: NET-236; Arts & Sciences Elective Code: B

NET-235 CCNA Cisco 1 (3)
Introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. Focuses on the principles and structure of IP addressing and the fundamentals of Ethernet concepts, media and operations to provide a foundation for the curriculum. Covers building simple LANs, performing basic configurations for routers and switches, and implementing IP addressing schemes. Credits: 3, Hours: (2/2/0/0), Prereq: NET-154 or NET-165; Arts & Sciences Elective Code: B

NET-236 CCNA Cisco 2 (3)
Describes the architecture, components, and operations of routers and switches in a small network. Covers configuring a router and a switch for basic functionality, troubleshooting routers and switches, and resolving common issues with RIPv1, RIPv2, single-area and multi-area OSPF, virtual LANs, and inter-VLAN routing in both IPv4 and IPv6 networks. Credits: 3, Hours: (2/2/0/0), Prereq: NET-235; Arts & Sciences Elective Code: B

NET-237 CCNA Cisco 3 (3)
Describes the architecture, components, and operations of routers and switches in a larger and more complex network. Covers configuring routers and switches for advanced functionality, troubleshooting routers and switches, and resolving common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Develops knowledge and skills needed to implement DHCP and DNS operations in a network. Credits: 3, Hours: (2/2/0/0), Prereq: NET-236; Arts & Sciences Elective Code: B

NET-238 CCNA Cisco 4 (3)
Discusses the WAN technologies and network services required by converged applications in a complex network. Enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Covers configuring and troubleshooting network devices and resolving common issues with data link protocols. Develops the knowledge and skills needed to implement IPsec and virtual private network (VPN) operations in a complex network. Credits: 3, Hours: (2/2/0/0), Prereq: NET-237; Arts & Sciences Elective Code: B

NET-321 Windows Networking (3)
Allows students to design and build LANs with various versions of Microsoft Windows workstations. Students learn software and hardware requirements, operating system installation, operation and maintenance, and networking technologies. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

NET-322 Windows Network Management (3)
Explains administrative duties for Windows Server 2003. Includes installing, configuring and maintaining client and server operating systems, monitoring performance and supporting users, evaluating different versions of Server 2003, exploring services such as DHCP, Clustering, Remote Access, DNS, Virtual Private Networking.
and learning to implement security using permissions, encryption and policies. Credits: 3; Hours: (2/2/0/0), Prereq: NET-561; Arts & Sciences Elective Code: B

**NET-338 Directory Concepts (3)**
Covers basic network design, how directory services are used to manage users, and how to pick servers based on proper utilization. Students learn basic elements and design of both Novell E-directory, Microsoft active directory and related LDAP directory services. Additionally, students are introduced to server concepts including system requirements, volume management and security. Credits: 3; Hours: (3/0/0/0), Prereq: NET-321; Arts & Sciences Elective Code: B

**NET-348 System Automation and Scripting (3)**
Explores system automation through the use of scripts. Focuses on designing and implementing scripts that parse event logs, configure hardware, software and networking components. Credits: 3; Hours: (2/2/0/0), Prereq: NET-561 and either MAT-102 or MAT-708; Arts & Sciences Elective Code: B

**NET-400 Linux Networking (3)**
Focuses on Linux GUI. Introduces Linux installation, navigating the Linux GUI, creating Linux users and groups, setting up Linux file and directory permissions, managing the Linux file system, using the Linux control panel to customize the system, configuring the Linux network, and developing basic command line and DNS skills. Credits: 3; Hours: (2/2/0/0), Prereq: NET-321; Arts & Sciences Elective Code: B

**NET-561 Directory Administration (3)**
Continues Directory Concepts. Focuses on implementation of Active Directory using Windows Server, and eDirectory using NetWare 6.x. Includes configuration and management of organizations, users, groups, printers, file systems, and many other directory service objects. Introduces virtualization concepts and students deploy software in a virtual environment. Credits: 3; Hours: (2/2/0/0), Prereq: NET-174, NET-338; Arts & Sciences Elective Code: B

**NET-571 Server Configuration (3)**
Emphasizes managing Linux in a multi-server enterprise environment. Introduces enterprise-level skills in integrating Linux servers in a multiple server environment, configuring advanced network services such as FTP, VPNs, remote management, Web services, DNS, DHCP, LDAP Directory Services, logical volume management, scripting and advanced software installation. Other services may include e-mail and LAMP package management. Credits: 3; Hours: (2/0/0), Prereq: NET-338, NET-400; Arts & Sciences Elective Code: B

**NET-572 VMware Certified Advanced Professional (VCAP) (3)**
Emphasizes security, advanced troubleshooting and performance management for VMware Virtual Infrastructure. Prepares students for the VMware Certified Advanced Professional (VCAP) Data Center Administrator exam. Credits: 3; Hours: (2/2/0/0), Prereq: NET-599, NET-616; Arts & Sciences Elective Code: B

**NET-599 Information and Storage Management (3)**
Emphasizes advanced storage architectures, protocols and systems, including Network-Attached Storage (NAS), iSCSI Storage Area Networks (SAN), Fibre Channel Networks, Internet Protocol SANs (IPSAN) and Content-Addressable Storage (CAS). Prepares student for the EMC Proven Professional Associate Certification exam. Credits: 3; Hours: (2/2/0/0), Prereq: NET-174, NET-235, NET-400; Arts & Sciences Elective Code: B

**NET-600 Network Security Basics (3)**
Introduces students to basic network security concepts. The non-vendor specific course includes general security concepts, authentication, attacks, secure communications and Internet security. Additional topics include perimeter defense and intrusion detection. This course begins student preparation for the Security+ exam. Credits: 3; Hours: (2/2/0/0), Prereq: NET-174, NET-235; Arts & Sciences Elective Code: B

**NET-616 VMware VCP (3)**
Emphasizes virtual network design and implementation, in an enterprise environment. Includes advanced storage area networks, high availability design, virtual system management, virtual switching and virtualization security. Covers the vSphere 5.0 VMware Certified professional (VCP) exam domains. Credits: 3; Hours: (2/2/0/0), Prereq: NET-236; Arts & Sciences Elective Code: B

**NET-618 Network Defense & Remote Access Configuration (3)**
Focuses on network defenses and defensible networks. Includes basic network defense topologies, basic DMZ concepts, basic intrusion detection configuration and logical security management (proper address assignment, software configuration). Examines identity management systems, such as directory services, to provide authentication, authorization and auditing for sound security management. Includes basic remote access configuration. Credits: 3; Hours: (2/2/0/0), Prereq: NET-600, NET-630; Arts & Sciences Elective Code: B

**NET-619 Network Attacks: Detection, Analysis & Countermeasures (3)**
Provides students the opportunity to attack computer networks to test their defenses and teaches them how to analyze attacks. Topics include attacks and attack analysis, intrusion detection and analysis, and advanced defense countermeasure configuration using firewalls, routers and intrusion detection systems. Credits: 3; Hours: (2/2/0/0), Prereq: NET-618; Arts & Sciences Elective Code: B

**NET-630 Cyber Law and Ethics (3)**
Covers basic laws and ethical behavior associated with network security. Topics include discussions about common practices used to secure networks as well as test them, and the potential these methods can have in creating a secure network environment. Also included are discussions about HIPAA and Sarbanes-Oxley laws, and the importance of information technology practices. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: B

**NET-680 TCP/IP for Networking (3)**
Introduces students to the concepts of the TCP/IP suite of protocol. Students learn IP addressing, dynamic host configuration protocol, domain name services, universal naming conventions and how this protocol is used to connect to the Internet. Credits: 3; Hours: (2/2/0/0), Prereq: NET-236; Arts & Sciences Elective Code: B

**NET-785 Fundamentals of Desktop Support (3)**
Introduces the concepts of supporting personal computers as a career. Students improve their proficiency in providing personal computer support by troubleshooting real-life scenarios including specification/management considerations, and customer service skills. Lab may include students volunteering at not-for-profit organizations upgrading computers and computer peripherals. Credits: 3; Hours: (2/2/0/0), Arts & Sciences Elective Code: B

**NET-850 Special Topics for PC Technicians (3)**
Focuses on the two intertwining themes of today’s networking technician: the history/future of computer technology and the social implications of that technology. Projects, expert speakers and possibly field trips are used to help explore such diverse topics as ethical computing, computer career trends, encryption and security, the wireless world, and the human face of computing. Credits: 3; Hours: (2/2/0/0), Prereq: NET-122; Arts & Sciences Elective Code: B

**NET-924 Honors Project (3)**
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1; Hours: (1/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

**NET-928 Independent Study (1-3)**
Provides readings, papers and basic research or other projects under the individual guidance of a faculty member. Credits: 1; Hours: (1/0/0), Arts & Sciences Elective Code: A; Comments: Requires permission of instructor, dean

**OTA: Occupational Therapy Assistant**

**OTA-100 Foundations of Occupational Therapy (3)**
Introduces the philosophical, ethical and theoretical concepts of the current practice of occupational therapy. Provides an overview of the role of the OT and OTA in the processes of patient evaluation, intervention planning, implementation and discharge. Addresses human diversity in relation to occupation. Presents note writing and goal development. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: B

**OTA-150 Occupational Therapy Assistant Medical Terminology (1.5)**
Introduces medical terminology, including prefixes, suffixes, root words, and combined forms. Presents medical terminology specific to the practice of the OTA. Credits: 1.5; Hours: (1.5/0/0/0), Coreq: OTA-100, OTA-207; Arts & Sciences Elective Code: B
OTA-200 Community Health and Special Populations (4)
Provides knowledge and instruction for the intervention, prevention, and maintenance that create optimal occupational performance in individuals and populations. Clinical observation experience is included. Credits: 4, Hours: (3/2/0/0), Prereq: OTA-851; Arts & Sciences Elective Code: B

OTA-205 Occupational Therapy Assistant Management (2)
Includes the basic principles of management for the OTA. Topics include levels of authority and responsibility, supervisory process, performance appraisal, and policies and procedures. Discusses state and professional association regulations and legal/ethical issues. Explores reimbursement systems and their impact on health care, as well as public policy and professional advocacy. Covers resume writing, interviewing and employability skills. Credits: 2, Hours: (2/0/0/0), Prereq: OTA-850, OTA-851; Arts & Sciences Elective Code: B

OTA-207 OT Methods I (3)
Introduces methods and techniques used in OT. Provides knowledge and skill in the use of activity analysis, task analysis, occupational performance and application of the OT framework. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

OTA-208 Occupational Development (2.5)
Presents evaluations and treatment methods for the OTA. Focuses on the assessment and intervention of the geriatric population. Credits: 2.5, Hours: (2/0/0/0), Prereq: OTA-100, OTA-207, PSY-111; Arts & Sciences Elective Code: B

OTA-211 Pathophysiology for the OTA (4)
Covers pathology, etiology, diagnosis, signs, symptoms and prognosis. Credits: 4, Hours: (4/0/0/0), Prereq: OTA-100, OTA-207 and either BIO-161 or BIO-168/173 or BIO-177/180; Arts & Sciences Elective Code: B

OTA-212 Functional Kinesiology (3)
Provides a basic understanding of normal body movement as related to skeletal, muscular and neurological systems. Focuses on muscle origin, insertion and action, joint structure, anatomical palpation, human gait, and movement analysis during functional activities and daily life skills. Credits: 3, Hours: (2/2/0/0), Prereq: OTA-100, OTA-207 and either BIO-161 or BIO-168/173 or BIO-177/180; Arts & Sciences Elective Code: B

OTA-306 OT Methods II (3)
Presents evaluations and treatment methods for individuals used in occupational therapy. Emphasizes observation and adaptation of daily living skills, feeding and eating, functional mobility, adaptive equipment, compensatory techniques and documentation of the intervention process. Credits: 3, Hours: (2/2/0/0), Prereq: OTA-207; Arts & Sciences Elective Code: B

OTA-308 Physical Dysfunction I (4)
Presents theory and evaluation for physical and cognitive occupational dysfunction. Credits: 4, Hours: (3/2/0/0), Prereq: OTA-100, OTA-211, OTA-212; Arts & Sciences Elective Code: B

OTA-309 Physical Dysfunction II (4)
Presents application of intervention approaches for individuals and groups with physical and cognitive occupational dysfunction. Credits: 4, Hours: (3/2/0/0), Prereq: OTA-308; Arts & Sciences Elective Code: B

OTA-405 Psychosocial Dysfunction (4)
Presents diagnosis, symptomology and etiology of psychosocial dysfunction. Discusses theory, evaluation, and interventions for individuals and groups with psychosocial occupational dysfunction. Provides knowledge of OT and OTA role delineation in psychiatric settings. Credits: 4, Hours: (4/0/0/0), Prereq: OTA-208; Coreq: OTA-211; Arts & Sciences Elective Code: B

OTA-406 OT Methods III (3)
Presents information on the evaluation and treatment methods for work, leisure, wheelchair selection, seating and positioning, psychosocial, cognitive and perceptual activities. Presents the fabrication of splints, low vision, assistive technology, physical agent modalities and use of orthotics. Credits: 3, Hours: (2/2/0/0), Prereq: OTA-306; Arts & Sciences Elective Code: B

OTA-409 Professional Development (3)
Explores self and professional association regulations and requirements, licensure and certification. Exam preparation, preparation and job search and references. Seminars focus on best practices and professional preparation. Credits: 3, Hours: (3/0/0/0), Prereq: OTA-850; Arts & Sciences Elective Code: B

OTA-410 Pediatric Interventions for the OTA (2)
Provides knowledge and skills for the assessment, intervention planning and treatment for the unique needs of the pediatric population. Credits: 2, Hours: (2/0/0/0), Prereq: OTA-208, OTA-306; Arts & Sciences Elective Code: B

OTA-411 Geriatric Interventions for the OTA (1.5)
Provides knowledge and skills for assessment and intervention of the geriatric population. Credits: 1.5, Hours: (1.5/0/0/0), Prereq: OTA-208, OTA-306, OTA-309; Arts & Sciences Elective Code: B

OTA-850 Occupational Therapy Assistant Fieldwork I-A (1)
Provides opportunities to develop observational, interpersonal, and communication abilities. Includes involvement with individuals and populations with psychological and sociological occupational dysfunction. Credits: 1, Hours: (0.5/0/1.5/0), Prereq: OTA-100, OTA-207, OTA-208, and either OTA-150 or HSC-115 or HSC-117; Coreq: OTA-309; Arts & Sciences Elective Code: B; Comments: Requires all first semester courses be completed

OTA-851 Occupational Therapy Assistant Fieldwork I-B (1)
Fieldwork and seminar experiences provide opportunities to develop observational, interpersonal and communication abilities. Experience includes evaluation and intervention of physical and cognitive occupational dysfunction. Credits: 1, Hours: (1.5/0/1.5/0), Prereq: OTA-208, OTA-211, OTA-212, OTA-306; Arts & Sciences Elective Code: B

OTA-852 Occupational Therapy Assistant Fieldwork II-A (6)
A supervised Level II fieldwork experience emphasizing physical dysfunction, psychosocial or specialty practices in occupational therapy. Provides experience developing the responsibilities expected of an entry-level occupational therapy assistant. Credits: 6, Hours: (0/0/18/0), Prereq: OTA-851; Coreq: OTA-409; Arts & Sciences Elective Code: B

OTA-853 OTA Fieldwork I-C (2.5)
Fieldwork and seminar experiences provide opportunities to develop observational, interpersonal and communication skills. Credits: 2.5, Hours: (1.5/0/3/0), Prereq: OTA-850; Arts & Sciences Elective Code: B

OTA-854 Occupational Therapy Assistant Fieldwork II-B (6)
A supervised Level II fieldwork experience emphasizing physical dysfunction, psychosocial or specialty practices in occupational therapy. Provides experience developing the responsibilities expected of an entry-level occupational therapy assistant. Credits: 6, Hours: (0/0/18/0), Prereq: OTA-852; Coreq: OTA-409; Arts & Sciences Elective Code: B

PEA: Physical Education Activity

PEA-110 Badminton I (1)
Introduces the basic skills (forehand, backhand, service), strategy and rules of badminton. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

PEA-117 Bowling (1)
Develops the basic skills necessary for a beginning bowler. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

PEA-134 Golf I (1)
Develops the basic skills necessary for a beginning golfer. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

PEA-136 Karate/Self Defense (1)
Provides an introduction to karate and self-defense via basic attack and defense techniques, prearranged sparring, forms and developing an appropriate physical awareness and philosophical attitude. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

PEA-150 Powerwalking (1)
Introduces fitness walking and jogging as a lifetime endeavor to improve health and fitness. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

PEA-154 Racquetball I (1)
Introduces students to the rules, strategies and shots involved in the game. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

PEA-174 Tennis I (1)
Introduces the basic skills (forehand, backhand, service), strategy and rules of tennis. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A
PEC: Coaching Officiating

PEC-116 Athletic Development and Human Growth (2)
Introduces students to understanding some of the basic concepts of sports psychology. Consists of improving human skill, enhancing group effort and understanding the reduction of stress. Emphasizes some of the diverse topic areas important to both psychologists in general and those focusing on athletic feats. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

PEC-126 Athletic Injury Prevention (2)
Introduces conditioning programs and training methods that tend to prevent athletic injuries. Provides basic skills in injury evaluation and acquaints the student with treatment procedures while providing practical experience in taping techniques. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

PEC-140 Theory of Coaching Softball (2)
Studies the theory and practice of coaching softball. Emphasis on skill development and playing strategy with consideration given to rules and teaching pedagogy so that the game may be effectively coached. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

PEC-144 Theory of Coaching Baseball (2)
Introduces the coaching profession with specific emphasis on baseball fundamentals, strategy, organization, public relations and coaching psychology. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

PEC-150 Theory of Coaching Volleyball (2)
Introduces the theory and practice of coaching volleyball. Emphasis on volleyball fundamentals, playing strategy, organization, public relations and coaching psychology. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

PEC-160 Sports Officiating (2)
Teaches the fundamentals, techniques, rules, procedures and professional attitudes required of officials in two major sports. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

PEC-220 Techniques of Teaching Individual and Dual Sports (2)
Teaches the techniques required in a variety of sports, i.e. racquetball, tennis and golf, as well as teaching methodologies involved. Observation of physical education classes at the elementary, junior and senior high school level is an integral part of the course. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: A

PEC-221 Techniques of Teaching Team Sports (2)
Teaches the techniques required in a variety of sports, i.e. basketball, softball and volleyball, as well as teaching methodologies involved. Observation of physical education classes at the elementary, junior and senior high school level is an integral part of the course. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: A

PEH: General Physical Education & Health

PEH-111 Personal Wellness (3)
Emphasizes the importance of personal responsibility in health and wellness. Focuses on personal decisionmaking in cardiovascular fitness, muscular fitness, nutrition and weight control, as well as aging and health. Improving and maintaining quality of life through health and healthy decisions is an ongoing theme throughout this course. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PEH-155 Exercise Psychology (3)
Provides an overview of the theories and practices related to engagement in physical activity. Emphasizes motivational theories of behavior and behavior changes as they relate to exercise and health behaviors. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PEH-162 Introduction to Physical Education (3)
An overview of the foundations, philosophies, history and principles of physical education. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PEH-191 Sports Nutrition (3)
Examines nutrition's effect on health and human performance, including the study of supplementation and specific diets. Focuses on the role of nutrition in disease prevention, special populations and physical activity. Credits: 3, Hours: (3/0/0/0), Prereq: BIO-112 or BIO-151 or BIO-168 or BIO-180; Arts & Sciences Elective Code: A

PEH-210 Elementary Physical Education (3)
Introduces teaching methods and experience in elementary activities. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PEH-255 Principles of Sport Management (3)
Provides an overview of the theories and practices related to management and leadership in the fitness and sports industries. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PEH-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

PEV: Intercollegiate Physical Education

PEV-115 Varsity Baseball (1)
Designed to give credit for knowledge and skills gained through varsity sports baseball participation during an academic year. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Students may earn one credit per year for each varsity sport in which they participate. Students in multiple varsity sports may earn four credits total in Varsity sports participation courses.

PEV-121 Varsity Basketball, Men (1)
Designed to give credit for knowledge and skills gained through varsity sports basketball participation during an academic year. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Students may earn one credit per year for each varsity sport in which they participate. Students in multiple varsity sports may earn four credits total in Varsity sports participation courses.

PEV-122 Varsity Basketball, Women (1)
Designed to give credit for knowledge and skills gained through varsity sports basketball participation during an academic year. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Students may earn one credit per year for each varsity sport in which they participate. Students in multiple varsity sports may earn four credits total in Varsity sports participation courses.

PEV-140 Varsity Golf (1)
Designed to give credit for knowledge and skills gained through varsity sports golf participation during an academic year. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Students may earn one credit per year for each varsity sport in which they participate. Students in multiple varsity sports may earn four credits total in Varsity sports participation courses.

PEV-160 Varsity Softball (1)
Designed to give credit for knowledge and skills gained through Varsity sports softball participation during an academic year. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Students may earn one credit per year for each varsity sport in which they participate. Students in multiple varsity sports may earn four credits total in Varsity sports participation courses.

PEV-170 Varsity Volleyball (1)
Designed to give credit for knowledge and skills gained through Varsity sports volleyball participation during an academic year. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A;
PHI: Philosophy

PHI-101 Introduction to Philosophy (3) Investigates some of the fundamental issues in human existence - for example human nature, the nature of reality, the good life, how and what we know, the existence of God(s), justice and freedom, and free will and determinism - through readings and discussions of seminal philosophical texts in Western or non-Western traditions. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PHI-105 Introduction to Ethics (3) Investigates major issues and theories in Western or non-Western moral thought. The adequacies of ethical theories such as egoism, utilitarianism, virtue ethics, the ethics of care, and duty ethics are explored through discussions of topics such as those found in medicine, the media, the environment, social justice, education, gender relations, war, business and family life. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PHI-111 Basic Reasoning (3) Introduces both formal and informal aspects of reasoning and argument including principles of deductive reasoning, inductive reasoning, informal fallacies and critical thinking. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PHI-125 Native American Philosophies (3) Introduces some of the main philosophies of Native Americans. This course includes study of the histories and cultures of Native American groups with a focus on philosophical perspectives. This course examines metaphysics, epistemology, ethics, aesthetics, social philosophy and philosophy of nature of various Native American philosophical traditions, and those views will be contrasted with a variety of Western philosophical traditions. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PHI-126 Chinese Philosophies (3) Introduces some of the main philosophies of the Chinese tradition. This course includes study of the history and culture of China, especially the Classical Period, with a focus on philosophical perspectives. The majority of time will be spent studying classical Chinese Confucianism, Taoism, Mohism and Legalism, with some emphasis on Chinese Buddhism and Neo-Confucianism. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PHI-130 Philosophy of Human Nature (3) Investigates some important theories of human nature through discussions of such issues as the mind-body problem, the nature of freedom, social contracts, the roles of nature and nurture, the meaning of life, and happiness. Though the course will consider mainly philosophical texts, it may also include material from disciplines such as biology, literature, psychology and anthropology. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PHI-132 Philosophy of Education (3) Investigates the nature and purposes of education and the major issues and theories in the philosophy of education. The educational philosophy of thinkers from Plato and Aristotle to Hobbes and Rousseau to Whitehead, Dewey, Fraire, Hooks, Palmer and Gutman are examined by exploring issues such as democracy and education, models of teaching and learning, testing and assessment, implications of developmental theories, children's rights, equity issues, and multiculturalism. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PHI-135 Multicultural Ethics (3) Examines moral perspectives and theories from a variety of cultural contexts, such as Confucian, Hindu, Buddhist, Islamic, and African ethics. Focuses on human rights by examining ethical issues raised by Western and non-Western diversity, such as moral relativism, feminism, war, homosexuality, immigration, and race relations. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PHI-150 Social & Political Philosophy (3) Examines theories of society and the political state, such as paternalism, absolutism, theocracy, democracy, conservatism, liberalism, socialism, feminism and pluralism. Explores public values, such as justice, liberty and equality, as they apply to issues of state power, political obligation, property and class, race, ethnicity, gender/sexuality and the environment. Credits: 3, Hours: (3/0/0/0), Prereq: PHI-101, PHI-105, PHI-111 or PHI-130, Arts & Sciences Elective Code: A

PHI-160 Environmental Ethics (3) Examines contemporary environmental issues in light of traditional and contemporary ethical thought. Explores concerns such as species extinction, global climate change, ecosystemic degradation, animal rights, and unequal effects of environmental harm on humans. Ethical perspectives include duty ethics, utilitarianism, ethics of care, virtue ethics, deep ecology, ecological feminism, the land ethic, and social ecology. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PHI-924 Honors Project (1) Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

PHI-928 Independent Study (1-3) Provides readings, papers, study and/or research under the guidance of a faculty member. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

PHR: Pharmacy Tech

PHR-170 Pharmacology Technology (7.5) Provides the knowledge and skills necessary for employment as a pharmacy technician, in a retail, hospital or clinic pharmacy, under the direct supervision of a pharmacist. Includes basic understanding of medications, prescriptions and terminology, pharmaceutical calculations and techniques, record keeping, ethics and jurisprudence, as well as the role of the pharmacy technician. Emphasizes student preparation to make
informed, intelligent decisions and assisting the pharmacist with providing medication and other types of health care products to patients. Designed to prepare for the National Pharmacy Technician Certification Exam. Credits: 7.5, Hours: (6/1/3/0), Prereq: MAT-102; Arts & Sciences Elective Code: B; Comments: Consists of 96 hours of classroom work, 16 hours of hands-on lab practice and 48 hours of preceptorships in both retail and hospital pharmacies. Requires proficiency in fractions, decimals, percents, proportions, conversions and one-variable f

**PHS: Physical Science**

**PHS-151 Introduction to Astronomy (3)**
Centers around a variety of topics including the universe and the earth in space, properties of stars, nuclear energy sources, the solar system, quasars, black holes and life in the universe. Laboratories and observations are incorporated. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

**PHS-170 Physical Geology (3)**
Presents basic concepts in geology, i.e. earth materials and processes, historical geology and geological resources. Constructive and destruc-
tive forces involved in shaping the planet are discussed. Plate tectonics and sea-floor spreading serve as a unifying factor for the course. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A; Comments: Either Physical Geology (PHS-170) or Environmental Geology (PHS-175) will satisfy three hours of science core requirements. However, both cannot be counted toward meeting core. If both courses are taken, the second will count as an elective.

**PHS-171 Physical Geology Lab (1)**
Designed to be taken with PHS-170. Credits: 1, Hours: (0/2/0/0), Coreq: PHS-170; Arts & Sciences Elective Code: A

**PHS-175 Environmental Geology (3)**
Examines the effects of geological processes and geohazards on human life and activities. Course also concentrates specifically on those geological factors that are key components of modern problems of pollution, waste disposal, construction, economics, etc. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A; Comments: Either Physical Geology (PHS-170) or Environmental Geology (PHS-175) will satisfy three hours of science core requirements. However, both cannot be counted toward meeting core. If both courses are taken, the second will count as an elective.

**PHS-176 Environmental Geology Laboratory (1)**
Designed to be taken with PHS-175. Credits: 1, Hours: (0/2/0/0), Coreq: PHS-175; Arts & Sciences Elective Code: A

**PHS-180 Evolution of the Earth (3)**
Considers interdisciplinary principles, techniques and methods essential to the interpretation of the geological history of the earth. The development of plate tectonics and continental drift through geological time and the progression and evolution of life from Pre-Cambrian time to present time are also examined. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

**PHS-181 Evolution of the Earth Lab (1)**
Designed to be taken with PHS-180. Credits: 1, Hours: (0/2/0/0), Coreq: PHS-180; Arts & Sciences Elective Code: A

**PHS-928 Independent Study (1)**
Provides readings, papers, field or basic research projects for independent work in the geological sciences. Students study under the individual guidance of a staff member. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

**PHY: Physics**

**PHY-120 Introductory Physics (3)**
Provides basic work with scientific reasoning and fundamental concepts in classical and modern physics. Lab provides opportunities for measurements and application of concepts. Recommended for students planning to take College or Classical Physics, as well as all liberal arts students desiring an introductory course. Credits: 3, Hours: (2/2/0/0), Prereq: MAT-102 or MAT-707; Arts & Sciences Elective Code: A

**PHY-162 College Physics I (4)**
Emphasizes introductory physics concepts and methods of scientific reasoning. The first semester of this sequence treats the structure and properties of matter, descriptions of motion, Newton's Laws, conservation laws, rotational motion, fluid statics, fluid dynamics and thermodynamics. Designed primarily for students interested in Pre-Medical, Pre-Dental, Pre-Pharmacy, Pre-Forestry or Pre-Teacher education programs and those who seek to meet science requirements in their professional programs. Credits: 4, Hours: (3/2/0/0), Prereq: MAT-102 or MAT-708; Arts & Sciences Elective Code: A

**PHY-172 College Physics II (4)**
Continues College Physics I and includes static and current electricity, electromagnetism, wave motion, optics, and nuclear physics. Applications to the life sciences are integrated with material throughout the semester. Credits: 4, Hours: (3/2/0/0), Prereq: PHY-162; Arts & Sciences Elective Code: A

**PHY-180 Applied Physics I (2)**
Studies Mollier diagrams, psychrometric charts, thermodynamics and gas laws. Demonstrates how these properties of physics apply to the refrigeration cycle, heating, cooling, humidification and dehumidification. Credits: 2, Hours: (1/2/0/0), Prereq: MAT-230; Arts & Sciences Elective Code: B

**PHY-182 Applied Physics II (3)**
Studies mechanical power transmission, energy converters, fluid power and precision measuring instruments, measurement, measurement conversion, air and fluid flow characteristics. Credits: 3, Hours: (2/2/0/0), Prereq: PHY-180; Arts & Sciences Elective Code: B

**PHY-190 Physics I (3)**
Covers physical concepts needed to understand and practice mechanical engineering. Includes measurement and vectors, statics equilibrium, torque, uniformly accelerated motion, Newton's laws, friction, work, energy and power, and simple machines. Emphasizes problem solving and teamwork through weekly labs focused on data collection using PC-based data acquisition equipment. Credits: 3, Hours: (2/2/0/0), Prereq: MAT-745; Arts & Sciences Elective Code: B

**PHY-192 Physics II (3)**
Includes impulse/momentum, rotational motion, dynamics of rotation, fluids, properties of materials and simple harmonic motion, temperature, matter and heat energy, and introductory thermodynamics. Emphasizes problem solving and teamwork through weekly labs focused on data collection using PC-based data acquisition equipment. Credits: 3, Hours: (2/2/0/0), Prereq: PHY-190; Arts & Sciences Elective Code: B

**PHY-212 Classical Physics I (5)**
Introduces physics using calculus-level mathematics. Designed for students in Engineering, Mathematics and Physics. The first semester of this sequence covers the topics of vectors, linear and rotational kinematics, statics, dynamics, and oscillatory and wave motion. Credits: 5, Hours: (4/2/0/0), Prereq: MAT-210; Arts & Sciences Elective Code: A

**PHY-222 Classical Physics II (5)**
Continues Classical Physics I. Includes the topics of thermodynamics, static and current electricity, electromagnetism, geometric and wave optics, and a brief introduction to modern physics. Credits: 5, Hours: (4/2/0/0), Prereq: MAT-216, PHY-212; Arts & Sciences Elective Code: A

**PHY-230 Technical Physics I (3)**
Studies the technical applications of motion, force, momentum, statics, work, rotation and simple machines. Emphasizes concepts through laboratory and lecture. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

**PHY-232 Technical Physics II (3)**
Studies the technical applications of matter, fluids, heat transfer, gas properties, sound, light and modern physics. Emphasizes concepts through laboratory and lecture. Credits: 3, Hours: (2/2/0/0), Prereq: PHY-230; Arts & Sciences Elective Code: B

**PHY-924 Honors Project (1)**
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

**PHY-928 Independent Study (1)**
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1, Hours: (0/2/0/0), Prereq: PHY-120 or PHY-162 or PHY-172; Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

**PLU: Plumbing**

**PLU-130 Plumbing Theory I (6)**
Provides instruction on the basic principles of plumbing system installations. At the conclusion of the course, the student will be able to complete a variety of plumbing-related tasks such as
identify and describe safe work practices; identify and explain the materials, fittings and supports used in a plumbing installation; identify the Uniform Plumbing Code; identify the content covered in each chapter of the UPC and perform basic pipe sizing; create plan and elevation plumbing drawings and sketches; and identify and describe potable water systems, water wells and basic water treatment. Credits: 6, Hours: (4/4/0/0), Arts & Sciences Elective Code: B

PLU-132 Plumbing Theory II (8)
Provides instruction in all aspects of plumbing installations in a residential setting. Students learn to plan, design and install a plumbing drain, a waste and vent system, plumbing fixtures, water distribution systems, natural gas supply piping, venting, and chimney systems in accordance with the Uniform Plumbing Code, state and local amendments. Credits: 8, Hours: (6/4/0/0), Prereq: PLU-130; Arts & Sciences Elective Code: B

PLU-140 Plumbing Practices I (4)
Provides instruction on common pipe joining techniques and common pipe fitting procedures for pressure and drainage weight pipe and fittings. At the completion of the course, the student will be able to plan, design and install a plumbing drain, a waste and vent system, plumbing fixtures, water distribution systems, natural gas supply piping, venting, and chimney systems in accordance with the Uniform Plumbing Code, state and local amendments. Credits: 4, Hours: (0/8/0/0), Arts & Sciences Elective Code: B

PLU-142 Plumbing Practices II (4)
Provides instruction for installation of plumbing systems. At the completion of the course, the student will be able to plan, design and install a plumbing drain, a waste and vent system, plumbing fixtures, water distribution systems, natural gas supply piping, venting, and chimney systems in accordance with the Uniform Plumbing Code, state and local amendments. Credits: 4, Hours: (1/6/0/0), Prereq: PLU-140; Arts & Sciences Elective Code: B

PLU-148 Plan and Print Reading for Plumbing (2)
Provides instruction in plan and print reading for plumbing system installations. Combines plan and print reading assignments together with drawing assignments. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

PLU-150 Advanced Plan and Print Reading (2)
Provides instruction on reading, interpreting and understanding standard construction drawings. From a given construction drawing, students develop piping sketches including plan, elevation and isometric views, size drain waste and vent piping by use of the Uniform Plumbing Code and the City of Cedar Rapids amendments, prepare a materials list from a given piping sketch and download and print a variety of manufacturers’ product information sheets for fixtures, faucets, fittings and other related items. Credits: 2, Hours: (1/2/0/0), Prereq: PLU-148; Arts & Sciences Elective Code: B

PLU-160 Pipefitting for Maintenance Trades (3)
Covers plumbing and shop safety, plumbing and pipefitting theory, plan and print reading, plumbing code, basic pipe sizing, and identification and use of various piping materials. Emphasizes plumbing installation, joining methods and repair methods in accordance with Uniform Plumbing Code, along with local and state amendments, in a hands-on setting. Credits: 3, Hours: (2/2/0/0), Prereq: MAT-233; Arts & Sciences Elective Code: B

PLU-932 Internship (1-2)
Focuses on providing the student practical experience in a plumbing related work environment. Includes employer/supervisor evaluations and instructor visits/interview. Credits: 1-2, Hours: (0/0/0-4/8), Arts & Sciences Elective Code: B

PNN: Practical Nursing

PNN-104 Metrology (1)
Utilizes the ratio and proportion method for conversion between measurement systems and dosage calculation. Includes calculation of intake and output and learning the abbreviations related to administration of medications. Credits: 1, Hours: (1/0/0/0), Coreq: PNN-138, PNN-139; Arts & Sciences Elective Code: B

PNN-128 Foundations of Nursing I (4.5)
Focuses on the care of adults and older adults with health alterations that require medical interventions. Emphasizes the knowledge, competencies, and skills needed to provide safe and evidence based care for the patient with health alterations. Provides a decision-making framework, through the nursing process, to assist students in developing effective clinical judgment skills. Integrates evidenced-based practice, patient-centered care, cultural sensitivity, interdisciplinary collaboration, safety and professionalism with pathophysiology, pharmacology and nutrition. Credits: 4.5, Hours: (4.5/0/0/0), Prereq: HSC-191 or HSC-169, HSC-195 or HSC-157; Coreq: PNN-180, PNN-190, PNN-195; Arts & Sciences Elective Code: B

PNN-129 Foundations of Nursing II (3.75)
Focuses on the care of adult patients with health alterations that require medical and/or surgical intervention. Provides a decision-making framework, through the nursing process, to assist students in developing effective clinical judgment skills. Integrates pathophysiology, pharmacology and nutrition in the selected disease states, with concepts of evidenced-based practice, patient-centered care, safety and professionalism. Credits: 3.75, Hours: (3.25/1/0/0), Prereq: PNN-128, PNN-180, PNN-190, PNN-195; Coreq: PNN-436, PNN-702; Arts & Sciences Elective Code: B

PNN-138 Introduction to Nursing (2)
Provides the basic concepts related to nursing, such as adaptation, basic nutrition, communication, nursing roles, teaching/learning and health. Students learn the nursing process and issues related to nursing practice on an introductory level. Credits: 2, Hours: (2/0/0/0), Prereq: BCA-189, BIO-168, BIO-173, HSC-107, HSC-135; Coreq: PNN-104, PNN-139, PNN-722; Arts & Sciences Elective Code: B

PNN-139 Practical Nursing I (5)
Introduces the role of provider of care for the adult client with an emphasis on chronic illness, including gerontological issues. The areas of pathophysiology, nutrition and pharmacology are integrated relative to the client problems. Basic nursing skills are practiced in a supervised lab setting. Credits: 5, Hours: (4.5/1/0/0), Prereq: BCA-189, BIO-168, BIO-173, HSC-107, HSC-135; Coreq: PNN-104, PNN-138, PNN-722; Arts & Sciences Elective Code: B

PNN-180 Pharmacology I (1.5)
Provides first semester nursing students enrolled in the Associate Degree and Practical Nursing programs a foundation for pharmacological nursing. Utilizes the nursing process as the framework for presenting concepts and principles of pharmacology and drug administration. Focuses on basic pharmacological calculation concepts for safe medication administration. Credits: 1.5, Hours: (1.5/0/0/0), Prereq: HSC-191, HSC-195; Coreq: PNN-128, PNN-190, PNN-195; Arts & Sciences Elective Code: B

PNN-182 Pharmacology II (1.5)
Provides second semester nursing students enrolled in the Practical and Associate Degree Nursing programs with additional pharmacological tools. Builds on pharmacological nursing using the nursing process as the framework introduced in Pharmacology I. Discusses actions, interactions, adverse effects, nursing implications for drugs for multiple body systems and differences across the lifespan. Progresses with dosage calculation through advanced pharmacological calculations for safe medication administration. Credits: 1.5, Hours: (1.5/0/0/0), Prereq: PNN-128, PNN-180, PNN-195, PNN-701; Coreq: PNN-129, PNN-436, PNN-702; Arts & Sciences Elective Code: B

PNN-190 Health Assessment Across the Lifespan (2.5)
Introduces health history taking, physical assessment and documentation required for professional nursing practice. 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. Emphasizes the opportunity to demonstrate 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. Credits: 2.5, Hours: (2/1/0/0), Prereq: HSC-191, HSC-195, Coreq: PNN-128, PNN-180, PNN-195, PNN-701; Arts & Sciences Elective Code: B

PNN-195 Foundations of Nursing Simulation Laboratory I (1)
Provides students the opportunity to demonstrate skills and care for patients in a supervised setting. Concepts from Foundations of Nursing I will be applied in simulated patient case scenarios. Emphasizes patient safety, application of the nursing process, and development of physical and communication skills. Credits: 1, Hours: (0/2/0/0), Prereq: HSC-191, HSC-195; Coreq: PNN-128, PNN-180, PNN-195, PNN-701; Arts & Sciences Elective Code: B

PNN-436 Nursing Care of the Growing Family (3.25)
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. Focuses on health promotion, disease prevention and common alterations in health. Discusses care of the well and hospitalized child and family. Includes lab experiences with simulation and in a community-based setting. Credits: 3.25, Hours: (3/0/0/0), Prereq: PNN-128, PNN-180, PNN-190, PNN-195; Coreq: PNN-129, PNN-702; Arts & Sciences Elective Code: B

PNN-533 Practical Nursing II (6)
Provides concepts related to maternal/child health including pediatrics and obstetrics. Medical/surgical and mental health illnesses throughout the lifespan are studied. Principles of growth and development are applied. The areas of pathophysiology, pharmacology and nutrition are integrated relative to the client problems. Basic nursing skills are practiced in a supervised laboratory setting. Credits: 6, Hours: (4.5/3/0/0), Prereq: PNN-104, PNN-138, PNN-139, PNN-722; Coreq: PNN-732; Arts & Sciences Elective Code: B

PNN-701 Foundations of Nursing Clinical I (1.5)
Introduces the application of nursing care concepts in a clinical setting. Provides a decision-making framework in developing effective clinical judgment skills. Applies basic assessment and patient care concepts, including patient centered care, cultural sensitivity, informatics, safe practice and professionalism. Credits: 1.5, Hours: 0/0/4.5/0), Prereq: BIO-151, HSC-157 and HSC-169, and either BIO-168 & BIO-173 or BIO-177 & BIO-180; Arts & Sciences Elective Code: B

PNN-702 Foundations of Nursing Clinical II (1.5)
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. Credits: 1.5, Hours: (0/0/4.5/0), Prereq: PNN-128, PNN-207, PNN-701; Arts & Sciences Elective Code: B

PNN-722 Fundamentals of Nursing Clinical (2)
Focuses on the application of knowledge, psychomotor and affective skills to perform the role of provider of care. Emphasis is on making basic observations and performing nursing actions associated with activities of daily living in long-term care and medical settings. Concepts related to nutrition, pharmacology and pathophysiology are applied. Taken concurrently with Practical Nursing I, Intro to Nursing, and Metrology. Credits: 2; Hours: (0/0/6/0), Prereq: BCA-189, BIO-168, BIO-173, HSC-107, HSC-135; Coreq: PNN-138; Arts & Sciences Elective Code: B

PNN-732 Practical Nursing Clinical II (3)
Focuses on the application of knowledge, psychomotor and affective skills to perform the role of provider of care through observation and implementation of nursing care in various settings. Concepts related to nutrition, pharmacology and pathophysiology are applied. Credits: 3, Hours: (0/0/3/0), Prereq: PNN-104, PNN-138, PNN-139, PNN-722; Coreq: PNN-533; Arts & Sciences Elective Code: B

PNN-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an Honors Project Learning Contract. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

POL: Political Science

POL-110 Introduction to Political Science (3)
Studies selected concepts, processes, behaviors, institutions and ideologies central to the study of politics. Introduces related topics such as political culture, terrorism and doctrines, including authoritarianism, conservatism, liberalism and totalitarianism, among others. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

POL-121 International Relations (3)
Analyzes governments in the more developed countries (MDCs) and in the less developed countries (LDCs) and the interaction of these governments in their political, economic and security dimensions. Also analyzes the sources of policy and their theoretical foundations. Problems are examined through current world concerns. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

POL-125 Comparative Government and Politics (3)
Studies the systems of government of several countries taking into consideration citizen participation and policy-making processes. Includes basic theories, methods and concepts of comparative study. Examines similarities and differences of political structures including political parties and executive and legislative institutions. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

POL-150 Introduction to U. S. Foreign Policy (3)
Studies institutions and processes which structure and shape United States foreign policymaking. Surveys historical, military, diplomatic and economic interactions with countries and international governmental and non-governmental organizations. Examines issues such as terrorism, trade, human rights, espionage, intelligence and homeland security. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

POL-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of an honors faculty member. Requires completion of an Honors Project Learning Contract. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

POL-928 Independent Study (1-3)
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1-3, Hours: (1-3/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

PRL: Paralegal

PRL-101 Paralegal Studies Orientation (3)
Provides an overview of the American legal system and the practice of law. Introduces students to legal processes; court systems; courses of law; basic legal research methods; and to the nature, ethics and regulation of legal professions. Introduces the substantive law and skills areas students will encounter in subsequent legal assistant courses. Examines the relationship between different kinds of legal systems and between social science and law. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-101; Arts & Sciences Elective Code: A

PRL-105 Legal Ethics (1)
Studies the canons of professional ethics and disciplinary rules applicable to lawyers and legal assistants, together with applicable disciplinary proceedings and court decisions. Credits: 1, Hours: (1/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-110 Fundamentals of Legal Research and Writing (2)
Provides instruction in law library and computer technology resources needed for law applicable to solving legal problems, including research strategies, analysis and application of law, and communicating research results orally and in written legal memoranda. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-111 Advanced Legal Research and Writing (2)
Provides instruction in using computer-based legal research methods to address complex legal research problems and in utilizing research results in appellate briefs and other advocacy legal documents. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101, PRL-110; Arts & Sciences Elective Code: A

PRL-120 Investigation for Paralegals (2)
Provides an overview of the fact-gathering processes for paralegals, including principles and techniques of investigation, sources of public and private information, methods for preserving information, and analyzing the probateness, sufficiency, and admissibility of facts for trial. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101, PRL-110; Arts & Sciences Elective Code: A

PRL-130 Torts (2)
Provides instruction on the principles of tort law, emphasizing skills in reading and interpreting primary and secondary sources of law. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-136 Bankruptcy Law (2)
Teaches the Bankruptcy Act, applicable rules and selected case law and their application to the preparation of a bankruptcy filing. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL: Paralegal

PRL-101 Paralegal Studies Orientation (3)
Provides an overview of the American legal system and the practice of law. Introduces students to legal processes; court systems; courses of law; basic legal research methods; and to the nature, ethics and regulation of legal professions. Introduces the substantive law and skills areas students will encounter in subsequent legal assistant courses. Examines the relationship between different kinds of legal systems and between social science and law. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-101; Arts & Sciences Elective Code: A

PRL-105 Legal Ethics (1)
Studies the canons of professional ethics and disciplinary rules applicable to lawyers and legal assistants, together with applicable disciplinary proceedings and court decisions. Credits: 1, Hours: (1/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-110 Fundamentals of Legal Research and Writing (2)
Provides instruction in law library and computer technology resources needed for law applicable to solving legal problems, including research strategies, analysis and application of law, and communicating research results orally and in written legal memoranda. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-111 Advanced Legal Research and Writing (2)
Provides instruction in using computer-based legal research methods to address complex legal research problems and in utilizing research results in appellate briefs and other advocacy legal documents. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101, PRL-110; Arts & Sciences Elective Code: A

PRL-120 Investigation for Paralegals (2)
Provides an overview of the fact-gathering process for paralegals, including principles and techniques of investigation, sources of public and private information, methods for preserving information, and analyzing the probateness, sufficiency, and admissibility of facts for trial. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101, PRL-110; Arts & Sciences Elective Code: A

PRL-130 Torts (2)
Provides instruction on the principles of tort law, emphasizing skills in reading and interpreting primary and secondary sources of law. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-136 Bankruptcy Law (2)
Teaches the Bankruptcy Act, applicable rules and selected case law and their application to the preparation of a bankruptcy filing. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A
PRL-140 Business Organization Law (2)
Explores and explains the legal characteristics of proprietorships, corporations, partnerships and other business vehicles, and teaches drafting of articles of incorporation, by-laws, partnership agreements and related business documents. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-145 Secured Transactions (2)
Covers secured transactions in the UCC and introduces negotiable instruments. Presents the Article rules and enables students to understand situations in which security interests are used and enforced. Students use the Secretary of State Web site. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-150 Real Estate Law (2)
Studies the law of real property and surveys the more common types of real estate transactions and conveyances such as deeds, contracts, leases, deeds of trust and titles recording systems and public documents. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-160 Family Law (2)
Provides a study of laws of marriage, divorce, child custody and support, separations, annulments, paternity, adoptions and mental health commitment procedures, and tax aspects of divorce and separation. The emphasis of the course is on the procedural and practical aspects of the laws. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-165 Estate Planning/Administration (2)
Provides a working knowledge of lifetime and testamentary estate planning enabling the student to draft trusts and wills, and to compute tax consequences. Provides understanding of the process of settling estates both within and outside probate court. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-175 Contracts (2)
Provides instruction in the principles of contract law, emphasizing skills in reading and interpreting primary and secondary sources and practicing preparation of contracts. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-176 Civil Litigation (3)
Teaches the rules, processes and paralegal skills for preparing cases for civil trials, including the preparation of complaints, discovery and motions. Credits: 3, Hours: (3/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-180 Employment Law Topics (2)
Surveys selected legal aspects of the employer-employee relationship, such as federal labor laws, civil rights laws, Americans With Disabilities Act, privacy and harassment laws, and human resource management issues. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-181 Workers' Compensation (2)
Teaches the law and procedures, and the paralegal's role involved in representation of claimants for workers' compensation benefits. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

PRL-189 Criminal Law and Procedure for the Paralegal (2)
Provides an overview of the basic principles of criminal law, as derived from common law, statutory and Constitutional principles, as well as basic criminal procedure in the United States. Contains additional instruction on the Iowa Rules of Criminal Procedure, highlighting differences between Iowa and other jurisdictions. Explores the rules, processes and skills necessary to prepare criminal cases for trial. Credits: 2, Hours: (2/0/0/0), Prereq: PRL-101; Arts & Sciences Elective Code: A

PRL-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

PRL-928 Independent Study (1)
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

PRL-932 Internship (3)
Provides an opportunity to use and refine paralegal skills in a work setting with the guidance of legal professionals. Students attend monthly seminars throughout the internship semester to share and gain perspective on their experiences. Credits: 3, Hours: (0/0/9/0), Arts & Sciences Elective Code: A; Comments: Completion of all law courses; permission of instructor.

PSY: Psychology

PSY-111 Introduction to Psychology (3)
Introduces the scientific study of mental processes and behavior with emphasis on the nervous system, learning and memory, cognition, sensation and perception, motivation and emotion, personality, intelligence, stress, psychological disorders and therapy, and social influence. Stresses roles of both theory and empirical evidence in describing, explaining and predicting behavior. Encourages critical thinking about research methods and ethics. Credits: 3, Hours: (3/0/0/0), Prereq: RDG-130 or Compass Reading 82 or ACT Reading 19; Arts & Sciences Elective Code: A

PSY-121 Developmental Psychology (3)
Introduces physical, cognitive and psychosocial development from a lifespan perspective covering conception until death. Provides an introduction to major theories and classic and contemporary research, and examines normative development as impacted by genes, maturation, experience, cohort, gender, race, social class and culture. Discusses topics including development of cognitive, motor, language, social and emotional development; infancy; childhood; adolescence; early, middle and late adulthood; and death and bereavement. Credits: 3, Hours: (3/0/0/0), Prereq: PSY-111; Arts & Sciences Elective Code: A

PSY-241 Abnormal Psychology (3)
Describes emotional, cognitive and behavioral disorders using the current edition of the DSM for classification and diagnosis of disorders. Explores assessment, causes and treatments of disorders from a biopsychosocial perspective. Reviews historical and current theoretical perspectives of abnormality, research methods, and legal and ethical issues. Credits: 3, Hours: (3/0/0/0), Prereq: PSY-111; Arts & Sciences Elective Code: A

PSY-251 Social Psychology (3)
Explores how an individual's thinking, feelings and behavior are affected by others. Covers research methods, ethics, and classic as well as contemporary research on topics including social beliefs and judgments, self and person perception, attitude formation and change, prejudice, aggression and conflict, helping and prosocial behavior, interpersonal attraction, gender-related behavior, conformity and deviation, persuasion, and group influence. Credits: 3, Hours: (3/0/0/0), Prereq: PSY-111; Arts & Sciences Elective Code: A

PSY-261 Human Sexuality (3)
Expands upon psychological, cultural, biological, legal and political aspects of human sexuality. Examines research and multiple data sources. Explores topics of media, gender and sexual orientation, sexual anatomy and response, sexual expression and variation, birth control, conception, pregnancy and childbirth, sexual dysfunction and therapy, health and illness, sexually transmitted infections and treatment, sexual coercion, pornography, and prostitution. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PSY-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

PTA: Physical Therapist Assistant

PTA-101 Introduction to PTA (2)
Overviews the physical therapy profession, the education and eventual role of the PTA, and the national organization APTA. Explores emotional reactions to disability and considers communication strategies for patients, family members and other health care workers. Discusses the patient care process and treatment of diverse populations. Includes concepts of self and peer assessment, and goal setting. Students attend three mandatory face-to-face sessions with the remainder of the course material covered online. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

PTA-110 Fundamentals for PTA (3)
Introduces patient care activities for the PTA, including positioning and draping, posture and body mechanics. Covers pre-ambulation activities, including exercise and functional activities, fitting of assistive devices, gait training, and negotiation of architectural barriers. Includes a 32-hour off-campus clinical experience. Credits:
Course Descriptions

3, Hours: (2/2/0/0), Prereq: Minimum C grade in both PTA-120 & PTA-140; Coreq: BIO-168; Arts & Sciences Elective Code: B

PTA-120 Kinesiology (3)
Provides a basic understanding of normal human body movement as related to skeletal, articular, neurological and muscular systems. Addresses movement of arm, levers, torque, center of gravity and base of support as they relate to balance. Covers anatomical palpation, normal posture and gait. Credits: 3, Hours: (2/2/0/0), Coreq: BIO-168, PTA-192; Arts & Sciences Elective Code: B

PTA-140 Functional Motor Development (3)
Presents normal human development as it relates to movement and functional independence. Covers lifetime development of each body system, and the functional implications of changes in these body systems. Discusses the psychosocial issues typical at each stage of the lifespan and useful teaching strategies for physical therapy interventions. Includes a 15-hour off-campus service learning experience. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

PTA-150 Pathophysiology (3)
Covers clinical disorders and diseases commonly treated in physical therapy. Covers pathology, etiology, diagnosis, signs, symptoms and prognosis. Credits: 3, Hours: (3/0/0/0), Prereq: Minimum C grade in PTA-120; Coreq: BIO-173; Arts & Sciences Elective Code: B

PTA-160 PTA Procedures I (3)
Introduces assessment skills and exercise procedures performed by the PTA. Covers theory and application of goniometry, manual muscle testing, palpation and various other assessment techniques with a focus on the upper extremities. Explores basic exercise procedures as they relate to the results of the assessment procedures. Includes laboratory demonstration and practice of each skill. Credits: 3, Hours: (2/2/0/0), Prereq: BIO-168, PTA-120, PTA-150, PTA-192, PTA-193; Arts & Sciences Elective Code: B

PTA-161 PTA Procedures II (3)
Introduces assessment skills and exercise procedures performed by the PTA. Covers theory and application of goniometry, manual muscle testing, palpation and various other assessment techniques with focus on the lower extremities. Explores basic exercise procedures as they relate to the results of the assessment procedures. Includes laboratory demonstration and practice of each skill. Credits: 3, Hours: (2/2/0/0), Prereq: BIO-168, PTA-120, PTA-150, PTA-192, PTA-193; Arts & Sciences Elective Code: B

PTA-192 PTA Modalities I (2)
Prepares the student to use modalities for patient/client management. Presents the science of modalities along with mechanisms of action, physiological processes, indications and contraindications for each modality. Covers patient preparation and assessment, the heating process, pain assessment, superficial and deep heat, cold, intermittent compression pumps/edema management strategies, therapeutic massage, and spinal traction. Includes physiological mechanisms, indications, contraindications, precautions as well as application techniques for each modality. Credits: 2, Hours: (1/2/0/0), Coreq: BIO-168, PTA-120; Arts & Sciences Elective Code: B

PTA-193 PTA Modalities II (3)
Continues study of modalities used for patient/client management. Discusses mechanisms of pain management and incorporates them into patient interventions. Covers ultrasound, diathermy, biofeedback, electrical stimulation (pain, edema, wound care and muscle dysfunction), wound care techniques and hydrotherapy. Includes physiological mechanisms, indications, contraindications, precautions as well as application techniques for each modality. Credits: 3, Hours: (2/2/0/0), Prereq: Minimum C grade in PTA-192; Coreq: BIO-173; Arts & Sciences Elective Code: B

PTA-210 Orthopedics (3)
Provides a review of normal skeletal anatomy. Discusses body joints as they relate to stability, appropriate motion and reasons for dysfunctions. Presents treatment regime options for basic orthopedic surgeries, injuries and dysfunction. Credits: 3, Hours: (2/2/0/0), Prereq: PTA-301; Arts & Sciences Elective Code: B

PTA-230 Rehab for Medical Conditions (3)
Provides application of patient management skills to a variety of general medical conditions. Covers therapeutic exercise directed to specific impairments, as well as special considerations for a variety of diagnoses. Addresses critical problem solving, patient progression and patient and family education. Credits: 3, Hours: (2/2/0/0), Prereq: PTA-301; Arts & Sciences Elective Code: B

PTA-240 Neurology (3)
Provides an overview of the human nervous system in regards to anatomy, neurodevelopment, and function. Discusses clinical neuropathologies, therapeutic analysis and program planning. Includes pediatric considerations as well as treatment of adult neurological diagnoses. Covers exercise theories including PNF, NDT, Brunnstrom, and motor learning. Credits: 3, Hours: (2/2/0/0), Prereq: PTA-301; Arts & Sciences Elective Code: B

PTA-250 PTA Career Essentials (2)
Discusses basic career principles, including levels of authority and responsibility, supervision, performance appraisals, policies and procedures and ethical and legal guidelines. Includes a review of rules and regulations governing PTA practice in Iowa, and the licensure application and preparation process. Discusses the process of quality assurance, chart audits, reviews of reimbursement systems and their impact on health care delivery. Covers resume writing, interviewing and employment skills, as well as self and peer assessment as a tool for career development and lifelong learning. Students attend two mandatory face-to-face sessions with the remainder of the course material covered online. Credits: 2, Hours: (2/0/0/0), Prereq: PTA-210, PTA-230, PTA-240, PTA-301, PTA-302; Coreq: PTA-431; Arts & Sciences Elective Code: B; Comments: Involves a component of independent study as well as classroom activities

PTA-301 PTA Clinic I (2)
Involves application of new concepts and skills learned in previous PTA course work to hands-on patient care in selected clinical settings. Includes classroom component reviewing concepts of supervision requirements, ethics and legal guidelines, reimbursement and communication as it relates to clinical practice. Credits: 2, Hours: (.5/0/4.5/0), Prereq: BIO-168, BIO-173, PTA-110, PTA-120; PTA-192, PTA-193; Coreq: PTA-160, PTA-161; Arts & Sciences Elective Code: B

PTA-302 PTA Clinic II (2)
Involves application of new concepts and skills learned in previous PTA coursework to direct patient care in selected clinical settings. Includes classroom component reviewing concepts of supervision requirements, ethics and legal guidelines, reimbursement and communication as it relates to clinical practice. Credits: 2; Hours: (.5/0/4.5/0), Prereq: PTA-301; Arts & Sciences Elective Code: B

PTA-431 PTA Clinic III (12)
Applies and develops proficiency in all previous concepts and skills through direct patient care in a full time clinical environment. Credits: 12, Hours: (0/0/36/0), Prereq: PTA-210, PTA-230, PTA-240, PTA-301, PTA-302; Coreq: PTA-250; Arts & Sciences Elective Code: B

PWL: Powerline

PWL-300 Smart Grid Design and Technology (1)
Provides a comprehensive understanding of the emerging Smart Grid "Intelligent Power System" integration to wind, sun and steam power generation. Covers energy storage, advanced power electronics at the T&D distribution levels, networked control systems, automation, system optimization and real-time control. Credits: 1, Hours: (5/1/0/0), Arts & Sciences Elective Code: B

PWL-325 Electrical Distribution Systems (1)
Encourages understanding and application of overhead and underground three-phase electrical distribution system principles, applications and components. Covers selection of proper conductors, cables and transformers and the importance of distribution system protection, insulation, coordination and overvoltage protection. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

PWL-330 Power Cable Materials and Installation (1)
Covers the design, selection and installation of conductors, insulators, shields and jackets. Emphasizes splicing and terminating standards and practices. Studies cable condition assessment, reliability, ampacity and surge protection. Credits: 1, Hours: (5/1/0/0), Arts & Sciences Elective Code: B

RCP: Respiratory Therapy

RCP-120 Cardiopulmonary Assessment (1)
Provides the student with the necessary competencies to conduct a general head-to-toe integumentary assessment as well as a more detailed cardiovascular and chest/pulmonary assess-
ment, enabling the student to identify and document any abnormalities. Credits: 1; Hours: (0.5/1/0/0), Coreq: BIO-161; Arts & Sciences Elective Code: B

RCP-210 Introduction to Respiratory Care (2.5)
Provides the theory, equipment operation and application with laboratory exercises in airway management techniques, humidity therapy and bland aerosol therapy. Credits: 2.5, Hours: (1.5/2/0/0), Prereq: minimum grade C- in both BIO-186 and CHM-110; Arts & Sciences Elective Code: B

RCP-220 Respiratory Care I (3)
Provides the theory, equipment operation and application with laboratory exercises in oxygen and other gas therapy; and aerosol drug therapy, with an introduction to respiratory pharmacology and airway clearance modalities. Credits: 3, Hours: (2/2/0/0), Prereq: HSC-107, HSC-210, RCP-210, minimum grade C- in HSC-115; Arts & Sciences Elective Code: B

RCP-300 Respiratory Physiology (4)
Provides the essential concepts of cardiopulmonary anatomy and physiology with an emphasis on pulmonary homeostasis. Credits: 4, Hours: (4/0/0/0), Prereq: BIO-161 or BIO-168/173 or BIO-177/180, and earn minimum grade C- in HSC-115; Arts & Sciences Elective Code: B

RCP-370 Respiratory Pathology I (2)
Provides an introduction to the study of disease with an emphasis on terminology and basic disease processes. Examines common infectious diseases, acute and chronic respiratory diseases, and cardiovascular disorders. Concentrates on etiology, pathophysiology, signs and symptoms. Provides an overview of respiratory care for the surgical patient, as well as specific management of traumatic chest injury and head trauma. Credits: 2; Hours: (2/0/0/0), Prereq: BIO-186, RCP-300; Arts & Sciences Elective Code: B

RCP-380 Respiratory Pathology II (2.5)
Offers an in-depth study of pulmonary disorders relating the respiratory therapist’s role in diagnosis, treatment, pharmacologic management and support; provides practice in gathering appropriate information and making prompt and correct patient care decisions. Credits: 2.5, Hours: (2.5/0/0/0), Prereq: minimum grade C- in RCP-370; Arts & Sciences Elective Code: B

RCP-420 Pulmonary Function Testing (2)
Provides theory and operation of equipment in pulmonary function testing with interpretation of test results. Laboratory exercises include gathering data from bedside spirometry, measuring weaning parameters, as well as standard pulmonary function laboratory testing. Credits: 2; Hours: (1.1/1.5/0), Prereq: RCP-220, RCP-300; Arts & Sciences Elective Code: B

RCP-470 Cardiac Monitoring (1.5)
Surveys the theory and application of specialized diagnostic procedures, equipment and monitoring techniques in cardiac medicine. Includes ECG and monitoring leads, basic interpretation and dysrhythmia recognition, thermodilution cardiac output and oxymetric-mixed venous oxygen measurements, pulmonary artery catheters, hemodynamics and clinical application. Credits: 1.5, Hours: (1.5/0/0), Prereq: RCP-300, minimum C-grade in RCP-220, and either BIO-161 or BIO-168/173 or BIO-177/180; Arts & Sciences Elective Code: B

RCP-480 Advanced Cardiac Care (2.5)
Provides theory and laboratory practice in managing specific life-threatening cardiac dysrhythmias resulting from myocardial infarction. Includes review of basic life support, use of mechanical aids to establish an airway and maintain ventilation, ECG monitoring and recognition of life-threatening dysrhythmias, cardiac defibrillation, establishing an intravenous drug access, and initiating appropriate cardiac drug therapy. Credits: 2.5, Hours: (2/1/0/0), Prereq: RCP-735, and minimum grade C- in RCP-470; Arts & Sciences Elective Code: B

RCP-510 Respiratory Care Operation II (6)
Explores the theory, equipment operation and application with laboratory exercises in adult and pediatric/neonatal mechanical ventilation, IPPB and arterial blood gas analysis. Examines the effect of mechanical ventilation on acid base balance. Laboratory emphasis on the operation and application of adult and pediatric/neonatal ventilators. Credits: 6; Hours: (4/4/0/0), Prereq: CHM-110, RCP-220; Arts & Sciences Elective Code: B

RCP-610 Perinatology (2.5)
Explores fetal growth and development, assessment of the high-risk newborn and respiratory care of the perinatal/pediatric patient. Reviews specific medical/surgical pathology in the newborn and pediatric patient. Credits: 2.5, Hours: (2/1/0/0), Prereq: minimum grade C- in both RCP-370 and RCP-510; Arts & Sciences Elective Code: B

RCP-730 Respiratory Care Clinic I (2.5)
Provides students with clinical practice in order to demonstrate proficiency in physical assessment, oxygen therapy, airway care and IPPB skills. Students observe and practice mechanical ventilation and arterial blood gas analysis skills. Credits: 2.5, Hours: (2/1/0/0), Prereq: RCP-210, Coreq: RCP-220; Arts & Sciences Elective Code: B

RCP-735 Respiratory Care Clinic II (6.5)
Provides students an opportunity to improve proficiency in RC Clinic I skills and demonstrate proficiency in ventilation and arterial blood gas analysis. Provides an opportunity to practice pediatric respiratory care, hemodynamic monitoring and demonstrate proficiency in pulmonary function testing. Students observe diagnostic techniques in ECG, cardiac catheterization lab and bronchoscopy lab. Credits: 6.5, Hours: (0/1/18/0), Prereq: RCP-510, RCP-730; Arts & Sciences Elective Code: B

RCP-740 Respiratory Care Clinic III (6.5)
Provides students an opportunity to maintain proficiency in RC Clinics I and II skills, demonstrate proficiency in pediatric/perinatal respiratory care, practice clinical education techniques and observe management skills. Credits: 6.5, Hours: (0/1/18/0), Prereq: RCP-735; Arts & Sciences Elective Code: B

RCP-850 Respiratory Care III (2.5)
Surveys the theory and application of specialized diagnostic procedures, equipment and monitoring techniques in pulmonary medicine and critical care. Includes bronchoscopy, oximetry, capnography and transthecutaneous monitoring. Explores the elements of pulmonary rehabilitation with laboratory exercises in breathing retraining. Examines the theory and operation of pleural drainage systems. Credits: 2.5, Hours: (2/1/0/0), Prereq: RCP-510; Arts & Sciences Elective Code: B

RCP-890 Respiratory Care Applications (2)
Culminates the learning activities of the previous five semesters of study in respiratory care. Integrates the theory and application of respiratory care to focus on case management, clinical problem solving and clinical simulation. Case discussions will selectively cover the spectrum of cardiopulmonary disorders for both pediatric and adult patients. Credits: 2; Hours: (1.2/0/0), Prereq: RCP-380, RCP-610, RCP-735; Arts & Sciences Elective Code: B; Comments: Must pass RCP-735 with a C- or better to enroll in RCP-890

RDG: Reading

RDG-095 College Reading (3)
Introduces college-level reading skills, including identifying and analyzing factual statements, topics, and supporting details; recognizing, using, developing and outlining relationships; and learning critical reading strategies. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: D

RDG-130 Effective Reading Strategies (3)
Provides instruction in study skills and reading improvement for college readers. Develops flexibility in students’ reading rates and strategies for improving comprehension of standard college texts. Provides practice with library, test taking, time management and vocabulary skills. Recommended to be taken in conjunction with another college-level course. Also recommend: a COMPASS score 71 or above or ACT score of 16 or above. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: D

REL: Religion

REL-101 Survey of World Religions (3)
Introduces the study of religions and religious phenomena through an examination of several historical and contemporary religions from around the world. Includes a study of some of the following: American Indian traditions, Hinduism, Buddhism, Judaism, Christianity, Islam, Shintoism, ancient and contemporary feminist spirituality, gnosticism, shamanism, Confucianism and Taoism. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

REL-120 Judaism, Christianity and Islam (3)
Introduces the beliefs, values, and practices of Judaism, Christianity and Islam. Both historical and contemporary phenomena are used to develop an understanding of the diversity and complexity of the religious dimension of human life. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: A

REL-125 Introduction to Islam (3)
Introduces the beliefs, values and practices of Islam. Both historical and contemporary phenomena are used to develop an understanding of the diversity and complexity of the Muslim religion. Attention is given to critical issues
within Islam in the modern world. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SCI-120 Forensic Science (3)
Explores forensic science and its impact on science, society and the criminal justice system. Focuses on basic concepts in selected areas of chemistry, biochemistry, cell and molecular biology, and anatomy and physiology. This course is designed to educate liberal arts students about basic sciences, and the realities and limitations of scientific methods when applied specifically to criminal investigation. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SCI-122 Forensic Science Laboratory (1)
Focuses on laboratory procedures used in a wide variety of forensic disciplines. Includes the scientific method, identification of body fluids, blood spatter analysis and forensic entomology. Explores the theory of forensic methods along with its limitations. Credits: 1, Hours: (0/2/0/0), Coreq: SCI-120; Arts & Sciences Elective Code: A

SCI: Science

REL-130 Introduction to Religions of the East (3)
Introduces some of the religious traditions and systems of belief found in the East. Both historical and contemporary phenomena are used to develop an understanding of the diversity and complexity of the religious dimension of human life. Various forms of some of the following religions are included: Buddhism, Shintoism, Hinduism, Taoism, Jainism and Confucianism. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

REL-140 Religion in the United States (3)
A historical survey of religion in the United States from the colonial period to the present, with emphasis upon the increasing diversity of American religions. Religious developments will be related to the broader cultural aspects of the American experience. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

REL-145 Introduction to Christianity (3)
Introduces the beliefs, values and practices of Christianity. Examines both historical and contemporary phenomena to develop an understanding of the diversity and complexity of the Christian tradition. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

REL-160 Religions of China (3)
Studies some of the main religious systems and traditions of China, both pre-modern and modern. The general rubric used will divide Chinese religious systems into four main categories: Confucian, Daoist, Buddhist and Popular, although some attention will be given to studying the reality that Chinese religion as practiced tends to cross over such artificial boundaries. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

REL-165 Japanese Religions (3)
Covers some of the main religious systems and traditions of Japan, both pre-modern and modern. The general rubric used will divide Japanese religious systems into five main categories: Shinto, Daoist, Buddhist, Confucian and New/Popular, although attention will be given to studying the reality that Japanese religion as practiced tends to cross over such artificial boundaries. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

REL-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires completion of an honors project contract. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

REL-928 Independent Study (1-3)
Provides readings, papers, study and research under the guidance of a faculty member. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

SDV: Student Development

SDV-022 Study Strategies (2)
Provides instruction and practice in time scheduling and management, effective use of textbooks, effective study skills, note taking, test-taking strategies and listening skills. Must be enrolled in the College Prep Block. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: D

SDV-027 College Preparation: Study Skills (2)
Introduces college-level study skills. Focuses on practical application of study skills necessary for college success including organization skills, effective goal setting, determining the main idea, and developing effective and efficient study skills. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: D

SDV-052 Supported Education (1-3)
Provides academic support, accommodations and strategies needed to successfully complete the Kirkwood course of study. Develops an individualized education plan and accommodation plans designed to develop effective study skills and self-advocacy skills. Monitors students' progress in Kirkwood courses. Format is primarily individualized instruction. Credits: 1-3, Hours: (0/2-6/0), Arts & Sciences Elective Code: D

SDV-057 Teacher Proficiency Test Preparation (1)
Provides individualized instruction to prepare student to pass the Teacher Preparation Proficiency test. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: D

SDV-077 Supported Education - VITAL (3)
Provides academic support, accommodations and strategies VITAL students need to successfully complete the Kirkwood course of study. Develops an individualized education plan and accommodations plan designed to develop effective study skills and self-advocacy skills. Monitors students' progress in Kirkwood courses. Format is primarily individualized instruction. Credits: 3, Hours: (0/6/0/0), Arts & Sciences Elective Code: D; Comments: Concurrent enrollment in VITAL.

SDV-080 Supported Education: Transition (1)
Provides instruction and hands-on skill development to students enrolled in the Prairie Wood Transition Program. Consists of academic classroom instruction, life skills, accommodations and strategies for success in the Transition Program, including campus and community experiences. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: D

SDV-082 College Prep Career Exploration (2)
Teaches students the career exploration process by evaluating their unique combination of personal characteristics, values, needs and goals on the journey to creating an effective and meaningful career and life plan. Credits: 2, Hours: (2/0/0/0); Coreq: ENG 059, RDG 200; Arts & Sciences Elective Code: D; Comments: Part of the 12-credit College Prep block offered Fall semester. Approval of Dean, Learning Services, required.

SDV-084 Academic Prep I (1)
Provides individualized computer-assisted instruction in math, reading, writing and critical-thinking skills to academically prepare students for future course work in their major. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: D

SDV-086 Academic Prep II (1)
Provides individualized computer-assisted instruction in math, reading, writing and critical-thinking skills to academically prepare students for future course work in their major. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: D

SDV-093 College Survival Skills (1)
Transitions first-year, first-semester Student Support Service students into the postsecondary environment via an Internet forum. Students learn about available support services, appropriate social and study skills, and how to use the Internet. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: D

SDV-096 College Prep Writing II (3)
Provides students with basic skill writing instruction in a traditional class setting. This second-semester College Prep block writing course continues the basic writing instruction provided in the first semester. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: D

SDV-098 College Prep Math (3)
Provides students with basic math skills and instruction in a traditional class setting. This first-semester College Prep block math course provides basic math skills in the areas of fractions, decimals, percent, operation and whole number operations. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: D

SDV-099 College Prep Math II (3)
Provides students with math skills and instruction in a traditional class setting. This second-semester College Prep block math course provides instruction in the area of order of operations, formulas, equations, ratio and proportion. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: D
SDV-101 How To Be Successful In College (3)
Provides classroom and group instruction on skills needed to be a successful college student. The course includes academic skill building and covers topics such as student responsibility, how to read a syllabus, policies and procedures of the college, and effective goal setting to achieve student success. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SDV-102 How College Works (1)
Explores students' individual strengths, life and vocational goals, as they identify a college program or major. Emphasizes using self-assessments to identify appropriate career areas, understanding the differences between high school and college expectations, taking and using placement tests for college admission, and managing personal finances to afford a college education. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

SDV-109 College 101 (3)
Directs students' attention to the college academic culture and connects them to resources that will aid in their success. Focuses on developing academic success skills. Includes study and classroom performance strategies, personal development, academic and career planning, and participation in the college culture. This course is designed for incoming freshmen. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SDV-119 Information Literacy (1)
Introduces students to the library research process. Students will learn to systematically and efficiently locate, evaluate and use information through hands-on practice. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

SDV-121 College Prep Seminar (3)
Provides continued instruction on time scheduling and management, organizational skills and effective college-level study skills. Focuses on career development, career choices and academic planning, as well as the use of assistive technology to reach goals. Credits: 3, Hours: (3/0/0/0), Prereq: BCA-080, ENG-013, MAT-700, RDG-200, SDV-027; Arts & Sciences Elective Code: B

SDV-135 Job Seeking Skills (1)
Assists students who will be seeking an internship, or part-time or full-time employment. The areas that will be covered include how to research the job market and companies, writing resumes and cover letters, improving job interviewing techniques, and how to utilize Kirkwood's job search assistance services. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

SDV-170 Career Decision Making (3)
Provides an understanding of the career development process, and assists students in making satisfactory career choices. Includes self-assessment, career information research, decision making and job search strategies. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SDV-175 Tools for Life Seminar (3)
Furthers the understanding of the interrelationships among individuals, the college, the family, work and society. Develops leadership, study skills, communication skills, decision-making abilities, especially in education and career areas. Students consider learning as a process. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SDV-178 Stress Management (1)
Studies causes and symptoms of stress (positive and negative), stress management, stress reduction, self-talk and self-esteem. Credits: 1, Hours: (0.5/1/0/0), Arts & Sciences Elective Code: A

SDV-928 Independent Study (1-3)
Broadens students' knowledge of personal skills, talents, interests and strengths. Focuses on researching career information and individually exploring a variety of career options, with assistance from the instructor. Students develop action plans for the future. Credits: 1-3, Hours: (1-3/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor

SOC: Sociology

SOC-110 Introduction to Sociology (3)
Surveys the basic principles, concepts, research strategies and empirical findings representative of the field today. The course examines the range of sociological thought, identifies areas of specialization within the discipline and establishes a basis for further study in the field. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SOC-115 Social Problems (3)
Examines social problems as consequences of given types of social organization. Students examine research and theory to build an understanding of the definition, existence and persistence of social problems, as well as collective efforts to resolve those problems. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SOC-120 Marriage and Family (3)
Explores contemporary family institutions by studying the family as an ideological, demographic, historic, economic and legal entity. The marital life cycle is documented through current research. Marital dissolution and remarriage are also examined. The course emphasizes the continuities and discontinuities in the family experience of individuals and the society as a whole. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SOC-200 Minority Group Relations (3)
Examines majority-minority group relations utilizing sociological theory and research. Addresses diverse populations with special attention placed on race, ethnicity, gender and other disadvantaged categories in American society. Students will apply basic concepts central to inter-group relations and their implications. Students will consider the consequences of inequality. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SOC-265 Introduction to Lesbian, Gay, Bisexual & Transgender Studies (3)
Introduces students to Lesbian, Gay, Bisexual and Transgender (LGBT) studies. Explores the impact of social, cultural, historical and political factors on LGBT individuals and communities. Studies the social construction of LGBT persons and cultures across time and place, theoretical debates regarding sexual orientation, identity formation, LGBT people of color, gender roles and gender identity, homophobia, and HIV/AIDS. Includes contemporary LGBT issues in families, education, religion, media and the law. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SOC-384 Sociology of the Environment (3)
Explores the application of the sociological perspective to local, national and global environmental issues, with a particular focus on sustainability. Studies theories and methodologies that guide environmental research and ethical issues. Examines the way complex social structures and processes define, create and interact with the natural environment. Includes research on land use, population, waste disposal, public health, environmental justice, the environmental movement and public policy. Provides students with an opportunity to learn and apply grant writing skills. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SPE: Speech

SPE-101 Fundamentals of Oral Communication (3)
Studies basic communication theory and practice including communication process, interpersonal relationships, small group interaction and public speaking. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SPE-112 Public Speaking (3)
Studies the fundamentals of public speaking, emphasizing the process of speech preparation and delivery. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SPE-122 Interpersonal Communication (3)
Highlights the role of communication and focuses on becoming effective communicators in personal and professional relationships. Examines how the concepts of self and human behavior influence both interpersonal and intrapersonal communication. Introduces activities and techniques to improve one-on-one and small group communication skills, especially listening, nonverbal communication and conflict resolution. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SPE-332 Group Communication (3)
Examines the theory and techniques used in discussion and group processes. Develops leadership and group skills through frequent practical application in varying group sizes and opportuni-
ties. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SPC-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of an honors faculty member. Requires completion of an honors project learning contract. May be taken more than once. Credits: 1, Hours: (3/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

SPC-928 Independent Study (1-3)
Provides research and research opportunities under the guidance of a faculty member. Credits: 1-3, Hours: (1-3/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor

SUR: Surgical Technology

SUR-126 Surgical Technology I (4.5)
Provides an orientation to the surgical technology profession and operating room theories. Introduces surgical technology, standards of conduct, laws and ethics, hospital administration, teamwork, physical environment, safety standards, principles of asepsis, microbiology, cleaning, disinfection, sterilization, emergencies, instrumentation, wound healing, sutures and perioperative management duties. Credits: 4.5, Hours: (4.5/0/0/0), Arts & Sciences Elective Code: B

SUR-128 Surgical Technology I Lab (2)
Applies principles learned in Surgical Technology I in a hands-on laboratory setting. Focuses on basic competencies surgical technologists need to proficiently perform in the operating room setting. Demonstrates basic concepts of aseptic technique, scrubbing, gowning, gloving, transporting, transferring and positioning the surgical patient, surgical preparation and draping. Studies creating and maintaining a sterile field, providing optimal patient care in the surgical setting and basic instrumentation. Credits: 2, Hours: (0/0/4/0), Arts & Sciences Elective Code: B

SUR-225 Surgical Technology II (4)
Provides basic care preparation and surgical procedures necessary to begin operating room experience. Credits: 4, Hours: (3/2/0/0), Prereq: SUR-126; Arts & Sciences Elective Code: B

SUR-322 Surgical Technology II (3)
Builds on knowledge of basic surgical techniques. Studies the role of the surgical technologist in basic surgical procedures. Presents oral, maxillofacial, plastic, reconstructive, and ophthalmic surgical applications, emphasizing anatomy, physiology, pathophysiology, instrumentation, equipment, procedural steps and patient safety. Credits: 3, Hours: (1/0/0/0/0), Prereq: SUR-126, SUR-128, SUR-322; Coreq: SUR-225, SUR-320; Arts & Sciences Elective Code: B

SUR-340 Surgical Specialties I (1)
Builds on the knowledge of basic surgical techniques. Develops the role of the surgical technologist in basic surgical procedures. Presents oral, maxillofacial, plastic, reconstructive, and ophthalmic surgical applications, emphasizing anatomy, physiology, pathophysiology, instrumentation, equipment, procedural steps and patient safety. Credits: 1, Hours: (1/0/0/0/0), Prereq: SUR-126, SUR-128, SUR-322; Coreq: SUR-225, SUR-320; Arts & Sciences Elective Code: B

SUR-341 Surgical Specialties II (3)
Completes the basic surgical procedures learning with applications in orthopedics, ENT, urology, neurosurgery, cardiovascular and peripheral vascular. Emphasizes anatomy, physiology, pathophysiology, instrumentation, equipment, procedural steps and patient safety. Credits: 3, Hours: (3/0/0/0/0), Prereq: SUR-126, SUR-128, SUR-322; Coreq: SUR-340; Arts & Sciences Elective Code: B

SUR-420 Pharmacology for the Surgical Technologist (2)
Enhances fundamental math skills and provides a summary of basic pharmacology terminology, drug regulation and drug administration. Examines drugs frequently used in the surgical setting, along with an overview of anesthesia administration and general practice. Credits: 2, Hours: (2/0/0/0/0), Prereq: SUR-126, SUR-128; Coreq: SUR-322, SUR-323; Arts & Sciences Elective Code: B

SUR-421 Surgical Technology Pharmacology (1)
Provides information needed to calculate and handle drugs in the operating room. Provides an overview of the administration and general practice of anesthesia in surgery. Credits: 1, Hours: (1/0/0/0/0), Coreq: SUR-225; Arts & Sciences Elective Code: B

SUR-440 Biomedical Sciences for Surgical Technology (2)
Provides a broad base of knowledge for entry-level surgical technologists. Focuses on computers, electricity, lasers, robotics and other fundamental technologies essential to the profession. Credits: 2, Hours: (2/0/0/0/0), Prereq: SUR-126, SUR-128, Coreq: SUR-322, SUR-323; Arts & Sciences Elective Code: B

VIN: Vineyard Management

VIN-105 Introduction to Wine Science (3)
Introduces students to grape varieties grown in the Midwest and used in wine production. Explores the process used to make wine from start to finish through a combination of lecture and lab experiences. Credits: 3, Hours: (2/2/0/0/0), Arts & Sciences Elective Code: B

VIN-106 Introduction to Viticulture (3)
Introduces the common Midwestern grapes used in wine production. Covers establishing and properly managing a producing vineyard through a combination of lecture and lab experience. Credits: 3, Hours: (2/2/0/0/0), Arts & Sciences Elective Code: B

WAT: Water Environmental Technology

WAT-210 Wastewater Treatment: Industrial (4)
Describes common methods and systems used to treat wastes generated by industrial processes. Learning activities include a review of applicable federal and state regulations and pretreatment requirements. Credits: 4, Hours: (4/0/0/0/0), Prereq: WAT-307; Arts & Sciences Elective Code: B

WAT-300 Water Analysis (3)
Introduces basic laboratory safety and gravimetric, spectrophotometric electrochemical, titrimetric and microbiological methods. Students learn the procedures for regulatory sampling and safety, and specific analytical procedures for total residue, fluoride, pH, ammonia, acidity, alkalinity, calcium, chlorine, hardness and coliform analysis. Along with reading assignments from the text, the course is enhanced with up-to-date photographs, interactive exercises and online links. Credits: 3, Hours: (3/0/0/0/0), Arts & Sciences Elective Code: B

WAT-301 Basic Mechanical Maintenance and Pumps (3)
Covers maintenance and repair procedures for pumps typically found in water/wastewater treatment facilities. Students learn basic con-
cepts of hydraulics, pump curves and energy consumption. General safety concerns are also emphasized. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

WAT-304 Water Treatment I (4)
Explores the rudiments of water treatment. Students learn regulatory monitoring, iron manganese removal, filtration, coagulation, flocculation, fluoridation and disinfection. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises and online links. Credits: 4, Hours: (4/0/0/0), Arts & Sciences Elective Code: B

WAT-305 Water Distribution Systems (4)
Provides a working knowledge of potable water distribution systems. Students learn about water storage facilities, operation and maintenance of water mains, water quality issues, disinfection and safety. Along with reading assignments from the text, the course is enhanced with audio, up-to-date photographs, interactive exercises and online links. Credits: 4, Hours: (4/0/0/0), Arts & Sciences Elective Code: B

WAT-306 Wastewater Collection Systems (4)
Provides a working knowledge of wastewater collection systems. Students learn wastewater collection systems safety procedures, sewer inspection and testing, pipeline and maintenance, underground repair, lift stations, equipment maintenance and sewer rehabilitation. Along with reading assignments, the course is enhanced with up-to-date photographs, audio, interactive exercises and links. Credits: 4, Hours: (4/0/0/0), Arts & Sciences Elective Code: B

WAT-307 Wastewater Treatment I (4)
Explores the rudiments of wastewater treatment. Students learn water pollution control, preliminary and primary treatment, fixed film processes and suspended growth systems. Along with reading assignments from the text, the course is enhanced with up-to-date photographs, audio, interactive exercises and online links. Credits: 4, Hours: (4/0/0/0), Arts & Sciences Elective Code: B

WAT-308 Wastewater Analysis (3)
Using the Internet, students obtain the skills and knowledge to properly monitor the treatment process to conform to compliance regulations. Topics include BOD, COD, ammonia, grease and oil, chlorine and solids analysis. The academic portion of the course, self-study exercises and quizzes are all done over the Internet. The course includes hands-on labs at Kirkwood or proficiency that an operator can complete on the job. Students are able to enroll at any time, set their own schedule for online studies and interact with the instructor outside of the classroom. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

WAT-311 Wastewater Treatment II (4)
Describes wastewater treatment methods and concepts that are found in more advanced wastewater treatment facilities such as activated sludge, anaerobic digestion, effluent disposal and reclamation, and nitrogen and phosphorous removal methods. Credits: 4, Hours: (4/0/0/0), Prereq: WAT-307; Arts & Sciences Elective Code: B

WAT-312 Water Treatment II (4)
Describes treatment methods and concepts that are found at advanced water treatment facilities such as softening, demineralization, trihalo-ethanes, taste and odor control, corrosion control and disposal of process wastes. Credits: 4, Hours: (4/0/0/0), Prereq: WAT-304; Arts & Sciences Elective Code: B

WAT-400 Permits and Administration (1)
Examines many of the supervisory and managerial issues faced by a water/wastewater professional. Students focus on operations management and permit procedures, as well as people skills. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

WAT-928 Independent Study (2)
Offers special investigative projects related to water or wastewater plant operations selected by the student with the approval of the department advisor. Credits: 2, Hours: (0/4/0/0), Arts & Sciences Elective Code: B

WAT-932 Internship (3)
Offers a supervised training period in a water or wastewater treatment plant. The student participates in the routine daily operation and maintenance of the host water or wastewater treatment facility. Credits: 3, Hours: (0/6/0/0), Arts & Sciences Elective Code: B

WEL: Welding

WEL-102 Virtual Reality Welding (2)
Provides students the opportunity to demonstrate various techniques using the Lincoln VTECH Virtual Reality Welder. Focuses on understanding and applying the correct techniques and practices used in welding processes. Credits: 2, Hours: (1.5/3/0/0), Arts & Sciences Elective Code: B

WEL-105 Welding Principles (2)
Provides students with instruction in welding and cutting principles and their applications. Course includes comprehensive treatment of electrical theory, safety, equipment, electrodes, types of joints and welds, metals and their characteristics, testing and inspection, welding certifications, specifications and codes. This course follows the American Welding Society guidelines. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

WEL-110 Welding Blueprint Reading (2)
Studies basic elements of drawings, orthographic views, structural drawings and welding symbols associated with welding fabrication. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

WEL-113 Welding Blueprint Reading/ Pipe (1)
Studies basic blueprint pipe welding symbols, dimensioning for layout and methods of representing a pipe layout. Credits: 1, Hours: (1/0/0/0), Prereq: WEL-110; Arts & Sciences Elective Code: B

WEL-128 Brazing/Soldering (2)
Introduces the techniques and procedures used to braze, braze weld and silver solder. Studies the various methods and procedures of oxyacetylene repair welding of cast iron and nonferrous materials. Aluminum welding techniques are stressed. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

WEL-130 Oxyacetylene Welding (2)
Provides instruction in oxyacetylene welding, including the setup and operation of equipment and accessories. Welding procedures for light gauge steel and heavy steel plate in all positions and various joint types are taught. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

WEL-134 Cutting Processes (2)
Develops skills used in oxyacetylene flame cutting, plasma cutting and semiautomatic flame cutting. Students learn about setup, operation and maintenance of equipment. Safety is stressed. Credits: 2, Hours: (0.5/3/0/0), Arts & Sciences Elective Code: B

WEL-146 AWS Bend Test (4)
Covers the testing of welds including the preparation and welding of A.W.S. Welder Certification Guided Bend Tests in all positions using E-7018 electrodes. Students must pass this test to complete the metallic arc welding section of the welding program. Credits: 4, Hours: (1/6/0/0), Prereq: WEL-157; Arts & Sciences Elective Code: B

WEL-156 Welding Skills I (4)
Includes introductory concepts and theories in shielded metal arc welding. Students learn welding techniques for weaving and flat position fillet welds. Oxyacetylene torch and plasma cutter operation are also covered. Credits: 4, Hours: (1.5/5/0/0), Arts & Sciences Elective Code: B

WEL-157 Welding Skills II (4)
Introduces students to stick welding in the horizontal, vertical and overhead positions. Students learn to apply basic techniques to solve advanced welding situations. Credits: 4, Hours: (1/6/0/0), Prereq: WEL-156; Arts & Sciences Elective Code: B

WEL-184 GMAW (3)
Studies the setup and operation of the semiautomatic welding process, using both hard wire and flux core wire. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

WEL-185 Advanced GMAW (3)
Continues the study of gas metal arc welding. Learning activities focus on the welding process as it relates to the welding of stainless steels and aluminum. Flux core welding is included. Credits: 3, Hours: (1/4/0/0), Prereq: WEL-184; Arts & Sciences Elective Code: B

WEL-192 Gas Tungsten Arc Welding (4)
Covers all position welding techniques on ferrous and nonferrous materials using the heliarc welding process. Credits: 4, Hours: (1.5/5/0/0), Prereq: WEL-130; Arts & Sciences Elective Code: B

WEL-199 Introduction to Flux Core (1)
Continues the study of gas metal arc welding. Learning objectives focus on semiautomatic welding process as it applies to flux cored welding. Students weld with both dual shield and self-shielding wires. Students learn the strengths and weaknesses of both processes. Credits: 1, Hours: (0/2/0/0), Prereq: WEL-184; Arts & Sciences Elective Code: B
WEL-208 Introduction to Fabrication (2)
Provides students with hands-on fabrication basics used by welding industries. Covers layout, reading blueprints, applied math, cost estimation, jigs and fixtures, and introduction to shearing, bending, drilling, sawing and other manufacturing processes associated with welding fabrication. Credits: 2; Hours: (0/4/0/0), Prereq: MAT-764, WEL-110, WEL-184; Arts & Sciences Elective Code: B

WEL-230 Welding Quality Assurance (3)
Focuses on understanding weld discontinuities and defects, their causes and prevention, and testing and maintaining weld quality. Emphasizes the importance of weld quality, and how quality is achieved through procedures, qualification of those procedures and welder qualification testing. Explores the relationship between welding quality and welding code use. Results of test methods are discussed to reinforce the reasons for testing. Credits: 3; Hours: (3/0/0/0), Arts & Sciences Elective Code: B

WEL-260 Welding Health and Safety Certificate (2)
Provides basic training and professional certifications in welding workplace health and safety. Credits: 2; Hours: (2/0/0/0), Arts & Sciences Elective Code: B

WEL-270 Automotive Welding Principles (1)
Covers welding safety and basic, all-position MIG welding of fillet and groove welds using 22 through 12 gauge steel. Students learn to heat components for extraction and cutting of metals using the oxy-acetylene and plasma cutting processes. Included are proper techniques for extracting broken bolts and flame cutting nuts from bolts. Credits: 1; Hours: (.5/1/0/0), Arts & Sciences Elective Code: B

WEL-302 Pipe Welding/ SMAW (2)
Provides basic pipe welding techniques in the 2G and 2F positions using E6010 and E7018 electrodes. Basic fit-up and weld-off techniques with fillet welds and groove welds (with and without backing) are learned. Specimens are welded and tested to ASME code standards. Credits: 2; Hours: (0/4/0/0), Prereq: WEL-157; Arts & Sciences Elective Code: B

WEL-304 Pipe Welding/ SMAW Fixed Horizontal (3)
Provides advanced pipe welding techniques in the 5G and 5F positions using E6010 and E7018 electrodes. Basic fit-up and weld-off techniques with fillet welds and groove welds (with and without backing) are learned. Specimens are welded and tested to ASME code standards. Credits: 3; Hours: (1/4/0/0), Prereq: WEL-302; Coreq: WEL-305; Arts & Sciences Elective Code: B

WEL-305 Pipe Welding/ SMAW Qualification (3)
Provides advanced pipe welding techniques in the 6G and 6F positions using fillet welds and groove welds (with and without backing). Specimens are welded and tested to ASME code standards. Credits: 3; Hours: (1/4/0/0), Prereq: WEL-302; Arts & Sciences Elective Code: B

WEL-306 Pipe Welding/ GMAW (3)
Focuses on entry-level skills using the gas metal arc welding process on pipe. Credits: 3; Hours: (1/4/0/0), Prereq: WEL-184; Arts & Sciences Elective Code: B

WEL-307 Pipe Welding/ GTAW (3)
Teaches entry-level skills using the gas tungsten arc welding process on small-diameter, thin-wall steel pipe in all positions. Credits: 3; Hours: (1/4/0/0), Prereq: WEL-192; Arts & Sciences Elective Code: B

WEL-311 Pipe Weld/ Heavy Wall GTAW (5)
Teaches entry-level skills using the gas tungsten arc welding process on large-diameter, heavy-wall steel pipe in all positions. Credits: 5; Hours: (1/6/0/0), Prereq: WEL-192; Arts & Sciences Elective Code: B

WEL-331 Welding Fundamentals (2)
Covers basic welding techniques with oxyacetylene and electric welders. Designed for the general tradesperson working in the areas of mechanics and automotive technology. Students are introduced to a variety of welding situations including cutting, brazing and various welding positions on lighter gauges of metal and basic fabrication. Credits: 2; Hours: (1/2/0/0), Arts & Sciences Elective Code: B

WEL-333 Auto Collision Welding (2)
Introduces basic welding techniques that can be applied to auto collision repair. Students learn to weld light gauge sheet metal with the GMAW process. Instruction emphasizes the requirements needed to pass the I-CAR Automotive GMA (MIG) Welding Steel Qualification Test. Students also receive instruction in the use of an oxyacetylene torch and a plasma cutter. Credits: 2; Hours: (1/2/0/0), Arts & Sciences Elective Code: B

WEL-360 Production TIG Welding (4)
Focuses on proper weld safety, machine setup and welding techniques for gas metal arc welding. Students perform American Welding Society compliant welds on stainless, aluminum and mild steels in the flat and horizontal positions. AWS welder qualifications issued upon successful completion of course. Credits: 4; Hours: (1.5/5/0/0), Arts & Sciences Elective Code: B

WEL-370 Production Mig Welding (4)
Teaches proper weld safety, machine setup and welding techniques for gas metal arc welding using short arc, spray and pulse metal transfer methods. Students perform American Welding Society compliant welds on stainless, aluminum and mild steels in the flat and horizontal positions. AWS welder qualifications issued upon successful completion of course. Credits: 4; Hours: (1/6/0/0), Arts & Sciences Elective Code: B

WEL-400 Welding for Maintenance Trades (4)
Covers welding/shop safety, welding theory, welding blueprint reading, repair welding and several different welding technologies. Emphasizes GMAW, SMAW, STAW, OAC and plasma-arc cutting methods, in a hands-on lab setting. Credits: 4; Hours: (2/4/0/0), Prereq: MAT-233; Arts & Sciences Elective Code: B

WEL-710 Robotic Welding (3)
Covers the fundamental operating principles, weld process controls and optimization strategies for robotic Gas Metal Arc Welding. Introduces key principles, variables and applications universal to the robotic GMAW process through lecture, demonstration and hands-on exercises. Credits: 3; Hours: (1/4/0/0), Arts & Sciences Elective Code: B

WEL-928 Independent Study (1-3)
Provides readings, papers and basic research or other projects under the individual guidance of a staff member. Credits: 1; Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean

WEL-932 Internship (3-6)
Provides employment in an approved welding-related position. Includes instructor visits/evaluations and employer performance evaluations. Credits: 3-6, Hours: (0/0/0/192-384), Arts & Sciences Elective Code: B

WEL-947 Special Projects (1)
Allows for those needing specific welding training, other than the regular courses, or practice for various weld tests. Also for those needing review or upgrading of methods and skills. Credits: 1; Hours: (0/2/0/0), Arts & Sciences Elective Code: B

WTT: Wind Energy & Turbine Tech

WTT-300 Wind Turbine Construction (3)
Describes the major system attributes of the 2.5 MW Wind Turbine. Provides an overview of the necessary elements to perform a successful installation of the WTG, including specific work instructions, inspection and receiving forms, safety policies and component assemblies. Credits: 3; Hours: (3/0/0/0), Prereq: All required health and safety certificates; Arts & Sciences Elective Code: B

WTT-350 Wind Turbine Commissioning (3)
Introduces skills needed to safely commission a wind turbine. Covers component identification, component functions, electrical system troubleshooting and testing, training on the tools needed to perform system troubleshooting and testing, reading and understanding schematics, pitch system troubleshooting and testing, and safety. Credits: 3; Hours: (3/0/0/0), Prereq: ATR-308, WTT-300; Arts & Sciences Elective Code: B

WTT-400 Wind Turbine Operations (3)
Examines turbine components, design principles, unique features and operating procedures. Provides a decisive understanding of an operating turbine's work flow and explains the interdependency of each of the turbine's systems. Focuses on best practices that minimize wasted man-hours and materials, as well as innovative ideas for cost savings and overall efficiency. Credits: 3; Hours: (3/0/0/0), Prereq: WTT-350; Arts & Sciences Elective Code: B

WTT-450 Wind Turbine Maintenance (4)
Provides maintenance techniques and extensive testing resources used to maintain the wind turbine generator. Scheduling, preventive maintenance, and lubrication specifications are explored. Focuses on best practices that minimize wasted man-hours and materials, as well as...
innovative ideas for cost savings and overall efficiency. Credits: 4, Hours: (2/4/0/0), Prereq: WTT-500; Arts & Sciences Elective Code: B

**WTT-500 Wind Turbine Troubleshooting (4)**

Introduces proven troubleshooting techniques and extensive troubleshooting resources. Explores an operating turbine's work flow and the interdependency of each of the turbine systems. Integrates Remote Monitoring Diagnostic Center (RMDC) and Condition Based Monitoring System (CBMS) technology into the troubleshooting process. Exercises replicate the site work environment as closely as possible. Credits: 4, Hours: (2/4/0/0), Prereq: WTT-400; Arts & Sciences Elective Code: B
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