KIRKWOOD COMMUNITY COLLEGE
2021 – 22 CATALOG

Kirkwood
COMMUNITY COLLEGE

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General Information

Kirkwood Community College is the region's only partner for empowering students to achieve success for less ... helping students find their future and save a fortune.

Our Mission

To identify community needs; provide accessible, quality education and training; and promote opportunities for lifelong learning.

Our Vision

To be the community college leader in regional, national, and global education.

Our Values
- Respect
- Excellence
- Responsibility
- Diversity

Equal Employment Opportunity

Non-discrimination Statement for Educational Purposes:

Kirkwood Community College shall not engage in nor allow unlawful discrimination against individuals involved in its educational programs and activities on the basis of race, creed, color, sex, sexual orientation, gender identity, national origin, religion, age, disability or actual or potential parental, family or marital status. If you have questions or complaints related to compliance with the policy please contact the Vice President of Human Resources at Kirkwood Community College, 313 Kirkwood Hall, 6301 Kirkwood Blvd., SW, Cedar Rapids, IA 52404, Telephone: 319-398-5572, Email: equity@Kirkwood.edu or the Director of the Office for Civil Rights U.S. Department of Education, Citigroup Center, 500 W. Madison St., Suite 1475, Chicago, IL 60661-7204, Telephone: 312-730-1560, Fax: 312-730-1576, Email: OCR.Chicago@ed.gov.

Non-discrimination Statement for Employment Purposes:

Kirkwood Community College shall not engage in nor allow unlawful discrimination against any employee or applicant for employment. This includes all employment practices, hiring practices, and unwelcome harassment of applicants or employees based on race, creed, color, sex, sexual orientation, gender identity, national origin, religion, age, disability or actual or potential parental, family or marital status. If you have questions or complaints related to compliance with the policy please contact the Vice President of Human Resources at Kirkwood Community College, 313 Kirkwood Hall, 6301 Kirkwood Blvd., SW, Cedar Rapids, IA 52404, Telephone: 319-398-5572, Email: equity@Kirkwood.edu or the Director of the Office for Civil Rights U.S. Department of Education, Citigroup Center, 500 W. Madison St., Suite 1475, Chicago, IL 60661-7204, Telephone: 312-730-1560, Fax: 312-730-1576, Email: OCR.Chicago@ed.gov.

Kirkwood Locations

Cedar Rapids Main Campus

6301 Kirkwood Boulevard SW
Cedar Rapids, IA 52404
319-398-5411
www.kirkwood.edu

Kirkwood Community College's main campus is located in Cedar Rapids, Iowa, a metropolitan area of approximately 150,000 residents. The main campus location features 1.85 million square feet of learning space, a working 635-acre farm, a 1.5-acre vineyard and winery, an operational wind turbine, and one of the only full-service teaching hotels in the country.

Each year Kirkwood's Cedar Rapids location provides close to 20,000 students with academic and career-focused advising, tutoring and writing help, mentoring and counseling services, an on-campus bookstore and library, close to 100 student-focused clubs and organizations, and much more.

Iowa City Location

1816 Lower Muscatine Road
Iowa City, IA 52240
319-887-3658
www.kirkwood.edu/iowacity

Kirkwood's Iowa City location gives students the opportunity to experience a big-university environment, combined with Kirkwood's unique and individualized approach to success. The Iowa City location brings together academic excellence, first-class facilities, and a convenient location together to serve its growing student population.

Services include academic and transfer advising, personal counseling, financial aid, tutoring, a fitness center, library, and a full-service bookstore.

Center Locations

In addition to the main campus in Cedar Rapids and the Iowa City campus, Kirkwood has additional locations 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 an associate of arts degree through local Kirkwood centers. Classes at each center are delivered through traditional face-to-face classroom instruction, interactive video classrooms, and are also available online.

Local Kirkwood centers offer the same services available to students at the main campus in Cedar Rapids, including placement testing, academic advising, tutoring, wireless computer access, and more.

Benton County Center

111 West Third Street
Vinton, IA 52349
319-472-2318
www.kirkwood.edu/bentoncounty

Cedar County Center

100 Alexander Drive, Suite 2
Tipton, IA 52772
563-886-2950
www.kirkwood.edu/cedarcounty

Iowa County Center

200 West Street
Williamsburg, IA 52361
319-668-2461
www.kirkwood.edu/iowacounty

Jones County Regional Center

220 Welter Drive
Monticello, IA 52310
319-465-2302
www.kirkwood.edu/jonesregional

Kirkwood Regional Center at the University of Iowa

2301 Oakdale Blvd
Coralville, IA 52241
319-358-3100
www.kirkwood.edu/kirkwoodui

Linn County Regional Center

1770 Boyson Road
Hiawatha, Iowa 52233
319-398-1052
www.kirkwood.edu/linnregional

Tippie-Mansfield Center

1214 9th Ave.
Belle Plaine, IA 52208
319-444-2549
www.kirkwood.edu/belleplaine

Washington County Regional Center

2192 Lexington Blvd
Washington, IA 52353
319-653-4655
www.kirkwood.edu/washingtonregional

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.

Advanced Manufacturing and Robotics Technologies
Advanced Welding Technologies
Agricultural Business
Agricultural Science
Apparel Merchandising and Design
Architectural Technology
Automation and Instrumentation Technologies
Automotive Collision Repair and Restoration
Automotive Technology
Baking and Pastry Arts
Business Administration
Business Administration: Accounting
Business Administration: Administrative Management
Business Administration: Financial Services
Business Administration: Management
Business Administration: Marketing Management
CAD/Mechanical Engineering Technology
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
Digital Arts
Early Childhood Education
Electroneurodiagnostic Technology
Electronics Engineering Technology
Energy Production and Distribution Technologies
Entry-level Firefighter
Exercise Science and Wellness
Golf Course and Athletic Turfgrass Management
Graphic Communication Technology
Hospitality Management
Human Services
HVAC Installer
Industrial Maintenance Technology
Interior Design
Landscape Horticulture Studies
Medical Assisting
Medical Laboratory Technology
Network and System Administration
Nursing Practical, Associate Degree (RN)
Occupational Therapy Assistant
Paralegal Studies
Paramedic
Parks and Natural Resources
Pet Grooming
Pharmacy Technician
Physical Therapist Assistant
Plumbing Pre-Apprenticeship
Respiratory Therapist
Skilled Trades
Surgical Technology
Veterinary Assistant
Veterinary Technician
Water Environmental Technology
Web Technologies

Liberal Arts Degrees

If you plan to continue your education after Kirkwood, our Liberal Arts Program will provide the foundation and transferable courses you need to prepare for that next step.

The Liberal Arts Program offers the following transfer interest areas. Depending upon your transfer institution and your transfer 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 to the institution of your choice. If you have questions about the transfer of specific courses, consult www.transferiniowa.org

Liberal Arts - Associate of Arts (A.A.) degree
We can help you transfer your A.A. degree and follow a degree pathway, including:
Art
Business Administration
Criminal Justice
Digital Media
Economics
Education
Engineering
History
Humanities
Journalism
Math
Music
Philosophy
Political Science
Psychology
Religious Studies
Science
Sociology
Theatre
World Languages-Chinese, French, Spanish

Liberal Arts - Associate of Science (A.S.) degree
We can help you transfer your A.S. degree and find a pathway, including:
Computer Science
Engineering
Math

Science

Transfer Majors

These programs have a structured set of courses designed to provide students with a common foundation of knowledge and credits that seamlessly transfer into aligned programs at Iowa public universities.

Biology

Business

Chemistry

Criminal Justice

Human and Family Services

Journalism

Mathematics

Physics

Political Science

Psychology

Social Work

Sociology

Reverse Credit Transfer Option

Reverse Credit 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, they may indicate their interest in applying future credits earned at the university toward the completion of their associate degree. By doing so, the student agrees to have their university contact information and transcript sent back to Kirkwood. 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 and Diplomas

Certificate and Diploma programs are designed for entry-level employment and may provide specialization in specific areas. Courses are usually taken from degree programs and may be completed within 6 to 48 semester hours.

Certificates

Advanced Chassis

Advanced Drivetrain

Advanced Powertrain

Architectural Technology

Agribusiness Entrepreneurship

Agribusiness Farm Management

Agribusiness Industry Management

Beef Science

Clinical Laboratory Assistant

Computer Aided Design (CAD)

Construction Estimator

Construction Management

Construction Supervision

Crop Production

Data Analytics and Reporting

Early Childhood Administration

Early Childhood Paraeducator

Emergency Medical Technician (EMT)

Entrepreneurship

Entry-level Firefighter

Fire Science

Fundamentals of Automotive Technology

Global Perspectives in Business

Healthcare IT Technician

Human Resources

Industrial Robotics

IT Basics

Java Programming

Mobile App Development

.NET Programming

Precision Agriculture

Project Management

Project Management (Design/Build)

Retail Marketing

Sales

Social Media Marketing

Swine Science

Technical Accounting

Web Design

Web Development

Diplomas

ACE Industry

Agricultural Science

Baking & Pastry Arts

Behavioral Health Paraprofessional

Desktop Customer Service

Early Childhood Education

Electromechanical Technology

Entry-Level Automotive Technology

Entry-Level Firefighter

Entry-Level Welder

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Tech Support Specialist

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Water Environmental Technology

Water Treatment Specialist

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.

Business Administration: Accounting

Business Administration: Management

Liberal Arts

Paralegal Studies

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 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 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 coursework 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

	Associate of Arts (A.A.)	Associate of Science (A.S.)	Associate of Applied Science (A.A.S.)
	credit hours		
Communication – Writing	5	5	
Communication – Speech	3	3	
Communication			6
Humanities	9		
Humanities and/or History-Cultures		9	3
History-Cultures	6		
Social Science	9	6	3
Mathematics	3		
Science	6		
Mathematics/Science		20	3
Program specific courses			47-71
Electives	21	19	
Degree Total	**62**	**62**	**62-86**

Diploma Requirements

- Earn 30-48 semester hours of credit in the courses required for the specific Applied Science program.

- 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 6-29 semester hours of credit in courses required for the specific Applied Science program.

- 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

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

How to Apply

Complete an admission application and submit it online at www.kirkwood.edu/apply

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.

Placement Exams

All new degree-seeking students registering for more than six credit hours are required to demonstrate college level competency in writing, reading and math prior to registration. Appropriate course placement in either college or pre-college courses is determined by a variety of measures, including placement tests, previous academic experience, advising, and so on. Exemptions to this policy must be evaluated prior to registration.   (Please allow at least two weeks for these exemptions to be evaluated.) To be exempt a student must have:

- Completed similar placement tests or the 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.

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

Financial Aid

Submit the Free Application for Federal Student Aid (FAFSA) as soon as possible after October 1. Start early – the financial aid process can take some time to complete. Go to www.fafsa.gov

Scholarships

Kirkwood awards over $3 million in scholarships to students each year. Applications for first-round scholarships open October 1, and close March 15. Applications received after the deadline will be eligible for a limited amount of second-round funding opportunities and new scholarships developed after the March 15 deadline. Applications for second-round opportunities are due July 15. Apply at www.kirkwood.edu/scholarships

Housing

Contact the Housing office at 319-398-7647 or www.kirkwood.edu/housing Most area apartments are open Monday-Friday 8 a.m.-5 p.m.

Transcripts

Transfer or returning adult students who have a college degree or who want credit for previous coursework 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 and well in advance of the semester they plan to enter, in order to gain maximum pre-enrollment assistance from college staff. Students can submit applications one year prior to program start dates. Check individual program entry times in the program's description in this catalog.

College Credit While in High School

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 approval from the high school, students may enroll in individual classes or a sequence of classes called a Career Academy program at no cost to the student or family. Courses are available within the high school setting, at a Kirkwood location or online. Additional information can be found at www.kirkwood.edu/earncredit and high school students can apply at www.kirkwood.edu/hscreditapply.

Global Learning

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

Kirkwood's Global Learning department fosters global learning, ensuring that every Kirkwood student, faculty and staff engage in intercultural experiences as part of their Kirkwood journey. Through global learning experiences, students learn to encounter difference, understand issues of equity and inclusion, and appreciate the rich complexity of our globalized world. Students develop mutual respect and an understanding of interconnectedness through a variety of intentional programming such as study abroad, virtual exchange, on-campus activities, and more.   International students, immigrant students and English Language Learners (ELLs) will also find intentional programming and services in Global Learning. The following services and resources are available:

- English Language Acquisition (ELA) course sequence
- Community organizations referral
- International student advising
- International recruiting and prospective student services
- SEVIS advising and compliance
- Faculty exchanges and global professional development
- International grants/special projects
- International Education Week each November
- Cultural activities and celebrations
- Study Abroad programs and scholarships
- Virtual exchange opportunities for students and training for faculty

English Language Proficiency

Cedar Rapids Location
3051 Cedar Hall
319-398-4998

Iowa City Location
101 Iowa City Credit Center
319-887-3658

To assure that students whose first language is not English are prepared to complete college-level coursework, proficiency in English must be demonstrated. These students, including graduates of American high schools, international students, permanent residents, refugees and U.S. citizens, can demonstrate English language proficiency by earning one of the following:

- ACT composite scores of 18 or higher with English sub scores of 18 or higher.
- SAT writing scores of 430 or higher.
- Standard TOEFL paper-based scores of 500 or higher or Internet-based equivalent scores of 63 or higher.
- IELTS scores of 5.0 or higher.
- Kirkwood English Language Acquisition (ELA) placement scores of Level Six.

Note: All test scores must be earned within the two years prior to applying to the college.

Students may not register for non-ELA credit classes until they complete, or are completing, Level Five of the ELA course of study. Exceptions may be made for students who plan to study Industrial Technology majors. ELA coursework is intended to provide developmental preparation for other college credit classes.

Nine elective credits are awarded for Elements of Writing, Effective Reading Strategies, and Fundamentals of English Grammar.

Students who do not plan to take credit classes, but want to obtain the basic English language skills and knowledge necessary for employment and self-sufficiency, should contact 319-784-1510 (Cedar Rapids), 319-887-3967 (Iowa City), or 319-653-4655 (Washington).

International Students

Cedar Rapids Location
1154 Linn Hall
319-398-5579

Iowa City Location
101 Iowa City Credit Center
319-887-3658

An international student is a person who enters the United States with an F-1 or J-1 student visa.

International admission steps are found at www.kirkwood.edu/intlapply.

The international student advisor is available in the International Programs office and is the principal 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 of a resident requires 90 consecutive days of permanent residency within the state leading up to the student's first semester of enrollment. Students who come to the state of Iowa for the purpose of attending college are classified as

non-resident. Once the student's first semester of enrollment has begun, residency status can only be changed with a qualifying event. Residency status changes are not automatic. They must be requested by the student and supported with appropriate documentation.

Tuition Rates

The Kirkwood Board of Trustees established current tuition charges in May 2021.
Additional fees may be applied for technology, and other incidentals as described in the Fee Policy. Tuition and fees are due two weeks before the term starts.

Iowa Residents

- $186 per credit hour, per semester.
- Tuition for an average, full-time schedule (15 credit hours) is $2,790 per semester.

Nonresidents

- $249 per credit hour, per semester.
- Tuition for an average, full-time schedule (15 credit hours) is $3,735 per semester.

International Students

- $372 per credit hour, per semester.
- Tuition for an average, full-time schedule (12 credit hours) is $4464 per semester.
- Mandatory international student health insurance for one year is estimated to be $1,300.

Installment Payments
319-398-5631

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. There is no cost to enter the interest-free monthly payment plan. Students may pay 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
financialaid@kirkwood.edu

Iowa City Location
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 October 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 enrolled.

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 October 1.

2. Track your financial aid status at Kirkwood by logging into MuHub and choosing "Financial Aid Checklist" from the student menu. Review your checklist for additional requirements.

3. Activate or decline your loans by completing that step on the financial aid checklist. Please ensure that you have loan funds for the terms you will be attending. This would include fall, spring and summer, if applicable.

4. If you activate your loans, complete the Department of Education's entrance counseling and Master Promissory Note (www.studentloans.gov).

5. Sign up for Direct Deposit through MyHub. If an amount remains after tuition and books are paid, it will be sent once your attendance is verified. If you choose not to sign up for direct deposit, your refund will be mailed to you at the address on file.

Federal and State Financial Aid Programs

Kirkwood participates in state and federal financial aid programs. Kirkwood uses the FAFSA information to determine eligibility. For more information on these programs, go to www.kirkwood.edu/onestop.

Scholarships

Kirkwood awards over $3 million in scholarships to students each year. Applications for first-round scholarships open October 1 and close March 15. 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.
To be eligible, a student must be enrolled in a degree, certificate or other program leading to a recognized education credential and be enrolled at least halftime. Students listed as a dependent 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
202 Kirkwood Hall
319-398-7600

Iowa City Location
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.

Academic Resources

Dean of Students Office
Cedar Rapids Main Campus
319-398-5540

The Dean of Students Office supports students through a variety of programs and services including Counseling, Career Services, Advising and Transfer Center, Project START, New Student Orientation, Room Scheduling, Student Assistance and Concerns, KPACE and Vocational Rehabilitation.

Counseling Services
www.kirkwood.edu/counseling

Cedar Rapids Location
2092 Cedar Hall
319-398-5540

Iowa City Location
112 Credit Center
319-887-3658

Counseling is available to all students, free of charge. Students may contact the nearest campus to schedule an appointment with one of our counselors.

Counseling Services provides personal counseling on a variety of topics, including:
- Coping strategies for test anxiety, time management, stress reduction, and social anxiety
- Assertiveness skills and anger management
- Problem-solving and decision making skills
- Transitioning to independent living, homesickness and loneliness
- Mental health counseling
- Relationship issues
- Student advocacy
- Information and referral to campus and community resources

Career Services
Cedar Rapids Main Campus
319-398-5540

www.kirkwood.edu/careerservices

Career Services assists students, alumni and community members with the career development process and/or job seeking skills.
- Complete online assessments FOCUS 2 and Career Coach to learn more about your interests, values and skills.
- Search current job opportunities and post resumes on Kirkwood's jobs posting website at www.kirkwood.edu/jobs.
- Receive one-on-one career exploration/career search assistance.

Advising and Transfer Office
Cedar Rapids Location
2nd Floor of Kirkwood.Hall
319-398-5540
att@kirkwood.edu
www.kirkwood.edu/advising

Iowa City Location
112 Credit Center
319-887-3658
ICAdvising@kirkwood.edu
www.kirkwood.edu/iowacity

Students who are planning to transfer to four-year institutions can receive assistance in the Advising and Transfer Office. The office serves as a liaison between Kirkwood and four-year colleges and universities. Whether it is navigating the transfer process, planning the courses best suited for your transfer major, or simply finding a schedule of upcoming four-year college visits, the Advising and Transfer Office can provide many pieces of information to students.

MyHub
MyHub is online access to Kirkwood resources and registration information. MyHub allows students to:
- Check grades.
- Register for classes.
- Drop classes.
- Get copies of class schedule.
- Check tuition bill.
- Check financial aid status; and more.

The MyHub user ID is called a k-number. The k-number is the letter k and a sequence of seven numbers (example: k0003750). Each k-number and password are kept confidential. For help with your k-number, visit the Student Help Desk, 131 Nielsen Hall and provide a photo identification, or call 319-398-7624, or go to www.kirkwood.edu/knumber.

Project START
Cedar Rapids Main Campus
project.start@kirkwood.edu

Project START (Supported Training and Retraining) helps students overcome barriers they may encounter while reaching their academic and career goals. Staff 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.

KPACE

Kirkwood's Pathways for Academic Career Education and Employment
Cedar Rapids Main Campus
319-398-5899 ext 5069

KPACE provides academic, personal and financial supports to individuals

who are currently earning a wage lower than a livable wage for their family. Kirkwood offers short-term and long-term training to prepare individuals to work in a middle-skill industry that is experiencing a shortage in the current Iowa workforce.

KPACE allows individuals the opportunity to seek training based on their developmental needs, career goals, and personal situations. KPACE assistance has been successful in alleviating student and life stressors that can cause barriers to student success.

Unique to this Kirkwood award, students will be connected with a Pathway Navigator who offers guidance and support from the beginning to the end of their educational and career pathway. KPACE financial assistance is available for a maximum of six 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.

Iowa Vocational Rehabilitation Services

Cedar Rapids Main Campus
2027 Cedar Hall
319-398-4925
www.ivrs.iowa.gov

The Iowa Vocational Rehabilitation Services office works with Iowans with disabilities to:

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

Student Assistance

Cedar Rapids Location
Kirkwood Hall 2nd floor
319-398-5540

www.kirkwood.edu/studentassistance
studentassistance@kirkwood.edu

Student Assistance is available to help students navigate life at Kirkwood and in the community. When students are unsure where to go for help or when the unexpected occurs in life, the staff in Student Assistance is available to provide support and information to college and community resources. Student Assistance staff assist with unexpected life events, personal crises, or other difficulties that can interfere with college success.

Learning Services

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

Learning services offers a variety of services and support programs for Kirkwood students. Services available include Test Centers, Tutoring Services & Assistive Technology, and Accommodation Services for students with disabilities. TRiO Student Support Services, VITAL and the ASK Program are three programs specifically designed to support students within the college environment. See program descriptions for more information.

ASK Program

Cedar Rapids Main Campus
2063 Cedar Hall
319-398-7752
www.kirkwood.edu/ask

The ASK program provides individualized academic, social and independent skill support for students with high functioning Autism Spectrum Disorder, including Asperger's syndrome, or Pervasive Developmental Disorder-NOS, and other related disabilities. We integrate Kirkwood resources, community partnerships, and research-based interventions and curriculums to support students. To be eligible for the program students must enroll in at least two Kirkwood credit courses and be able to complete college-level work. For more information, please contact our office or visit our website.

Test Centers

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

testcenter@kirkwood.edu
www.kirkwood.edu/testcenter

Iowa City Location
1816 Lower Muscatine Road
319-887-3642

All regional and county Kirkwood campuses have test centers that will proctor placement and academic examinations. Please contact the preferred test center for its schedule and procedures.

A wide variety of testing services are provided to prospective students, current students, graduates and the community at large. Prospective students participate in placement testing to help determine their readiness for college-level classes. Once prospective students complete placement testing, advisors help them determine results. Current students use the center for department make-up and Distance Learning exams. Provides testing accommodations for disabilities. Alumni and members of the community use the center for continuing education and professional certification testing. In addition, English Language Acquisition (ELA) tests are given to incoming students whose native language is not English.

A photo ID is required for all tests.

Accommodation Services

Cedar Rapids Main Campus
2063 Cedar Hall
319-398-5574
www.kirkwood.edu/accommodations

Accommodation Services offers support for students with disabilities needing academic accommodations. These services are available at no-cost to qualified students. Accommodation Services are available to students at all Kirkwood campuses as well as students enrolled in online courses. For more information, visit our website or refer to the college policy regarding students with accommodations in the "General Policies and Students Rights" section of this catalog.

TRiO Student Support Services

Cedar Rapids Main Campus

2063 Cedar Hall
319-398-5574
trio@kirkwood.edu
www.kirkwood.edu/studentsupportserv
ices

TRiO Student Support Services is a program specifically designed to assist students in the transition to higher education and the college environment. TRiO staff provide Kirkwood students with advice, guidance, and support to achieve their academic goals, such as obtaining an associate's degree and/or transferring to a four-year post-secondary institution. Students work with an individual advisor to meet TRiO 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 programs are federally funded under the Higher Education Act of 1965. TRiO programs help students overcome class, social and cultural barriers in higher education.

To be eligible for the TRiO program a student must meet one of the following eligibility criteria and be a 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 Location
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.

Tutoring is also available 24/7 online from www.brainfuse.com. Links are available on the tutoring website and within TALON.

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
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/transitioning 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.

Honors Program
The Kirkwood Community College Honors Program offers outstanding students the opportunity to push their academic boundaries, work closely with faculty in their career fields and make themselves more attractive to selective four-year schools.

Qualified students work with a faculty member to develop a one-credit-hour honors project. The nature of a student's honors project is left open to inspire creativity in both the student and the faculty member, as well as to allow for adaptation to a variety of disciplines. Program details can be found at: www.kirkwood.edu/honorsprogram.

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

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 Location.

Both chapters 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.

Study Abroad
Cedar Rapids Location
1154 Linn Hall
319-398-5579

Iowa City Location
101 Iowa City Credit Center
319-398-5579

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 about Kirkwood's Study Abroad programs visit www.kirkwood.edu/studyabroad.

Veterans Services

Cedar Rapids Main Campus
2nd Floor Kirkwood Hall
319-398-4962
www.kirkwood.edu/va

Kirkwood is committed to serving those in the community who have served or are serving in the military. Almost all programs are approved by the Department of Education for payment of Department of Veterans Affairs educational benefits. The Veterans Services Coordinator/School Certifying Official is a full-time staff person who is available to assist veterans in the application process to ensure the students' programs meet federal guidelines.

As another service to student-veterans, Kirkwood offers a Veterans Lounge, available to all veterans and their dependents. The lounge is open during regular college hours. Located in Nielsen Hall room 119, the Veterans Lounge provides a spot to check emails, quietly study or just enjoy camaraderie with fellow veterans.

Veterans Benefits

Veterans and members of the Selected Reserve may be eligible to receive educational benefits while enrolled in and pursuing an approved program of education and training. Veterans have 10-15 years from their date of active duty discharge in which to use their educational benefits, depending upon when they served.

Spouses of veterans who are rated by the VA and found to be totally and permanently disabled from a service-related disability or have died due to a service-related disability, have 10-20 years from their initial date of eligibility. Children of these veterans have until age 26.

Members of the Selected Reserve, who have not served active duty other than training, are required to remain actively drilling in order to maintain eligibility. Reservists who were ordered to active duty after September 11, 2001, in re-

sponse to war or national 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 the 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.

Library Services

Cedar Rapids Main Campus
Benton Hall

319-398-5697
Toll free: 1-866-452-8504

Iowa City Location
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 college-level research, including: finding material, evaluating sources, organizing research, and communicate findings clearly and ethically. If information is not available in the physical libraries, electronic databases, or ebook collections, it may be ordered from another library through the Inter Library Loan program.

Students working from home, or who attend class at one of the Kirkwood centers, also have access to library services. The library website provides a full array of resources and services that students may 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 students with research and can send library materials to Kirkwood centers for student use.

Information Resources and Technology

In addition to quality books, journals and DVDs to use in research, the library has many online databases of magazine, journal, news and reference articles that students can access from any campus or home computer. Students may check out a laptop for use within the library, or bring a 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. There are 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. The library is 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
2080 Cedar Hall
WritingCenter@kirkwood.edu
www.kirkwood.edu/writingcenter

Iowa City Location
134 Credit Center

The Writing Centers help students of any level of ability to improve all aspects of their writing, and at any stage of a writing project, from brainstorming ideas, organizing thoughts, developing arguments, explaining concepts and processes, to editing and proofreading.

While the Writing Centers are not a proofreading service, instructors assist students in becoming better readers of their own work and developing their writing skills. The Writing Centers are available to help students with writing tasks in any class, with personal writing, and for applying for jobs and scholarships.

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 MyHub. A qualified teacher is available to answer questions, respond to assignments, and grade exams, and 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 has been approved by Iowa to participate in the National Council for State Authorization Reciprocity Agreements. NC-SARA is a voluntary, regional approach to state oversight of postsecondary distance education.

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

Web Live Classrooms
Cedar Rapids Main Campus
319-398-4958

Kirkwood students can take courses and programs over an interactive instructional video system that links instructors to students at many different locations. Where internet is available 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. For more information go to www.kirkwood.edu/distancelearning.

FlexFORWARD

2196 Linn Hall
319-784-1566
flexforward@kirkwood.edu

www.kirkwood.edu/flexforward

FlexFORWARD is a program intended for working adults. The FlexFORWARD program allows students to move through their coursework at a pace that fits within their busy schedules. These courses are set up using Competency Based Education (CBE). FlexFORWARD's delivery format operates with the college's existing semester/term structure. Courses are delivered in seven week (fall/spring) and six week (summer) blocks that fall within Kirkwood's current 16 week fall, 16 week spring and 12 week summer semesters.

FlexFORWARD students may only register for courses in the FlexFORWARD program; they may not simultaneously take courses from Kirkwood's other delivery formats. Additionally, FlexFORWARD students can be active in two FlexFORWARD courses at a time. Each of the courses in the FlexFORWARD program will have a recommended weekly schedule to pace students to assure completion within the block. Students must meet or exceed proficiency in all competencies to earn credit for the course.

Secondary Programs

Kirkwood Center for Lifelong Learning
6301 Kirkwood.Blvd SW
Cedar Rapids, IA 52404
319-784-1510

Adult English Language Instruction

Adult Literacy and English as a Second Language (ESL) classes are offered to non-native English speakers through Kirkwood's Secondary Programs. Students in these classes gain the knowledge and linguistic skills necessary for self-sufficiency and gainful employment. Through these classes, students are connected to pathways that provide opportunities in job training programs, high school equivalency classes, or higher education. Classes are taught in Cedar Rapids, Iowa City, Coralville, and online at levels designed to meet the needs of all learners.

English Language students may be eligible to participate in job training and additional English language instructional programs through Kirkwood's IET/IELCE programming. These programs include classes and on the job training customized to meet the needs of local employers looking to expand their workforce.

High School Completion and Adult Literacy Programs

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 education.

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 course are offered at Kirkwood learning centers located in the seven-county service area.

Computers are available to provide students with coursework, enrichment activities and vocational experience. Student 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.

Students may choose to earn credits to meet the state requirement for a state high school equivalency diploma. Kirkwood also offers a high school equivalent diploma through HiSET. A company designated by the state that offers testing to gain a high school equivalent diploma. A student must pass the 5 required tests (English, Reading, Math, Science, and Social Studies) to earn their high school equivalent diploma. Kirkwood offers courses classes, independent study, instructional software, to learn and prepare for these tests.

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 currently enrolled in high school complete courses through this program to meet the requirements of their local high school. 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, HSED preparation and testing, and life skills are the instructional priorities.

Student Life and Services

Student Life
Cedar Rapids Main Campus
319-398-5578

Iowa City Location
112 Credit Center
319-887-3947
www.kirkwood.edu/studentlife

Clubs and Organizations
Kirkwood offers nearly 100 organized groups on campus. This includes nearly 40 academic based organizations as well as several general interest groups including faith based clubs, a LGBTQ group, multicultural club, several leadership clubs and more. A complete lists of groups on campus with ontact information for each advisor can be found at www.kirkwood.edu/clubs.

Events and Activities
Kirkwood offers hundreds of free events and activities for students each year. These events range from Welcome Week each August to the annual awards banquet each spring. The Student Life office sponsors comedians, musicians, bingo and several other activities throughout the school year. There are also athletic events, intramurals, performing arts events and other opportunities to experience all that Kirkwood has to offer its students. A complete schedule of events can be found at www.kirkwood.edu/events.

EagleCard
131 Nielsen 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 Michael J. Gould Recreation Center, computer labs, and athletic and entertainment events.

A student has the option of depositing money on their EagleCard accounts and using it as a debit card. The EagleCard is accepted at the EagleTech Store, the Mini Cafe in Linn Hall, and both Iowa City and main campus bookstores. Stop in or call the EagleCard office for a list of local businesses who offer discounts to EagleCard holders.

Students can obtain their EagleCard at the EagleCard office (131 Nielsen Hall, main campus), Recreation Center (main campus), or the Cedar Rapids or Iowa City bookstores.

Bookstores
Cedar Rapids Main Campus
Benton Hall
319-398-5469

Iowa City Location
1st floor Credit Center
319-887-3640

In addition to providing course materials for all Kirkwood courses, both the Cedar Rapids and Iowa City bookstores carry supplies, logo apparel and gifts. At the end of each semester, students have an opportunity to sell back previously purchased course materials.

EagleTech
Cedar Rapids Main Campus
Benton Hall
319-398-5415

EagleTech is Kirkwood's technology destination to purchase cutting-edge devices including Apple and Windows products. The highly trained technology gurus and ninja-skilled Apple technicians are available to fix your computer problems.

Bus Service

Many students ride the Cedar Rapids Transit to and from campus. Current students with a valid EagleCard can ride any Cedar Rapids Transit route for free. For more information on bus stop locations and bus routes, visit www.cedar-rapids.com/transit.

The Iowa City Location is accessible by Iowa City Transit bus service. Monthly passes are available at the Iowa City Bookstore.

Housing
Cedar Rapids Main Campus
319-398-7647

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

Kirkwood does not provide on-campus housing, but nearly 2,500 students live in privately-owned apartments near the Cedar Rapids campus. The Housing office provides information and serves as a liaison between apartment managers and student tenants.

Food Pantry
Cedar Rapids Main Campus
Cedar Hall 2092

Kirkwood Student Food Pantry offers free perishable and non-perishable grocery items to enrolled Kirkwood students. Other items available are nursing mother supplies, personal care items, and limited school supply needs. If you have any questions, please email studentfoodpantry@kirkwood.edu

Traffic and Parking

Thousands use the Kirkwood campuses each day. For everyone's protection, Public Safety 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. 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 Kirkwood has campuses located in various cities and towns, the local laws and ordinances also apply.

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, 2nd 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/explore/public-safety/traffic-parking

Public Safety

319-398-7777
www.kirkwood.edu/explore/public-safety/index

Public Safety officers patrol the main campus, respond to emergencies and other calls for service on all campuses, conduct traffic checks, walk through campus buildings, staff special events, and facilitate a variety of safety and security presentations.

Public Safety officers may ask persons for identification to determine whether they have legitimate business at the college. Public Safety officers have the authority to investigate offenses involving rule violations and to make a referral to the appropriate area of the college.

Public Safety officers do not possess arrest powers and do not carry firearms. Criminal incidents are referred to local law enforcement who have jurisdiction on campus. Public Saftey maintains a highly professional working relationship with law enforcement. Anyone who is the victim of, or witness to a crime is strongly encouraged to report the crime immediately to Public Safety and local law enforcement.

Services (offered 24 hours a day, 365 days a year at the Cedar Rapids Main Campus):

- Enforcement of college, as well as local, state, and federal laws and regulations.

- Investigations.

- Escorts on main campus.

- Unlocking and jump starting of vehicles on main campus.

- Monitoring and enforcing of traffic regulations.

- Emergency response.

- Member of Threat Assessment Team.

- Blue-light emergency phones located throughout campus.

- Safety and security presentations.

Campus Security (Clery) Act

Because safety is a community issue, Public Safety, working in partnership with students, faculty and staff, can make this community a safer place to live, work and learn. Public Safety prepares the Annual Security Report annually for students, parents, faculty and staff at Kirkwood. The report, includes campus crime statistics for the last three years as well as safety-related policies and procedures. Information is prepared in accordance with the Crime Awareness and Campus Security Act enacted by Congress in 1990. The act was amended a number of times, and renamed the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act and recently amended as part of the Violence Against Women Reauthorization Act. The Clery Act, as it is commonly called, 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 submitted to the U.S. Department of Education. The act is intended to provide accurate, complete and timely information about safety on campus so students may make informed decisions.

To obtain a printed copy of the report, contact Campus Security, 6301 Kirkwood Blvd. SW, Cedar Rapids, Iowa 52404, or call us at 319-398-7777. This report is also available at www.kirkwood.edu/explore/public-safety/clery-act

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 20 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.

    The Higher Learning Commission
    Suite 7-500
    230 South LaSalle Street
    Chicago, IL 60604-1411

The Higher Learning Commission can be reached at 800-621-7440 or www.hlcommission.org. Appropriate professional associations within their respective fields accredit individual college programs. For more information go to www.kirkwood.edu/accreditation.

Legal Basis of the College

Kirkwood was established and continues to operate as prescribed by Iowa Code section 260C.48 and Iowa Administrative Code 281-IAC 24.

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 Procedures

Introduction

Special Notice to Students

Each student is responsible for being familiar with the information appearing at www.kirkwood.edu/studenthandbook. 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 procedure with the One Stop office, according to established procedures.

Grades

Final Grade Appeal Procedure

Final Grade appeals are addressed to the Grade Appeal Committee.

Appeal Process

You may appeal a final course grade provided that:

- Conferences have been held first with the instructor assigning the grade and then the appropriate department administrator
- Appeal of a final grade can be submitted using this Final Grade Appeal Form https://cm.maxient.com/reportingform.php?KirkwoodCC&layout_id=20
- The grade appeal form must be submitted within 100 calendar days from the date of which the grade was assigned. In order to ensure a timely hearing of the appeal, students are encouraged to submit their appeal request as soon as possible after the grade is assigned.

- The appeal should contain a brief, clear and concise description of what occurred and state specifically why the student is appealing the final grade. Students should also provide additional information why the Committee should grant the appeal. Supporting documentation is allowed and may be included with the appeal.

Final Course Grade Hearing Procedure

An Ad Hoc Appeal Committee will convene to consider the appeal within ten (10) business days of the receipt of the grade appeal. The chairperson will contact all parties involved in the appeal and provide an opportunity to appear in person for the appeal hearing. The Ad Hoc Appeal Committee may render a decision based entirely on the written appeal material. It is the intention of the Committee to reach a decision concerning appeals within two (2) business days following the conclusion of the appeal hearing. The chairperson of the Committee will notify all parties involved of the Committee's decision using a letter to the student's Kirkwood email address within ten (10) business following the appeal hearing. The decision of the Committee is final and cannot be appealed within the College.

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

Within 10 business days of the hearing, all persons directly involved in the appeal will receive written notification through their Kirkwood email address by the committee chairperson of the Committee's decision about the appeal. The Committee's decision is final and cannot be appealed within the College. 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 the faculty member and department Dean, students can enroll in any course on an audit basis. Students and faculty members must agree on what portion(s) of courses the student plans to audit and the requirements the instructor has for attendance and participation. If the student fulfills the agreement for the audit, the grade of "N" will be entered on the student's academic transcripts. If the student does not fulfill the audit agreement, the

registrar, upon request from the faculty member, will withdraw the student 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. Students enrolled in FlexForward programs are excluded from audit enrollments.

Standard tuition and fees apply 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 5th business day of the semester. 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:

Course	Grade		Grade Points		Semester Credits		Total Grade Points
X	A	=	4.0	x 3		=	12
Y	B	=	3.0	x 3		=	9
Z	F	=	0.0	x 4		=	0

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 academic term 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 procedure 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 procedure. 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.

FlexForward students who experience an emergency situation such as those above should work with their success coach to determine the best course of action for their circumstance, which could include an incomplete grade or a special appeal of procedure.

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 has either not been enrolled in any program of higher education for a period of at least three consecutive years or has honorably served in the U.S. armed services for at least two years, between the final day of the term last attended and the first day of the term they returned.

The student must also have returned to Kirkwood and 1) completed a term earning at least half-time credit hours and a minimum 2.0 term GPA, and 2) have no unpaid balance for the term.

Courses with grades changed in accordance with this procedure will not satisfy graduation requirements.

Changing of grades under this procedure may only be done once and will not impact a student's satisfactory academic progress status for financial aid.

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:

A	4.00	A-	3.67		
B+	3.33	B	3.00	B-	2.67
C+	2.33	C	2.00	C-	1.67
D+	1.33	D	1.00	D-	0.67
F	0.00				
P	Passing Credit				

Q   No Credit

I   Incomplete

E   Excused Without Credit

T   Credit by Examination

N   Audit

W   Withdrew from Course

X   Course Repeated

O   Original Grade Removed

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 in good standing but unable to complete a segment of the assigned coursework due to extenuating circumstances may be assigned the grade "I" (Incomplete) by the faculty member. 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 Incomplete grade is not intended for use with a student who misses a majority of the course, even when the reasons are valid. In these instances, the student should apply for a tuition refund and retake the entire course at another time.

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

Typically courses are taken for credit only once. However, students may repeat a course to try to improve their original passing grade. No course may be repeated more than twice without the approval of the Vice President for Academic Affairs. When a course is repeated, the lower grade will be changed to an X, which carries no credit and has no effect on the grade point average. Only the best grade will be used in the GPA calculation. Because of

federal financial aid regulations, a third attempt will not contribute to a student's half-time/full-time status for financial aid eligibility.

Academic Progress

Financial Aid Satisfactory Academic Progress (SAP)

Progress is measured by the student's cumulative grade point average (GPA), percentage of credit hours earned in relation to those attempted (Pace), 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 rules.

All students must maintain a cumulative GPA of 2.0 and a cumulative Pace of 67%. 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 with one exception. Students who fail to complete any courses within their first term of enrollment (a 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 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 procedure. This is an out of pocket expense. When this is

accomplished, the student must notify the financial aid office and submit an academic plan agreement (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).

Under this procedure, the student has the right to appeal if he/she believes extenuating circumstances prevented him/her from meeting the standards. 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 agreement. 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 on an Academic Plan has a term completion rate of 75% or higher and a term GPA of 2.0, the Academic Plan status will be extended. If a student on an Academic Plan has a term completion rate of less than 75% or a term GPA of less than 2.0, or both, he/she will be placed on Suspension.

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 Procedures

Financial Aid Eligibility Requirements

To receive the maximum consideration for financial aid, students should apply as soon as the Federal Application for Federal Student Aid (FAFSA) is available. 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;
- Have completed a high school diploma or its recognized equivalent;
- Not be in default for any previous education loans or owe a grant overpayment;
- Be making satisfactory academic progress according to Kirkwood's published procedure; and
- Attend the classes in which they are enrolled.

Work-Study Hiring and Compensation

Students

a. Work-study assignments are designed to provide students with an opportunity to gain experience in their career field or to develop general work skills that are transferable.

b. Work-study students who mark "yes" on their FAFSA form and are eligible for work-study dollars, will receive an eligibility e-mail from Kirkwood Community College confirming their eligibility.
   1. Eligibility e-mails will direct students to the work-study job listing site.
   2. To be considered for a position, work-study students must contact the department by phone or e-mail for application instructions.
   3. Work-study students must be enrolled in at least one Title IV class.

Hiring Department

a. Qualified work-study students who apply for a work-study position will be interviewed either by phone or in-person.
   1. All qualified work-study candidates must be interviewed, unless the pool of work-study candidates exceeds five students. In that case only the top five work-study candidates need to be interviewed.

b. The hiring department must verify the student's work-study eligibility with the Financial Aid Office.

c. The hiring department will complete the New Hire Work-study Form indicating, the award amount they are requesting for the work-study student.

d. Work-study students will need to complete the new hire packet that includes: HR cover letter, ACA Disclosure, W4, I-9, and direct deposit.
   1. Work-study students will not have to redo their new hire paperwork if they have worked in the last six months.

2. Work-study students will not have to complete the background check forms/process as long as they are enrolled as a student.
   a. The exception is if the work-study student will be in regular contact with children under the age of 18 years of age or if required by one of our partner non-profit organizations.
   b. HR will cover the cost for the background checks for all eligible work-study students that require one.
   c. Work-study students who are no longer students, or transition to a regular part-time or full-time position will be required to complete a background check.

e. To ensure that work-study students are properly compensated for the work that they perform for the College, their job responsibilities/classification will be placed into one of three pay bands.
   1. Work-study students may be paid up to 10% above the minimum of their pay classification so long as it does not exceed the pay of regular part-time employees. To request a salary adjustment above the minimum, the employer/department must submit their reasons in writing to the Human Resources Department.
   2. Returning work-study students who return for a second fiscal year and who have been in the position for six months or longer prior to the new fiscal year, may receive an increase equal to that of the part-time staff at Kirkwood.
   3. Work-study students may not work more than 20 hours a week during the school year. Work-study students may work up to 28 hours per week during break periods and during the summer.

f. Termination of Employment

1. Hiring departments will need to notify the Financial Aid Office and the Human Resources Department when the work-study student concludes their assignment.

Financial Aid Office

a. The Financial Aid Office will manage the work-study program, providing departments with the resources needed so they can monitor their department budget.

b. When individual work-study funding levels fall near the $500 mark, the Financial Aid Office will verify with the department whether or not they plan to continue to employ the student.   If employment will continue, Financial Aid Office will:
   1. Attempt to increase the work-study award amount for the student by examining student's need as well as the department's budget.
       or
   2. Notify the department that the Human Resources department will switch the student to a regular part-time employment status.

c. Each year, the Financial Aid Office will request completed "Work-study Budget Request" forms from the departments. These are due March 1.

d. Every March/April, the Financial Aid Office will verify with existing work-study employers/departments their need for work-study students for the upcoming fiscal year.
   1. Employer/Departments should inform the Financial Aid Office by June 1 of any returning work-study students. Departments should encourage students to file the FAFSA as soon as possible.
   2. The Financial Aid Office will confirm with the employer/department the amount of the work-study funding available for their area for the upcoming fiscal year.
   3. An employer/department that is not actively looking to fill their work-study position/s and has not filled the position by November 1st will have their funding re-allocated to other departments for that fiscal year.
   4. The Financial Aid Office will continually review employer/department work-study accounts to ensure they are actively being utilized. If accounts are not being fully utilized, the Financial Aid Office will review the accounts in partnership with the employer/department and reallocate the funds based on usage.
   5. If the employer/department has not used a work-study in the previous two fiscal years, they will be removed from the list along with their funding and will have to reapply if they wish to hire a work-study student.

       a. Employers/Departments that reapply will need to provide a job description if a current one is not on file.

       b. Employers/Departments will need to complete the "Work-study Budget Request" form.

       c. Employers/Departments will need to provide the part-time G/L for their respective departments when completing the work-study form.   This G/L code will only be used in cases where the work-study will be retained by the department on a regular part-time basis and work-study funding is no longer available.

General Procedures and Student Rights

Accommodation Services for Students with Disabilities

Kirkwood Community College does not discriminate against qualified individuals with disabilities. The College provides reasonable accommodation(s), as required by law, to otherwise qualified applicants and students with disabilities in all education programs, activities, services and practices, including application procedures, admissions, course selection, the awarding of degrees, discipline and dismissal. Educational opportunities will not be denied to an otherwise qualified applicant or student because of the need to make reasonable accommodation(s) or modification(s) for the physical and mental impairment(s) of any such individual.

Definitions

A student "with a disability" is: an individual with a physical or mental impairment that substantially limits one or more of the major life activities, a person with a record of such impairment, or a person who is 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 qualified to the same extent as non-disabled individuals who are provided such services, or of any age during which it is mandatory under state law to provide such services;

- 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.

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.

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 will engage in an interactive process to determine if an accommodation can be made to admit or continue to enroll an individual with a disability to any particular program, course, service, and/or activity or to provide educational opportunities and other services. The College would not provide an accommodation to admit or continue to enroll if or 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;

- an accommodation would not enable a student or applicant to meet the essential functions or technical standards of a program, course, service and/or activity

- an accommodation would not overcome the effects of the individual's disability and meet essential functions or standards of the program, course or service;

- an accommodation would cause an undue financial or administrative hardship on the College;

- an accommodation, that even made, would still result in direct threat to the health or safety of the individual or others.

The implementation of reasonable accommodation does not eliminate or negate requirements for successful completion of a program, course, service and/or activity; the necessity for adherence to generally acceptable standards of behavior and the College's code of conduct; and the requirement to adhere 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 with an accommodation, the conditions and procedures stated in this procedure shall apply to any evaluation of the student's ability to perform the expanded, revised, or modified requirements and the Col-

lege's determination whether reasonable accommodation will be provided.

Request Process for reasonable accommodation

To request reasonable accommodation under this procedure, an applicant or student must submit an Application for Accomodations 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 will be asked to provide sufficient documentation of a disability along with the request. Sufficient documentation includes medical, psychological, and educational records which outlines the need for accommodations

In the request process, 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, such assistance will be provided upon request.

Response to applicants and students who request reasonable accommodation

The College, through the Dean of Learning Services, will review the documentation and determine eligibility 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 eligible for services and the student is registered for classes, the College will communicate that decision to the student by means of a letter or other appropriate form which assigns the student to an Accommodations Case Manager. The student is responsible for contacting their assigned Accommodations Case Manager upon receipt of the letter. The Dean of Learning Services (or designee or the case manager) will attempt to meet with the student and determine reasonable accommodation(s) within three (3) weeks.

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 designee), individually or in consultation with appropriate administrators, instructors, and medical or other personnel related to the College. When determining reasonable accommodations the Dean of Learning Services (or designee or the case manager) will engage in an interactive process with the student. The following will be considered:

- the academic and technical standards required for admission or participation in an education program or activity by the applicant or student, and

- potential reasonable accommodations to overcome any 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.

- 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 required academic, technical, and other standards.

Once reasonable accommodations have been determined, an applicant or student in consultation with their Accommodations Case Manager will develop a written accommodation plan. The Dean of Learning Services will maintain a confidential file to document the applicant or student's disability and written accommodation plan. The applicant or student will share a copy of the written accommodation plan with appropriate faculty.

Accommodations that would substantially modify the educational standards, operation, and/or mission of the College will not be offered and are, by definition, not "reasonable" accommodations. An accommodation that would be unduly costly, extensive, substantial, or disruptive or that would fundamentally alter the nature of the course, program, service, or activity offered by the College would constitute such a substantial modification.

A student or applicant can request accommodations at any time, however it is recommended to start the accommodations request process early in the semester to allow as much time as possible to develop and implement an accommodation plan which will be useful to the student. Accommodations are not retroactive and will not take effect until the written accommodation plan has been reviewed and acknowledged by the faculty. No student is assured of any particular accommodation or of the student's preferred 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.

Applicants or students who reject reasonable accommodation

An applicant or student with a disability has the right to reject an offered rea-

sonable accommodation. However, in that event, admission to or current enrollment in the program, course, activity or academic support may be denied, withdrawn, or modified as deemed appropriate by the College.

Student appeal procedure

The Educational Equity Steering Committee will hear appeals pertaining to physical accessibility only if the matter cannot be resolved after a meeting with the case manager and then with the Dean of Learning Services. The Educational Equity Steering Committee will make final determination on the appeal.

For all other appeals, the Educational Equity Steering Committee will hear appeals only after the student has had a conference with the appropriate faculty member(s) and then with the appropriate dean. If the issue cannot be resolved at these two levels, the student may appeal to the Educational Equity Steering Committee which will make a final determination on the appeal.

Appeals must be submitted to the Educational Equity Steering Committee, Attn: Dean of Learning Services, 2063 Cedar Hall, Kirkwood Community College, Cedar Rapids, IA 52404, no later than fifteen (15) working days following the decision of the appropriate dean or Dean of Learning Services, as stated in paragraphs above. Appeals should be clearly printed, or preferably typed, on standard 8 ½ x 11 inch paper and include the student's name, address, and date. It should be brief, clear and concise and state specifically what is being appealed, what relief the student is seeking, and why the Committee should grant the appeal. Supporting documentation, if any, should be submitted by the student and attached to the letter of appeal.

Within ten (10) working days of the receipt of the student appeal, the Educational Equity Steering Committee will convene to consider the appeal. The Chairperson will contact all parties involved in the appeal and determine whether they wish to appear in person for the appeal hearing or have the Educational Equity Steering Committee render a decision based entirely on the

written appeal material. It is the intention of the Educational Equity Steering 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.

The decision of the committee is final and cannot be appealed within the College.

Although students are encouraged to resolve a grievance at the College level through the Education Equity Steering Committee, a student has the right to file a grievance directly with the Office for Civil Rights, U. S. Department of Education. Visit their website for more information, www2.ed.gov/ocr.

Alcohol and Drug Procedure

Alcohol Procedure

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 Procedure

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 procedures. Both state and federal laws prohibit distribution or manufacture of controlled substances or counterfeit controlled sub-

stances. 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 procedure. The procedures for administering sanctions are described below under, "Procedures."

Procedures

Students who violate this procedure 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 procedure 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.

Kirkwood Alcohol/Drug Abuse Program

For Students: Dean of Students Office, 319-398-5540 (Support groups, substance abuse counselor, student assistance team)

For employees: Employee Assistance Program, Cedar Rapids, 319-398-6694 or 800-383-6694

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
- Unity Point (St. Luke's) Chemical Dependency Services
    Cedar Rapids, 319-363-4429

Cancellation and Delay Procedure

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 cancelled in segments of the day. The initial 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/her designated representative may close for the entire day and evening.

The College may close at varying times during the day based on the severity of the conditions and timing of the storm. It is general procedure 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 or localized power outages. In these cas-

es, a location may close while the main campus remains open. County Centers will not announce such closings 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 the Vice President, Facilities & Public Safety.

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

In order to provide necessary services to the College and The Hotel, Facilities employees may be scheduled to work during a cancellation or delay. The Vice President of Facilities & Public Safety will coordinate with division directors to determine the time and personnel necessary.

Copyright Procedure

Kirkwood Community College respects the legal right of ownership of intellectual property in all media. It is the procedure 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 shall not engage in nor allow unlawful discrimination against individuals involved in its educational programs and activities on the basis of race, creed, color, sex, sexual orientation, gender identity, national origin, religion, age, disability, or actual or potential parental, family, or marital status. If you have questions or complaints related to compliance with the procedure, please contact the Vice President of Human Resources at Kirkwood Community College, 313 Kirkwood Hall, 6301 Kirkwood Blvd. SW, Cedar Rapids, IA 52404, Telephone: 319-398-5572, Email: equity@kirkwood.edu, or the Director of the Office for Civil Rights U.S. Department of Education, Citigroup Center, 500 W Madison St., Suite 1475, Chicago, IL 60661-7204, Telephone: 312-730-1560, Fax: 312-730-1576, Email: OCR.Chicago@edu.gov.

Domestic Travel Procedure and Practice

Off-campus travel by students must be approved in advance by the appropriate dean 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 this procedure.The trip sponsor must accompany the students on the trip unless special permission is granted by the trip sponsor's Cabinet member, 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 with approval of both the trip sponsor and the appropriate dean. When a personal mode of transportation is approved, the stu-

dent(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. In the event students are authorized to travel separate from the college provide transportation, a waiver must be approved and on file a minimum of five working days prior to travel. Employees traveling must also be aware of and abide by both the "Vehicle and Equipment Use" and "Travel and Business Expenses" procedures.

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 as determined by trip sponsor, the supervising dean, and the dean of students. Such decisions will be made on a case by case basis. Additional travel expense may be assessed to the student.

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), and destination. Also to be included are specific details regarding the mode of transportation; name, address and phone number of all over-

night accommodations; names, k-numbers and contact information of participants; and emergency contact information for all participants including employees. The notification form will be submitted online at least five working days prior to the departure date. Travel will be approved by the trip sponsor's supervisor after all necessary information and forms have been submitted.

2. A travel contract must be completed online prior to departure by each student.

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

Freedom of Expression

The primary function of an institution of higher education is the discovery, improvement, transmission, and dissemination of knowledge by means of research, teaching, discussion, and debate. To fulfill this function, the institution must strive to ensure the fullest degree of intellectual freedom and free expression allowed under the First Amendment to the Constitution of the United States. This policy is made and published by the College to prohibit intellectual restrictions and penalties based on protected speech, including political speech, to the fullest extent of the First Amendment of the United States Constitution.

It is not the proper role of an institution of higher education to shield individuals from speech protected by the First Amendment to the Constitution of the United States, which may include ideas and opinions the individual finds unwelcome, disagreeable, or even offensive.

It is the proper role of an institution of higher education to encourage diversity of thoughts, ideas, and opinions and to encourage, within the bounds of the First Amendment to the Constitution of the United States, the peaceful, respectful, and safe exercise of First Amendment rights.

Students and faculty have the freedom to discuss any problem that presents itself, assemble, and engage in spontaneous expressive activity on campus, within the bounds of established principles of the First Amendment to the Constitution of the United States, and subject to reasonable time, place, and manner restrictions that are consistent with established First Amendment principles.

The outdoor areas of campus of an institution of higher education are public forums, open on the same terms to any invited speaker subject to reasonable time, place, and manner restrictions that are consistent with established principles of the First Amendment to the Constitution of the United States.

The outdoor areas of campus, which for this policy means the generally accessible outside areas of campus where the campus community are commonly allowed, such as grassy areas, walkways, or other similar common areas. Outdoor areas of campus do not include areas outside health care facilities, veterinary medicine facilities, areas where livestock or animals are kept, facilities or outdoor areas used by Kirkwood Community College athletic programs or teams, areas where there are business operations such as a hotel, or other outdoor areas where access is restricted to a majority of the campus community.

Annual training shall be provided to the College's students, faculty, and staff on free speech and First Amendment protections.

PROTECTED ACTIVITIES

A member of the campus community, which for this policy shall include students, administrators, faculty, staff, and/or guests invited by students, administrators, faculty or staff, shall be freely permitted to engage in noncommercial expressive activity in outdoor areas of campus, subject to reasonable time, place, and manner restrictions, and as long as the member's conduct is not unlawful, does not impede others' access to a facility or use of walkways, and does not disrupt the functioning of Kirkwood Community College.

Kirkwood may designate other areas of campus available for use by the campus community. All access to designated areas will be granted on a viewpoint-neutral basis.

Noncommercial expressive protected activities include but are not limited to any lawful oral or written means by which members of the campus community may communicate ideas, including but limited to all forms of peaceful assembly, protests, speeches including invited speakers, distribution of literature, circulating petitions, and publishing, including publishing or streaming on an internet site, audio or video recorded in outdoor areas of campus.

Protected activities shall also include the right of student expression in a counter demonstration held in an outdoor area of campus as long as the conduct at the counter demonstration is not unlawful, does not materially and substantially prohibit the free expression of others, or impede other's access to a facility or use of walkways.

If any faculty member of Kirkwood is found to have knowingly restricted the protected speech of a student, or otherwise penalizes a student for protected speech or activities, under the Student Conduct Code or other applicable policies or procedures for student conduct, the faculty member is subject to discipline, up to and including termination under the applicable faculty policies, procedures, and Iowa law based on the totality of the facts.

In all instances, faculty and staff (including extracurricular coaches) may support a student's First Amendment rights without fear of discipline by the College.

NON PROTECTED ACTIVITIES

Nothing shall prevent Kirkwood Community College from prohibiting, limiting, or restricting expression and/or expressive activity that is not otherwise protected by the Constitution of the United States. Non protected activities include, but are not limited to the following:

- A threat of serious harm and expression directed or likely directed

to provoke imminent unlawful actions; and

- Harassment, including but not limited to expression which is so severe or pervasive and subjectively and objectively offensive that the expression unreasonably interferes with an individual's access to educational opportunities or benefits provided by this Community College;
- Violence;
- Defamation, including libel and slander;
- Obscenity; or
- Inciting others to commit crimes or engage in unlawful conduct.
- Disruption to the normal operations of the college

STUDENT ORGANIZATIONS

Kirkwood Community College will not deny benefits or privileges available to student organizations based on the viewpoint or expression of the viewpoint of a student organization or its members protected by the First Amendment to the Constitution of the United States. For purposes of this policy, benefits means recognition, registration, use of facilities for meetings or speaking purposes, use of channels of communication, and access to funding sources otherwise available to other student groups.

In addition, Kirkwood Community College shall not deny any benefits or privileges to a student organization based on the organization's requirement that its leaders agree to and support the organization's beliefs as interpreted and applied by the organization, and to further the organization's mission. For purposes of this policy, student organization means a group officially recognized or registered by Kirkwood Community College or a group seeking official recognition or registration comprised of students who are admitted and in attendance at Kirkwood who receive or are seeking to receive benefits or privileges.

PUBLIC FORUMS ON CAMPUS-FREEDOM OF ASSOCIATION

The outdoor areas of campus are deemed public forums. Kirkwood may

maintain and enforce clear, published, reasonable viewpoint-neutral time, place, and manner restrictions that are narrowly tailored in furtherance of a significant institutional interest, but shall allow members of the campus to engage in spontaneous expressive activity and to distribute literature. If Kirkwood places restrictions, it shall provide ample alternative means of expression.

Except as provided in this policy, and subject to the reasonable time, place, and manner restrictions, Kirkwood shall not designate any area of campus a free speech zone or otherwise create policies restricting expressive activities to a particular outdoor area of campus.

Nothing in this policy shall be construed to grant individuals the right to engage in conduct that intentionally, materially, and substantially disrupts the expressive activity of a person or student organization if Kirkwood has reserved space in an outdoor area of campus for the activity in accordance with this policy.

COMPLAINT PROCEDURE

If a member of the campus community believes he or she has been aggrieved by a violation of this policy, the member shall follow the grievance procedures as outlined for this policy.

In the event the matter is not resolved through the appropriate grievance process, or otherwise as provided under Iowa law, the aggrieved member of the campus community may file a complaint (https://www.kirkwood.edu/freedom-of-expression-complaint-form) with the governing body (Kirkwood Community College Board of Trustees) not later than one year after the day of the alleged policy violation.

Retaliation against any member of the campus community who files such a complaint is prohibited, and any founded instance of founded retaliation is subject to discipline or other sanctions.

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 assumes no responsibility or liability for children, or for any accidents or injuries to children.

Preferred Name

Procedures

Prospective students and employees may provide a preferred first name on the admissions application or employ-

ment application provided the applicant provides social security number or other unique identifier.

Current students and employees may declare a preferred first name on MyHub.

Alumni who are not current students or employees may declare a preferred first name in the Kirkwood Foundation Office.

Preferred Name Display

Kirkwood will attempt to use the preferred name wherever possible. This list provides examples of places where preferred and legal names will be used. These lists are not exhaustive and are subject to change.

Preferred Name
- MyHub
- Talon
- Class Rosters
- Kirkwood email
- EagleCard
- Degree Audit Report
- Advisee Lists
- Library
- Diplomas
- Employee training, years of service, and excellence awards

Legal Name will be used (where required by law or with partner institutions)
- Financial aid documents and forms
- Student accounts and billing notices
- Clinical Placements
- 1098-T, 1099, and W-2 tax forms
- Applications for employment and civil service testing materials
- Employment, payroll records and benefits documents
- Responses to enrollment and degree verification requests
- Student health records
- Requisitions, direct payment vouchers, and travel documents
- Background check

Legal Name and Preferred Name will be used
- Transcripts
- Discipline records

Questions about this procedure may be referred to the Registrar.

Sexual Harassment Procedure

I. The Preamble

In accordance with Title IX of the Education Amendments Act of 1972, Kirkwood Community College prohibits sex discrimination, including sexual harassment, as defined in Section II. The College will utilize these procedures to respond to claims of sexual harassment and will not proceed under any other College policy or procedure if doing so would interfere with any right or privilege provided to a party under Title IX. If the College determines that a report or complaint does not constitute a violation of Title IX, it may still proceed to investigate or respond to that report or complaint under any other applicable College policy or procedure.

II. Definitions

A. Sexual harassment means unwelcome behavior (verbal, written, physical) that is directed at someone because of that person's sex or gender, and that meets any of the following definitions:

1. **"Quid Pro Quo" Harassment.** A College employee, agent, or other individual under the College's control or authority 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 or employee rejects sexual advances).

2. **Hostile Educational/Work Environment.** Unwelcome conduct that creates a hostile, intimidating or demeaning environment that is sufficiently severe, pervasive, and objectively offensive that it effectively denies a person equal access to participation in the College's educational program or activity. Examples can include persistent and unwelcome efforts to develop a sexual relationship; bully-

ing/cyber-bullying of a sexual nature or for a sexual purpose; sexual exploitation (defined below); 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.

3. **Sexual Assault.** An offense that meets the definition any one of the following offenses:
   - Rape: the penetration, no matter how slight, of the vagina or anus, with any body part or object, or oral penetration by a sex organ of another person without consent of the victim;
   - Fondling: the touching of the private body parts of another person for the purpose of sexual gratification without consent of the victim;
   - Incest: sexual intercourse between persons who are related to each other within the degrees wherein marriage is prohibited by law; or
   - Statutory rape: sexual intercourse with a person who is under the statutory age of consent.

4. **Stalking.** 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 when:
   - 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
   - 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.

5. **Dating Violence.** 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:
   - The length of the relationship.
   - The type of relationship.
   - The frequency of interaction between the persons involved in the relationship.

6. **Domestic Violence.** Any action that may constitute a felony or misdemeanor crime of violence committed:
   - By a current or former spouse or intimate partner of the victim;
   - By a person with whom the victim shares a child in common;
   - By a person who is cohabiting with, or has cohabited with, the victim as a spouse or intimate partner;
   - By a person similarly situated to a spouse of the victim under the domestic or family violence laws of the State of Iowa; or
   - By any other person against an adult or youth victim who is protected from that person's acts under the domestic or family violence laws of the State of Iowa.

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.

B. Consent and Incapacitation. Sexual assault, as defined above, 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.
- Being intoxicated by drugs or alcohol oneself does not diminish the responsibility to obtain consent from the other party.

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.

- 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.

C. Sexual exploitation involves taking sexual advantage of another person, even though the behavior might not constitute sexual assault, where the conduct creates a hostile educational or employment environment for the target of the conduct or otherwise falls within the definition of "sexual harassment" above. 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.

D. Employees include all full and part time employees working for the College in any capacity.

E. 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.

F. Complainant means any person who alleges that they have been subjected to sexual harassment as defined by these procedures. At the time of filing a

formal complaint, a complainant must be participating in or attempting to participate in the College's programs or activities.

G. Respondent means any person who has been reported to be the perpetrator of conduct that could constitute sexual harassment under these procedures, and over whom the College is able to exercise substantial control.

H. Investigators mean the individuals designated by the College to conduct investigations of alleged sexual misconduct. Under no circumstances will an Investigator serve as a member of the Sexual Misconduct Board or Appeal Decision-Maker for the same case.

I. Sexual Misconduct Board means the group of faculty, staff, and administrators appointed by the College to hear complaints of sexual misconduct and act as the initial decision-makers, and who are trained to do so. No member of the Sexual Misconduct Board shall be the Title IX Coordinator, Title IX Investigator, or Appeal Decision-Maker.

III. Scope

This procedure applies to all persons participating in the programs or activities of Kirkwood Community College, including students and employees of the College, as defined in Section II, and in particular students or employees who:

- Are victims of any form of sexual harassment (as defined in Section II), by any other person (student, employee, or others outside the College community).
- Are accused of engaging in behavior prohibited by these procedures.

The College has jurisdiction over locations, events or circumstances over which it substantially controls the Respondent and the context in which the harassment occurs, including any building owned or controlled by a student organization that is officially recognized by the College. The College's jurisdiction is limited to conduct against a person that occurs in the United States.

Any person may file a complaint alleging sexual misconduct against a student or employee of the College. 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 conduct occurring outside the College's program or activity, 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 or employee or constitutes a sufficient risk to the College community to proceed under these procedures.

IV. Confidentiality

Kirkwood is committed to creating an environment that encourages individuals to come forward if they have experienced any form of sexual misconduct. The College will work to safeguard the identities and privacy of individuals who seek help or who report sexual misconduct. However, it is important that individuals 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.

The College will keep confidential the identity of any individual who has made a report or complaint of sex discrimination or sexual harassment, or has been identified as the perpetrator or respondent to any such report or complaint, or is a witness to any complaint or investigation, **except** as required to carry out the purposes of these procedures (including the conduct of any investigation, hearing, or judicial proceeding), applicable law, or as permitted by the Family Educational Rights and Privacy Act ("FERPA"), 20 U.S.C. § 1232g.

Under Iowa law, communications with some individuals are confidential. Anyone who wants to maintain confidentiality should always confirm whether confidentiality applies to the communication before they make the communication. Generally, confidentiality applies when an individual 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 from Kirkwood Counseling Services)
- Licensed Healthcare provider
- Personal attorney representing the complainant, respondent, and/or other participants
- 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 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, where required by the Clery Act. The notice would not contain any information identifying the individual who brought the complaint.

V. Reporting Sexual Misconduct

Contacting Police or Kirkwood Public Safety does not mean a Complainant must pursue charges. Kirkwood Public Safety and local law enforcement can advise individuals 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 Complainant may proceed under these procedures whether or not they elect 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, 2nd Floor Kirkwood Hall, 319-398-5540 or Public Safety, 319-389-1774. Other reporting options include:

- Submitting a Silent Witness Report: https://www.kirkwood.edu/site/index.php?p=16760
- Contacting Title IX Coordinator, Jon Buse, Vice President for Student Services, at:

Jon.Buse@kirkwood.edu

319-398-4977

351 Benton Hall

- Contacting a Deputy Title IX Coordinator:
  a. Bobbi Miller, Associate Dean of Students, 319-398-7798, bobbi.miller@kirkwood.edu
  b. Andrew MacPherson, Associate Vice President, Facilities/Security 319-398-5669, andrew.macpherson@kirkwood.edu
  c. Melissa Payne, Executive Dean of Students, 319-398-5584, melissa.payne@kirkwood.edu
  d. Wes Fowler, Vice President of Human Resources, 319-398-7797, wes.fowler@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. Retaliation Prohibited

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 is strictly prohibited. Retaliation includes threats, coercion, discrimination, intimidation, reprisals, and/or adverse actions related to employment or education.

These procedures' anti-retaliation protections do not apply to any individual who makes a materially false statement in bad faith in the course of any complaint, investigation, hearing, or other proceeding under these procedures. However, a determination that an individual made a materially false statement in bad faith must be supported by some evidence other than the determination of whether the Respondent violated these procedures alone.

E. Time Frames for Reporting and Response

The College strongly encourages prompt reporting of complaints and information. While there is no time limit in invoking these procedures 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 will not be able to investigate a formal complaint against an individual who is no longer affiliated with the College. Under those circumstances, the College will still consider whether it can offer supportive measures to the Complainant or proceed under another applicable College policy, procedure, handbook provision, or rule.

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, as appropriate, alter or extend time frames for good cause, with notice to the parties. 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 harassment occurring in the College's program or activity, as defined in Section II above, the Title IX Coordinator or designee will first schedule a meeting with the Complainant to provide the Complainant with information about these procedures to discuss supportive measures available to the Complainant with or without the filing of a formal complaint, and to explain the process for filing a formal complaint.

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 a complainant who is a student. Employees who would like assistance during a Title IX investigation should contact Kirkwood Human Resources 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 College also will offer the same resource to Respondents.

At the initial intake meeting with the Complainant, the Title IX Coordinator 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. Formal Complaint

If the Complainant wishes to proceed with either formal or informal resolution, a written document must be filed by the Complainant or signed by the Title IX coordinator alleging harassment against a respondent. Where the Title IX Coordinator signs a formal complaint, the Title IX Coordinator is not the complainant or otherwise a party to a complaint proceeding under these procedures.

B. Formal Resolution

A Complainant may elect to pursue a formal resolution, which involves a hearing before the Sexual Misconduct Board,which is described more specifically in this section.

1. Equitable Treatment

As set forth in more detail below, the College will treat Compainants and Respondents equitably throughout the formal resolution process.

2. Consolidation of Complaints

The College may consolidate formal complaints of sexual harassment against more than one respondent, or by more than one complainant against one or more respondents, or by one party against another party, where the allegations arise out of the same facts or circumstances.

3. Required Notices

Notice of Investigation. If a Complainant elects to pursue a formal complaint, the Title IX Coordinator or designee will provide a written Notice of Investigation simultaneously to both parties notifying the parties of:
- the identities of the parties involved in the incident;
- the conduct alleged;
- the date and location of the incident;
- Respondent's entitlement to a presumption of innocence;
- The parties' rights to have an advisor of their choice at the party's expense, who may be an attorney; and
- The parties' rights to review and comment on investigative evidence.

The written notice of investigation shall notify the parties that making false statements or knowingly submitting false information during the grievance process is prohibited by the College and may constitute an independent basis for disciplinary sanctions against any student or employee, up to and including suspension or expulsion of a student or termination of an employee's employment.

The notice shall be provided prior to the initial interview of any party.

If, during the course of investigation, the College determines that additional allegations will be investigated as part of the pending complaint, the Title IX Coordinator or designee will provide written notice of the additional allegations to any identified Complainant(s) or Respondent(s).

Notice of Interviews, Hearings, or Other Meetings. Parties will be provided written notice of the date, time, location, participants, and purpose of any interview, hearing, or meeting with sufficient time for the party to prepare.

4. Dismissal

The College shall dismiss any formal complaint made under these procedures if at any time it determines that it lacks jurisdiction under Title IX because the conduct alleged in the formal complaint:
- Would not constitute sexual harassment as defined in Section II of these procedures even if proved;
- Did not occur in the College's education program or activity; or
- Did not occur against a person in the United States.

The College, in its sole discretion, may dismiss any formal complaint under these procedures if at any time:
- The Complainant notifies the Title IX Coordinator in writing that the Complainant would like to withdraw the formal complaint or any allegations;
- The Respondent is no longer enrolled or employed by the College; or
- Specific circumstances exist that prevent the College from gathering evidence sufficient to reach a determination as to the formal complaint or allegations. Examples include, but are not limited to, a significant passage of time from the date of the allegation(s) in the complaint to the date the complaint is filed that makes investigation impracticable or where the Complainant has stopped participating in the process.

Dismissal of a complaint from proceeding under these procedures does not preclude the College from offering supportive measures to any party or from proceeding under any other applicable code of conduct, policy, or procedures applicable to students and/or employees of the College.

Upon dismissal of any formal complaint under this section, written notice of this dismissal and the reason(s) therefore will be provided simultaneously to Complainant and Respondent.

5. Investigation

The College shall provide an investigator who is impartial and unbiased and does not have a conflict of interest in the present case to serve as the Investigator of a formal complaint filed under these procedures. 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 Respondent, and each third-party witness; gather evidence relevant to the complaint, including site visits or photographs at each relevant site where appropriate; and where applicable, coordinate with law enforcement agencies to collect and preserve relevant evidence.

The burden of proof and the burden of gathering sufficient evidence to reach a determination of responsibility rests with the College and not with the parties. Both parties will have an equal opportunity to present witnesses, including fact and expert witnesses, and

other evidence (both inculpatory and exculpatory) to the Investigator. Neither party will be restricted in their ability to discuss the allegations or to gather and present relevant evidence; provided, however, that such communications shall not constitute harassment of or retaliation against any party.

The Investigator will evaluate all relevant evidence, both inculpatory and exculpatory, and will not make credibility determinations based solely on a person's status as complainant, respondent or witness.

The Investigator will only access, consider, disclose, or otherwise use a party's treatment records made or maintained by a health care provider, or other records protected under a legally recognized privilege, if the party provides the Investigator with voluntary, written consent to do so.

Prior to completion of the Investigative Report, the Investigator will provide each party and the party's advisor, if any, copies of any evidence obtained by the Investigator that is directly related to the allegations in the complaint. Both parties will have ten (10) calendar days to submit a written response to the evidence to the Investigator. The College may require both parties and their advisors to enter into a written agreement prohibiting the use or dissemination of evidence for any purpose other than those directly related to the parties' participation in the Title IX grievance process.

6. Investigative Report

After conducting the investigation, the investigator(s) will complete an investigative report that includes:
- Summaries of interviews with the Complainant, the Respondent, 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 statement of all undisputed material facts; and
- A statement of all disputed material facts, including a summary of the evidence supporting each position.

The investigative report will be distributed, concurrently, to both of the parties and the Title IX Coordinator at least ten (10) calendar days prior to a hearing to determine responsibility under these procedures.

7. Complainant Changes Election to Informal Resolution or Respondent Elects to Accept Responsibility.

After reviewing the investigative report but prior to any determination of responsibility, the Complainant may decide to elect Informal Resolution instead of formal resolution, by making such a request to the Title IX Coordinator or designee prior to the hearing date. Informal Resolution will be conducted in accordance with Section C, below.

At any point prior to the hearing, the Respondent may elect to admit responsibility for the alleged sexual misconduct. In such cases where the Respondent voluntarily admits responsibility prior, the Title IX Coordinator or designee will propose a resolution to the complaint and a sanction. If both the Complainant and the Respondent agree to the proposed resolution and sanction, the complaint is resolved without a hearing and without any further rights of appeal by either party. If either the Complainant or the Respondent objects to the proposed sanction, a hearing before the Sexual Misconduct Board will be convened for the sole purpose of determining an appropriate sanction based on the conduct to which Respondent admitted, and in these cases, the decision of the Board may be appealed pursuant to paragraph 15, "Appeals," below. For purposes of this sanction hearing, all of the other provisions of these procedures relating to the imposition of a sanction for Sexual Misconduct will apply.

8. Advisors

The Complainant and the Respondent 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 party's expense.

However, advisors are not permitted to speak or to participate directly in the process, with the exception of conducting cross-examination during any hearing before the Sexual Misconduct Board. Parties 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.

9. Notice of Hearing and Pre-Hearing Meetings.

If a hearing is scheduled, the Title IX Coordinator or designee will provide written notice to both parties of the time, date, location, anticipated participants, and purpose of the hearing with sufficient time for the parties to prepare for the hearing. In addition, the Title IX Coordinator or designee will schedule separate meetings with the Complainant and the Respondent to review the hearing procedures.

10. 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.

Hearings will be conducted in private.

The Sexual Misconduct Board chairperson and three members of the Sexual Misconduct Board will be appointed by the Dean of Students to serve on the Sexual Misconduct Board.

The Sexual Misconduct Board chairperson may be a college employee or someone retained by the College, such as an attorney, mental health professional, or another person trained to conduct sexual misconduct hearings.

The complainant, respondent, and their advisors, if any, will be allowed to attend the entire portion of the hearing at which information is received (excluding deliberations). Admission of any other person to the hearing will be at the discretion of the chairperson of the Board.

The complainant and respondent have the right to challenge any member of the Sexual Misconduct 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 the case. If the challenge is upheld, the Dean of Students or designee will select another Sexual Misconduct Committee member for the Sexual Misconduct Board.

The complainant, the respondent, and the Sexual Misconduct Board may arrange for witnesses to present pertinent information to the 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 the respondent at least two (2) business days prior to the hearing. Witnesses will provide information to and answer questions from the Board and will be subject to cross-examination.

The Sexual Misconduct Board will not require, allow, rely upon, or otherwise use questions or evidence that constitutes or seek disclosure of, information protected under a legally recognized privilege, unless the person holding such privilege has waived the privilege.

Each party may be represented during the live hearing by an advisor of their choice at their own expense, who may be an attorney. If a party does not have an advisor, an advisor of the College's choice will be provided to conduct cross-examination.

Each party's advisor shall be permitted to conduct cross-examination of the other party and any witnesses, including all relevant questions and follow-up questions, including those challenging the credibility of the party or witness. Cross-examination will be conducted directly, orally, and in real time during the hearing. Under no circumstances will any party be allowed to conduct cross-examination personally.

The Chair will determine the relevance of any cross-examination question before it is answered. Questions or evidence about a Complainant's sexual predisposition or prior sexual behavior are not relevant and shall be excluded, other than to establish that someone

other than the Respondent committed the conduct alleged by Complainant, or if the questions concern specific incidents between Complainant and Respondent and are offered to provide consent.

If any party or witness does not submit to cross-examination during the hearing, the Sexual Misconduct Board will not rely on any statement of that party or witness in reaching a determination of responsibility. The Sexual Misconduct Board will not draw an inference about responsibility based solely on a party's or witness's absence from the hearing or refusal to answer cross-examination or other questions.

All procedural questions, including the decision to accept evidence and/or statements, will be made by the Sexual Misconduct Board Chair, in their sole discretion.

A recording (audio or video) or written transcript will be made of the hearing and will be available to the parties for inspection and review.

At the request of either party, the hearing will be conducted with parties in separate rooms with technology enabling the decision-makers and parties to simultaneously see and hear the witness answering questions.

After the portion of the hearing concludes in which all pertinent information has been received, the Sexual Misconduct Board, excluding the Board Chairperson, will determine by majority vote whether the Respondent has violated each section of these procedures for which the person is charged with violating.

11. Standard of Proof

The determination of whether or not a violation of these procedures occurred will be made on the basis of whether it is more likely than not that the Respondent violated these procedures. 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 these procedures and any other applicable College policies, procedures, rules, or handbook

provisions in order to ensure as fair a hearing as possible for all parties.

12. Sanction

Sanctions and remedies will be determined on a case-by-case basis by the Sexual Misconduct Board. Sanctions may range from a written warning to suspension or expulsion of a student or termination of an employee's employment with the College. The Sexual Misconduct Board is required to consider the suspension or expulsion of any student or the recommendation to terminate any employee's employment, if that individual is found responsible for sexual assault; however, the Sexual Misconduct Board may impose or recommend, where applicable, any sanction that it finds to be fair and proportionate to the violation. Students will be sanctioned in accordance with Article IV, B, of the Student Conduct Code. Student sanctions may include, but are not limited to: Warning, probation, deferred suspension, suspension, withdrawal of an offer of admission, revocation or withholding of a degree, loss of privileges, delayed registration, and other discretionary sanctions, such as work assignments, service, mental health or substance abuse evaluation and/or treatment.

Employee discipline following a determination by the Sexual Misconduct Board of a violation under this procedure will be determined in compliance with applicable law and Kirkwood policies and procedures, up to and including termination of employment.

13. Written Decision

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.

Following the conclusion of the hearing, Board Chair will notify the Title IX Coordinator or designee of the decision and any sanctions imposed or recommended in writing within five (5) business days of completion of the hearing. Within ten (10) business days of completing the hearing, the Sexual Misconduct Board Chair will issue a written determination regarding responsibility, which shall be determined by a pre-

ponderance of the evidence. The written determination will include:
- Identification of the allegations;
- A description of the procedural steps taken from the receipt of the formal complaint through the determination, including notifications to the parties, interviews, site visits, methods used to gather other evidence, and hearings held;
- Findings of fact;
- Conclusions regarding the application of the College's code of conduct to the facts;
- A statement of and rationale for the decision-maker(s) determination regarding responsibility for each allegation;
- A statement of and rationale for any disciplinary sanctions that will be imposed on Respondent, if applicable;
- A statement of and rationale for any remedies the College will provide to restore or preserve Complainant's access to the College's program or activity, if applicable; and
- A statement of the College's appeal procedures.

The Title IX Coordinator or designee will provide the written determination to the parties simultaneously. The decision shall be final five (5) business days after delivery of the written determination, if no appeal is filed.

14. Appeals

Within five (5) business days of delivery of the written decision to them, either party may appeal the dismissal of a formal complaint, or the Board's decision and/or the sanction imposed to the President of the College or designee. Such appeals will be in writing and will be delivered to the Title IX Coordinator or designee. Appeals must allege one of the following:
- A procedural irregularity that affected the outcome of the matter;
- New evidence that was not reasonably available at the time of the determination

regarding dismissal or responsibility was made, that could affect the outcome of the matter; or
- The Title IX Coordinator, Investigator(s), or Hearing Panel had a conflict of interest or bias for or against complainants or respondents generally or the individual complainant or respondent that affected the outcome of the matter.

The Title IX Coordinator or designee will notify both parties in writing if an appeal is received alleging one of the bases for appeal above. Both parties will be given an opportunity to submit a written statement in support of, or challenging, the written determination. Written statements must be submitted to the President or designee within five (5) business days of receiving notification that an appeal was filed.

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.

The President or designee may affirm, reverse, or modify the decision regarding the violation and/or sanctions imposed. A written decision will be issued simultaneously to the parties describing the result of the appeal and the rationale therefor. The written appeal decision of the President or designee is the final decision of the College, and no further appeals are permitted under these procedures.

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

C. Informal Resolution

Upon filing of a formal complaint, a Complainant may request a less formal proceeding known as "Informal Resolution." Although less formal than formal resolution, Informal Resolution is not mediation. Informal resolution is available to the parties any time prior to a

determination of responsibility made by the Sexual Misconduct Board.

1. Election of Informal Resolution

The 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. Informal Resolution will not be available to resolve allegations involving an employee sexually harassing a student.

The College will not require the parties to participate in the Informal Resolution process as a condition of enrollment, continuing enrollment, or employment or continuing employment, or of any other right conferred by the College.

The Title IX Coordinator will provide the parties with a written notice setting for the allegations, the requirements of the informal resolution process set forth in these procedures, the right of any party to withdraw from the informal process and proceed with the formal grievance process in Section B, above, at any time prior to agreeing to a resolution; and any consequences resulting from the participation in the informal process, including the records that will be maintained or could be shared by the College. Both parties must voluntarily consent in writing to participation in the informal resolution process.

2. Information Gathering and Resolution Process

Upon receipt of voluntary written consent from both parties, the Title IX Coordinator will assign the informal resolution to an Investigator. The Investigator will consult separately with the Complainant and Respondent 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 supportive measures to protect the educational and/or work environment of the parties. Supportive measures must be individualized and designed to protect the safety of all parties and deter sexual harassment. Supportive measures are non-disciplinary and no inference of responsibility under these procedures should be drawn from the implementa-

tion of any supportive measures by the Title IX Coordinator.

The Title IX Coordinator or the Investigator will attempt to aid the parties in finding a mutually acceptable resolution to the complaint. This resolution will be reduced to writing and must be signed by the Complainant and the Respondent. Once both parties have voluntarily signed the written resolution, the written resolution becomes final and neither party can initiate the formal grievance process to resolve the allegations in the formal complaint. The written resolution is not subject to appeal.

3. Advisors

The Complainant and the Respondent 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. Election of Formal Resolution

Either party may, at any time prior to signing an informal resolution agreement, elect to end the informal resolution process and initiate formal resolution instead. In such cases, statements or disclosures made by the parties in the course of the informal resolution will not be considered in the subsequent formal resolution unless the party who made the statement or disclosure gives written consent to its use during the formal resolution process. In the event that either party elects to move forward with formal resolution, a new investigator will be designated who was not involved in the informal resolution process.

5. 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 Title IX Coordinator or designee will inform the Complainant that the College's ability to respond may be limited. The Title IX Coordinator 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 Respondent, and
- The Respondent's right to receive information about the allegations, including the name of the complainant.

The Title IX Coordinator will only initiate a formal complaint against the wishes of the Complainant where doing so is not clearly unreasonable based on known circumstances, based on the potential impact to the College community if the allegations were true.

The Title IX Coordinator or designee will inform the Complainant if the College cannot ensure confidentiality. Even if the College cannot take disciplinary action against the Respondent 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 mutual "no contact" order to both parties, and/or take other reasonably necessary supportive measures, including the Supportive Measures described in Section E, below, to promote a safe learning environment for the Complainant and/or the entire College community.

E. Supportive Measures

The Title IX Coordinator may institute supportive measures to protect the safety of the college community, to enable parties and witnesses to continue their studies or work, and to ensure the integrity of an investigation. Supportive measures will be individualized, provided without fee or charge to the student(s) or employee(s), and are non-disciplinary in nature. Complain-

ant's preferences will be considered when instituting supportive measures.

The College may make a non-disciplinary interim suspension of a student Respondent on an emergency basis. Prior to suspending a student, the College will conduct an individualized safety and risk analysis and determine whether there is an immediate threat to the physical health or safety of any individual. Any student so suspended will be provided with notice and an opportunity to challenge this action immediately following the removal.

The College may, in its discretion, place an employee Respondent on administrative leave pending the outcome of a grievance process.

The Dean of Students Office, Office of Human Resources, and/or Campus Security may also take additional interim supportive actions, as appropriate, including but not limited to:

- Offering counseling to any party;
- Extension of deadlines or other course-related adjustments;
- Modifying class or work schedules;
- Changing work or housing locations;
- Addressing other academic concerns (e.g., absences, assignments, grades, leaves of absence, withdrawal);
- Mutual restriction on contact between the parties;
- Safety planning, including campus escort services and increased security or monitoring of certain areas of campus;
- Leaves of absence; or
- Education/training.

VII. Available Resources and Services

There are campus and community services available to individuals who are subjected to sexual misconduct, regardless of whether an individual chooses to report a violation of these procedures to the College or local law enforcement. The College strongly encourages individuals subjected to sexual misconduct to seek assistance to care for themselves emotionally and physically through confidential crisis

intervention, health care, and counseling. Individuals should keep in mind that medical examinations are time-sensitive and are critical in preserving evidence of sexual assault.

A. Confidential Advocacy and Support

Riverview Center (Cedar Rapids)

Riverview Center provides trained advocates to assist victims of sexual assault. Advocates can assist individuals with medical and legal advocacy, counseling, and case management. Advocates can speak with individuals 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 individual'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 provide 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

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

Employee Assistance Program (Employees Only)

Employees can make use of the Employee Assistance Program for confidential counseling services.

Mercy Employee Assistance Program: 1-319-398-6694, or 1-800-383-6694

Campus Health

Students can meet confidentially with a health care provider. Contact information:
www.kirkwood.edu/campushealth.

B. Additional Resources

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. The Title IX Coordinator is responsible for ensuring a non-discriminatory campus environment that is free from harassment. Individuals may obtain information from the Title IX Coordinator about the College's grievance process and may file a formal complaint with the Title IX Coordinator. Questions or concerns may be directed to (319) 398-4977 or 351 Benton Hall, Kirkwood Community College.

Deputy Title IX Coordinators are:

- Bobbi Miller, Associate Dean of Students, 319-398-7798
- Andrew MacPherson, Associate Vice President of Facilities and Security, 319-398-5669
- Melissa Payne, Executive Dean of Students, 319-398-5584
- Wes Fowler, Vice President of Human Resources, 319-398-7797

2. Public Safety: (319) 389-1774, www.kirkwood.edu/security

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

3. Human Resources Office: 313 Kirkwood Hall, (319) 398-5572

Staff can assist an employee in filing a report or, if the employee is not ready to file a report, the staff can work with the person to address concerns over work assignments or schedules, leaves of absence, or other employment concerns. Staff can also assist the employee in notifying Campus Security or local law enforcement, if requested by the employee and provide referrals to employees to resources such as counseling or a confidential advocate.

4. Dean of Students Office: 2nd Floor Kirkwood Hall, (319) 398-5540

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 the person 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 provide referrals to students to resources such as counseling or a confidential advocate.

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 respond to sexual misconduct only if the College is made aware of the behavior. Therefore, if a College employee becomes aware of a complaint or other violation of these procedures, the employee must immediately bring the information to the Title IX Coordinator or a Deputy Title IX Coordinator so that concerns can be addressed, and services can be offered to the affected individuals. Employees are expected to reasonably comply and cooperate with the College's process for receiving and responding to complaints under these procedures.

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 individuals in cases of sexual misconduct

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.

The College will also ensure that individuals who serve as Title IX Coordinators, Title IX Investigators, Sexual Misconduct Board Members, Appeal Decision-Makers, and facilitators of the informal resolution process have adequate training on the definition of sexual harassment, the scope of the College's education program or activity, how to conduct the College's investigation and grievance process, as applicable, and how to serve impartially, including by avoiding prejudgment of the facts, conflicts of interest, and bias. The Sexual Misconduct Board will also receive annual training on any technology to be used at a live hearing and on relevance of questions and evidence, including exclusion of questions or evidence protected under applicable "rape shield" laws, rules, or regulations. Investigators must also receive training on issues of relevance to create an investigative report that fairly summarizes relevant evidence. Training materials will not rely on sex stereotypes and will promote impartial investigations and adjudications of formal complaints under these procedures. This training may include expertise drawn from campus and community resources, professional organizations, and other experts on the topic of sexual misconduct.

The College will maintain materials used to train its employees on a website and will provide information about these procedures to all new students and employees through orientation and annually thereafter. These procedures are 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.

X. Recordkeeping

The College will maintain the following records for seven years from the date of closure of the complaint:
- Each sexual harassment investigation, including determinations, audio or video record-

ings, disciplinary sanctions, and any remedies provided to the Complainant;
- Any appeal and the result therefrom;
- Any informal resolution; and
- All materials used by the College to train Title IX Coordinators, investigators, decision-makers, and those who facilitate informal resolution under these procedures.

Additionally, the College will create and maintain for seven years from the date of closure of any complaint:
- Any actions, including supportive measures, taken in response to a report or formal complaint of sexual harassment;
- Documentation of the basis for the College's conclusion that its response to any such report or complaint was not deliberately indifferent;
- Documentation that the College has taken measures designed to restore or preserve access to the College's educational program or activity;
- Where no supportive measures are provided to Complainant, documentation of why it was not clearly unreasonable to do so.

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[1] *"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.*

[2] *If authority is vested with some other individual or decision-making body under federal, state, or local law, rule, or policy to render a particular sanction (e.g., termination of a College employee with a continuing teaching contract) the Sexual Misconduct Board shall issue a determination of responsibility for the underlying conduct and may make a recommendation regarding sanction. The matter shall be referred by the Title IX Coordinator or designee to the individual/decision-making body*

with authority to issue the sanction for further handling.

Student Complaint Procedure

The vast majority of complaints can and should be handled by the department closest to the issue where the complaint originates. The process for handling student complaints is as follows:

1. 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.)

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

3. 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; Vice President, Academic Affairs(academic issues), Vice President, Student Services   (student service and miscellaneous issues), or Vice President, Continuing Education and Training (continuing education issues) by completing the Student Complaint Form https://www.kirkwood.edu/studentcomplaint.

This process 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://iowacollegeaid.gov/StudentComplaintForm

Student Conduct Code

Preamble

Kirkwood Community College is an academic community built on the principles of mutual respect, integrity, and honesty. The college strives to provide a community wherein individuals have the right to express their opinions and ideas, to assemble peacefully, and to associate freely in a manner that does not interfere with the rights of others and is in the confines of intellectual honesty. In order to thrive as an educational institution, the college has adopted this Student Conduct Code ("Student Code") to promote and preserve its educational mission for the benefit of all who are invited to be a part of the community.

Purpose

It is in the best interest of the college and all those who are students or who may desire to become students at the college that the disciplinary procedure be defined. This document prescribes procedures to be followed in disciplinary cases in order that cases may be handled in a timely manner while serving the interests of the college community and safeguarding the rights of all students. Administrative responsibility for the establishment and enforcement of policies governing non-academic student conduct and disciplinary action has been delegated by the Kirkwood Community College President to the Vice President for Student Services. The Vice President has, in turn, delegated considerable authority for the establishment of rules and handling of violations to the Dean of Students and other bodies as designated in this policy.

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 to off-campus conduct, including, but not limited to, activities on College partners' premises, that adversely affects 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 if 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 Harassment Procedures, 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, possessed 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 activity 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 activities within any campus building or area.

13. Obstruction of the free flow of pedestrian 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 premises or at functions sponsored by, or participated in by, the College or members 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 includes, but is not limited to, surreptitiously taking pictures of another person 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 contents, or for any other purpose.

    b. Unauthorized transfer of a file.

    c. Use of another individual's identification and/or password.

    d. Use of computing facilities and resources to interfere with the work of another student, faculty 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 College computing system.

    g. Use of computing facilities and resources in violation of copyright laws.

    h. Any violation of College policies pertaining to use of information 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 College official to appear for a meeting or hearing as part of the Student Conduct System.

    b. Falsification, distortion, or misrepresentation of information before a Student Conduct Board.

    c. Disruption or interference with the orderly conduct of a Student Conduct Board proceeding.

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

    e. Attempting to discourage an individual's proper participating in, or use of, the student conduct system.

    f. Attempting to influence the impartiality 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 members, friends, or acquaintances, 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 student conduct complaint or any participant(s) of a conduct proceeding, including but not limited to, their family members, friends, or acquaintances, 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 physical) or knowingly filing a false complaint.

    i. Failure to comply with the sanction(s) imposed under the Student Conduct Code.

    j. Influencing or attempting to influence another person to commit an abuse of the student conduct code system.

18. Intentionally sounding a false alarm or tampering with fire safety equipment.

19. Use or possession on the campus or at or during any College-authorized function or event of firearms, ammunition, or other dangerous weapons, substances, or materials, except as expressly authorized by the College, or of bombs, explosives, or explosive or incendiary 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 enforcement 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 altering a college identification.

23. Violation of the Student Conduct Code while on disciplinary probation, or violation of the terms of one's probation.

C. Violation of Law and College Discipline

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 Harassment Procedures 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 tele-

vision, 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 designated 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.

   l. 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 will determine the sanctions.

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 International Travel

All Study Abroad students will be compliant with the rules and regulations of Study Abroad at Kirkwood as set forth in the Study Abroad Student Contract and other Study Abroad procedures in place in Global Learning. For semester abroad programs, refer to the Global Learning office policy and procedures.

Student groups must follow the following procedures:

1. Complete the Study Abroad online application to be considered for participation in the program.

2. Once accepted, the Kirkwood Community College Study Abroad Student Contract must be completed and signed acknowledging the risks and obligations of the student. The Study Abroad Student Contract must be signed by the student and clearly outlines all student expectations in detail.

3. Participants in an approved study abroad program must be enrolled in academic credit. Participants traveling in a non-study abroad experience will receive an itinerary and program expectations outlined by the faculty/staff leader in conjunction with Global Learning.

4. All students are responsible for full payment of tuition and program fees related to the travel program. For Study Abroad, program fees are inclusive of international airfare, some program-related expenses, and international health and travel insurance. Some personal travel expenses, activities and meals will be at the student's additional expense during travel.

5. Students must participate in all scheduled activities as directed by the faculty leader and program itinerary. Students are to remain within a 30-mile radius of the faculty leader for the duration of the program and are not to partake in unscheduled activities that cross international borders or that would place them outside of this 30-mile radius for program management purposes.

6. Students are required to attend all appropriate pre-departure orientations and post-program debriefings.

Student Conduct

Students agree to abide by the Kirkwood Community College Student Conduct Code at all times. Failure to comply may result in dismissal from the program.

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 Study Abroad Contract and may ultimately result in the student being sent home at their own expense. In such cases, the faculty leader will notify the appropriate administrator at Kirkwood of the alleged misconduct. Disciplinary proceedings will be determined by the faculty leader, Global Learning, the Study Abroad Emergency Team and the Dean of Students. Such decisions will be made on a case-by-case basis.

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
  - Date of birth
  - 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 or Removal form and filing it with 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 postsecondary 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.

- **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 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 or Removal form and filing it with 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 education 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 aid, 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 inaccurately 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, an appeal may be made, in writing, and submitted to the Registrar within 10 days of the student's notification of the decision of the hearing officer. The appeal shall be heard by an appeals board of three disinterested senior College officials and a decision rendered, in writing, within a reasonable period of time.

Should the appeal be in favor of the student, the record will be amended accordingly. Should the request be denied, the student may choose to place a statement with the record comment-

ing 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 procedure should be directed to the Registrar at (319) 398-5476

Please visit talon.kirkwood.edu for College-wide FERPA training.

Additional FERPA information can be found at the Family Policy Compliance Office Website: http://www2.ed.gov/policy/gen/guid/fpco/index.html.

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 tobaccos, 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 procedure applies to all employees, students, partners and visitors. All persons in non-compliance of the

Smoke Free Air Act will be considered in violation and subject to disciplinary action.

PROCEDURE:

- No tobacco products shall be sold or distributed on Kirkwood Community College property.
- Campus organizations are prohibited from accepting money or gifts from tobacco companies that promote use of their products.
- Tobacco advertisements are prohibited in college-run publications and at any athletic or other campus events.
- Signs stating that the entire campus is tobacco free are prominently posted at all campus and building entrances and other conspicuous places.
- All Kirkwood Community College employees are authorized and encouraged to communicate and reinforce this procedure with courtesy and diplomacy to any person whom they see violating the procedure. Individuals who refuse to comply with the procedure should then be reported to Security.

Traffic and Parking

Kirkwood's traffic and parking regulations are based on the Code of the State of Iowa. As the College has a variety of locations, local laws and ordinances also apply. Students, faculty, staff, and guests are expected to comply with these regulations.

Traffic and parking violations such as speeding, failure to stop at a stop sign, reckless driving, and parking illegally are not permitted.

The majority of parking spaces on campus are to be used on a first come, first serve basis. Students, faculty, staff, and guests may park in any of the non-designated parking areas.

Reserved Parking

The following areas are reserved and are clearly marked:
- Disability (handicap) spaces are reserved for those vehicles that display valid State of Iowa Disability Identification. For addition-

al information on the State of Iowa Persons with Disabilities Parking Law, click here.
- Visitor spaces designated for campus guests. These spaces are not to be used at any time by faculty, staff, or students.
- Kirkwood issued permit parking spaces. All vehicles parked in these spots must correctly display a valid Kirkwood issued parking permit they have been issued. See information below for additional information.
- Expectant Mother Signage – reserved for expectant students and others who bring small children to campus.
- Park & Ride – Located on the northwest end of Linn Hall parking lot, reserved for Park & Ride commuters.
- Overnight Parking - Vehicles are not be left on campus overnight. Exceptions may be made by contacting Public Safety.
- Other specially designated parking spaces. Examples of these reserved spaces are Service Vehicles, Maintenance.

Kirkwood Issued Permit Parking

Kirkwood has special permit parking spaces available. The designated spaces are available on a temporary basis only. A Kirkwood issued permit must be displayed to park in these locations.

Examples of circumstances which may qualify for special parking are:
- Temporary disability which limits mobility
- Pregnancy
- Medical Conditions
- Travel between buildings with limited time between classes

Public Safety maintains records of vehicles authorized to park in reserved spots including the name of the requester, vehicle and permit information. Vehicles parked in reserved spots without authorization, outside the time frame, or with an expired permit, are subject to a fine as noted below.

The responsibility of finding a reserved space lies with the permit holder. Possessing a permit for a reserved parking

space or requesting a reserved spot, does not guarantee the availability of a preferential parking space. In the event a reserved space is not available, a reserved permit does not allow preferential parking. Reserved permit holders may park in open, non-designated parking spaces at any time.

Reserved parking permits are the property of Kirkwood and may only be used by the permit holder. It is the responsibility of the permit holder to notify Public Safety of any relevant changes to their information on file, including but not limited to change of license plate, change of vehicle, or temporary use of an alternate vehicle. In the event a permit is lost, a replacement permit

will be issued at the cost noted on the Administrative Fees Chart.

Warnings & Violation Notices

Warning notices will be issued by Public Safety whenever possible. Violation notices or tickets will be issued when the warning notice has been ignored or the violation is significant. Continual disregard of warnings and tickets may result in a vehicle being towed.

 The city where the campus is located may also issue parking and/or moving violation tickets.

Administrative Fee & Violation Appeal Process

Administrative fees will be charged for violations. Administrative fees for viola-

tions will be considered the same as any other debt owed to the college. See the Administrative Fees & Violations Chart for cost.

If a ticket is received, students, faculty, staff, and guests must do one of the following:

- Pay the fee at the One Stop office, second floor, Kirkwood Hall.
- Mail the fee to Kirkwood in the envelope provided.
- Submit an appeal form within 5 days. Appeal forms may be obtained and completed at Administrative Fee/Violation Appeal

Administrative Fees & Violations Chart

Administrative Fees & Violations	
Speeding	$50
Speeding - 21 MPH over	$100
Failure to Stop at Stop Sign	$50
Reckless Driving	$50
Parking in Disabilities Area without displaying State identification	$100
Parking in a restricted area.	$30
Replacement of a reserved parking permit	$20

Weapons Procedure

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 federal or state weapons permit.

Mace or pepper spray is allowable under the policy but may not be used or possessed in such a way that violates this or other college policies and procedures.

Any member of the campus community who observes an individual possessing, transferring, selling or using a weapon,

and who reasonably believes that the individual has not been specifically authorized by Kirkwood has an obligation to report immediately to Public Safety.

Exemptions

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

Non-projectile Weapons - Consistent with the *Iowa Code* 724.8A, non-projectile weapons, such as stun guns, that direct an electric current, impulse, wave, or beam that produces a high-voltage pulse designed to immobilize a person are permitted. However, projectile

high-voltage pulse weapons, such as tasers, are prohibited, despite the above exception. In addition, non-projectile high-voltage pulse weapons are subject to off-campus restrictions, including age limitations, per *Iowa Code* 724.4.

Props – Due to the risk of being identified as a real weapon, any item which looks like a weapon in appearance and is utilized for any purpose on any Kirkwood campus, must be reported and approved by Facilities prior to being used for any activity.

Individuals seeking an exception must submit in advance a written request to the Senior Director, Facilities. The Sen-

ior Director will review the request in consultation with other appropriate staff members and will respond to the request in writing.

Violations

Since weapons may pose a clear risk to persons and property on the campus, violation of the regulations may result in disciplinary action from the college and/or prosecution under the appropriate state or federal laws.

Students in violation of the procedure may be subject to disciplinary action up to and including expulsion. Faculty and staff violating this procedure may be subject to disciplinary action, up to and including termination of employment. Guests, visitors and contractors found in violation of this procedure may be permanently prohibited from returning to campus for any reason.

Individuals found in possession of weapons in violation of this procedure may be reported to local law enforcement for further criminal action in accordance with the appropriate local, state, and federal laws.

Kirkwood will also pursue disciplinary, or criminal action as appropriate against anyone who violates this procedure by engaging in violence, threats of violence, or intimidation.

Definitions

Firearm – Any device that shoots a bullet, pellet, flare, tranquilizer, spear, dart, or other projectile, whether loaded or unloaded. This includes but is not limited to, guns, air guns, dart guns, pistols, revolvers, rifles, shotguns, cannons, and any ammunition for such devices.

Weapon – Any device that is designed to, or traditionally used to inflict harm. This includes, but is not limited to: (1) firearms, slingshots, switchblades, daggers, bows and arrows, hand grenades, hunting knives, explosives; (2) any object that could reasonably construed as a weapon or that is intended to be used to inflict bodily injury; or (3) any object legally controlled as a weapon or treated as a weapon by law.

Explosives – Any combustible capable of causing serious injury including but not limited to firecrackers, black powder, dynamite, plastic explosives or blasting caps.

Transfer Credit Procedures

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. The credits may not be used to satisfy core or general education requirements.

Official transcripts from other community colleges will be reviewed by the registrar and transfer credit will be awarded as appropriate.

Procedure 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., 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 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 ignored in the computation of cumulative and transfer grade point averages.

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.

Transfer of Military Credit

Kirkwood awards transfer credit for military training as follows:

Direct course equivalency credit is granted for Military Occupation Specialty (MOS) based courses in certain fields.

Technical elective credit is granted for basic training and non-MOS courses completed while in the military provided the course is listed in the ACE (American Council on Education) Guide. No more than 16.0 hours of technical elective credit will be awarded. This is in accordance with the Liaison Advisory Committee on Transfer Students (LACTS) agreement between Iowa community colleges and public universities.

To receive credit, students must provide documentation by submitting official military transcripts to the VA certifying official.

Academic and Enrollment Procedures

Adds, Drops and Withdrawal of Registration

Students may add a course at any time before it starts, subject to the course load limit and student load limits. After a course starts, it may only be added with the instructor and dean signatures.

Students may drop individual courses prior to the last day to drop shown on the course syllabus. After the last day to drop a course, students must remain in the scheduled course. They will receive "F" grades if they stop attending classes without officially dropping them. Classes that have ended cannot be dropped.

Students who have not attended a course will be administratively with-

drawn and will not be charged for the course.

Academic Integrity Procedure

Kirkwood students are responsible for authenticating all work in a course. This includes but is not limited to quizzes, exams, presentations, papers, journals, and projects. If asked, the student must be able to produce proof establishing that the work he or she submits is original and created by the student. For this reason, it is recommended that students engage in a verifiable working process on assignments and conduct themselves during class in a manner that does not lead to the suspicion of academic dishonesty.

Students should keep copies of all drafts of original work, make photocopies of research materials, write summaries of research materials, retain Writing Center receipts, keep logs or journals of work on assignments and papers, and save drafts or versions of assignments under individual file names on personal computer or cloud storage devices.

All writing that is taken from secondary sources (including those on the Internet) must have proper attribution and citation as outlined in course requirements and syllabi.

If the instructor suspects academic dishonesty and asks the student to authenticate his or her work, the inability to authenticate the work is grounds for opening an investigation of academic dishonesty. In the event that an instructor or administrator communicates to the student a suspicion of academic dishonesty, the burden of proof rests on the student to establish that he or she was responsible for the creation of his or her own work.

In addition to requiring that students authenticate their work, Kirkwood faculty or their designees 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.

This procedure applies to all credit and noncredit coursework taken at Kirkwood Community College.

Academic dishonesty may include but is not limited to:

1. Plagiarism and Fabrication

   a. Copying information verbatim from a source without providing proper credit or source attribution.

   b. Paraphrasing a significant portion of another individual's work without fundamentally changing the main idea and failing to provide proper credit.

   c. Presenting as your own work something that you had no part in creating (this would include obtaining papers or other academic materials by purchasing, borrowing or downloading them from a third party or website).

   d. Creating false data or modifying existing data as part of an assignment or project without the express knowledge and consent of the instructor. This includes false graphs, charts and bibliographic citations.

2. Misrepresentation

   a. Allowing another individual to represent him or herself as the student to complete a quiz, test or other assessment.

   b. Allowing one's own name to be part of a project or group assignment for which the individual played no role or had no significant contribution.

   c. Submitting as original work an assignment from a previous course or class unless such prior submission is noted and the original work has been substantially modified or enhanced. Without these changes, the student is guilty of self-plagiarism.

3. Cheating and Facilitation

   a. Copying from another student's work during a class on a graded or assessed activity.

   b. Knowingly allowing other students to view or access one's work during a test or quiz. During in-class assessment, students should ensure that their work is not visible to others and should avoid the appearance of viewing another student's quiz, exam or other unique work.

   c. Using unauthorized notes (written or electronic) during a quiz or exam. This includes but is not limited to unauthorized notes or formulae on calculators or other devices that are allowed.

   d. Accessing the Internet or other electronic sources during an in-class assessment without the express knowledge and consent of the instructor.

   e. Communicating with another student (either by sending or receiving information) in a way that shares information and answers on graded activities without the express knowledge and consent of the instructor.

   f. Copying, photographing or in any way duplicating part or all of a quiz or test without the permission of the instructor.

4. Impeding Fair and Equal Access to the Education and Research Process

   a. Hiding, removing or in any way restricting access to information and materials that other students may be required to access in the course of completing an assignment or project. This includes creating passwords or other electronic barriers to access on public or shared websites.

Sanctions

The sanctions for confirmed violation of the Academic Integrity Procedure are as follows:

First offense:

The instructor will communicate with the student about the suspected violation of the Academic Integrity Procedure. The instructor will have the authority to issue a failing grade on the

Academic and Student Procedures

paper, exam or assignment for which cheating or plagiarism was established. A first offense of academic dishonesty will be treated as a warning and an opportunity for educating students about Kirkwood's Academic Integrity Procedure. The student's name will be entered into the database of Student Academic Integrity Violations for a first offense of student academic misconduct and the student will be required to complete online Academic Integrity Education.

Second Offense:

The instructor will communicate with the student about the suspected violation of the Academic Integrity Procedure. The instructor will have the authority to issue a failing grade on the paper, exam or assignment for which cheating or plagiarism was established. In addition, the instructor will have the authority to issue a failing grade for the course. The student's name will be entered into the database of Student Academic Integrity Violations for a second offense of student academic misconduct and the student will be required to complete online Academic Integrity Education and meet with the appropriate department administrator.

Third Offense and Subsequent Offenses:

The instructor will communicate with the student about the suspected violation of the Academic Integrity Procedure. The instructor will have the authority to issue a failing grade on the paper, exam or assignment for which cheating or plagiarism was established. The student's name will be entered into the database of Student Academic Integrity Violations for a third or subsequent offense of student academic misconduct. The student will be suspended for one semester from Kirkwood Community College. The student must meet with the Associate Vice President of Academic Affairs prior to being readmitted to the college.

Appeal

Students may appeal the finding of violation of the Academic Integrity Procedure using the Academic Integrity Appeals Procedure.

Academic Integrity Appeal Procedure

If a student feels their conduct does not fit within the definition of academic integrity, they may appeal this decision. Students have five working days from being notified of an instance of academic dishonesty to submit an appeal. Appeal of a determination/finding of academic dishonesty can be submitted using this Academic Integrity Appeal Form https://www.kirkwood.edu/academic_integrity_appeal_form. The appeal should contain a brief, clear and concise description of what occurred and state specifically why the activities or behavior of the student should not be determined academic dishonesty. Students may also provide additional information why the Committee should grant the appeal. Supporting documentation is allowed and may be included with the appeal.

An Ad hoc Appeal Committee will convene to consider the appeal within five working days of the receipt of the student appeal. The Chairperson will contact all parties involved in the appeal and provide an opportunity to appear in person for the appeal hearing. The Ad Hoc Appeal Committee may render a decision based entirely on the written appeal material. It is the intention of the Committee to reach a decision concerning appeals within two (2) business days following the conclusion of the appeal hearing. The Chairperson of the Committee will notify all parties involved of the Committee's decision using a letter to the student's Kirkwood email address. The decision of the committee is final and cannot be appealed within the College.

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 Con-

tinuing Education coursework, a tuition charge will be assessed equal to one half the current tuition for the credit course on the application.

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

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.

Alternative credit will not be granted:

1. if it duplicates courses previously passed or failed

2. if it puts the student over 18 credits of exam credit

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 with a L grade. 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.

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.

Student Class Attendance

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 requirements for each of their courses. Failure to abide by a faculty member's attendance requirements may adversely impact their grade.

Class Attendance Expectations

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 are regarded as integral to learning and are 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 instructor's expectations and the nature of the absence. Absences that result from participation in college-sponsored activities, jury duty, or short term military service 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 procedure 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 coursework 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.

Class Absence for Jury Duty

Students who are called to jury duty may have alternative assignments provided assuming the time spent is within normal semester boundaries. Proof of both the call to serve and actual service must be shared with the faculty member, and it is the student's responsibility to notify the faculty member prior to service and to make arrangements to complete alternative work post the jury assignment.

Class Attendance Policy Related to Required Military Duty or Veteran Status

Questions on whether an activity is a required military service activity for purposes of this procedure should be directed to the vice president of aca-

demic 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.

Absences due to military duty or veteran status must be excused. This includes, but is not limited to, the following:

- Mandatory monthly drill instruction, such as duty completed by national guard members and military reservists (typically this involves a one-day absence in order to extend weekend training).
- Service-related medical appointments where failure to appear might result in a loss of benefits.

Students 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. Students are strongly encouraged to inform each faculty member of their known and anticipated absences as far in advance as possible, preferably at the start of the term.

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.

Students are still responsible for demonstrating achievement of course learning goals, even when absences due to military duty are necessary and reasonable. In situations with many absences or extended periods of military duty (e.g. being called to active duty), it may be most appropriate for the student to withdraw and retake the course in a future semester.

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.

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 unless they are enrolled in a FlexForward program.

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

Part-time coursework may be undertaken in many programs and 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), Advanced Placement tests, the Alternative Credit policy or through a variety of department-approved subject matter examinations. 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 appear on the transcript as exam credit and 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.

Credit by examination will not be granted:
1. If it duplicates courses previously passed or failed.
2. If it puts the student over 18 credits of exam credit.

Credit Hour Definition

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. No registration or orientation hours may be included when determining credit hours. The College's minimum requirements are:

The College's Minimum Requirements

Instructional Delivery	Delivery Definition	Minimum Minutes	Contact Hours
Classroom Work	Lecture and formalized classroom instruction under the supervision of a faculty member	800	16
Laboratory Work	Experimentation and practice by students under the supervision of a faculty member	1600	32
Clinical Practice	Applied learning experience in a health agency or office under the supervision of a faculty member	2400	48

Work Experience	Employment-related experience planned and coordinated by an institutional representative and employer, with control and supervision of the student on the job	3200	64
Distance Education	Courses taught over the Internet, or other electronic means (i.e. in-class hybrids, Weblive)	Same as above with equivalent work required	Same as above with equivalent work required
FlexFORWARD Courses	Courses or programs of study that allow students to complete course competencies at a faster pace than if offered by conventional methods	Equivalent outcome achievement and verifiable evidence	Equivalent outcome achievement and verifiable evidence
Legal Reference: 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.

Students who apply for certificates, diplomas or degrees that are not their program of study are required to complete the curricular requirements in place when the application is submitted.

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 awards per term, as long as the student is enrolled in the term.

Fees

Fees represent the college's core charges for instructional offerings. Course related fees are based on a formula applied to the consumable costs associated with a course that are not part of tuition. Others may be a fixed rate and tied to professional organizations or testing.

Lab Fees: These fees recover some or all of the costs for supplies normally used in an individual course to support student learning and development. Depending on the average costs, lab fees are derived through a formula that considers the actual cost per student, on average, with a defined fee maximum ceiling which considers both course and total program cost. Fees are reviewed regularly to insure that the fee range is accurate and consistent with course instructional requirements.

Technology Fees: This is a per student fee intended to provide support for technology infrastructure costs. This fee is applied to all students attending Kirkwood Community College.

Incidental Fees: Some courses or programs of study may impose fees for a variety of purposes. Some programs/courses, for example, may require testing fees or professional credentialing or contributions to support events relevant to the organization or course program of study. Courses or programs may require students to purchase individual supplies or materials necessary for projects, learning activities, or external assessments.

Non-Credit Fees: Fees are established for various non-credit courses and programs based on the delivery cost of the course or program. These fees may be separate or included as the cost for enrolling in the course or program of study.

Refunds: Some fees are not refundable but most are refundable before the course starts and through the end of its 100% tuition refund period.

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, may be subject to sanctions. Sanctions may include suspension, expulsion, revocation of admission to

the college and/or program of study, or other discretionary sanctions.

Independent Study

Students requesting independent study must have previous coursework in the discipline and a positive performance record. 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 the discipline faculty member and have the appropriate approvals before registering.

Military Tuition Assistance Withdrawal

Military tuition assistance (TA) is awarded to a student under the assumption that the student will attend school for the entire period for which the assistance is awarded. When a student withdraws (officially or unofficially) on or before 60% of the course(s) meeting period has been completed, Kirkwood Community College will comply with the Department of Defense policy to return unearned TA funds on a proportional basis through the 60% portion of the period for which the TA funds were provided. After a student completes 60% of the term, all TA funds are considered fully earned.

Student Financial Services will notify affected students within 30 days of the determination of withdrawal as to the portion of funds being returned and if the return of unearned funds will result in a balance on the student's financial account. If a service member stops attending due to a military service obligation (deployed or temporary duty), Kirkwood will work with the affected service member to identify solutions that will avoid student debt for the returned portion of TA funds.

The return of unearned military TA funds will follow the same guidelines as the Department of Education Title IV funding, outlined in Kirkwood's Withdrawal Policy for Return of Title IV Funds policy. The calculation is completed for each course individually. Once the completion (earned) percentage is calculated, Kirkwood will multiply the percentage by the amount of TA funds awarded to determine the amount of TA funds earned. The unearned TA funds will be returned to the military service, not to the service member, within 45 days of the determination of withdrawal.

National Guard or Reserve Forces of the United States Duty Policy

This procedure offers the following options to a student who is a member, or the spouse of a member, if the member has a dependent child, of the National Guard or reserve forces of the United States and who is ordered to start National Guard, military service or federal service or duty:

- Withdraw from the student's entire registration and receive a full refund of tuition and mandatory fees.
- 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.
- 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 incomplete's shall be considered dropped and the tuition and mandatory fees for the course refunded.

Online Registration Restriction

Students with a grade point average of less than 1.8 for all online classes within the previous three years will have a registration restriction placed on their record. The restriction prevents registration in online classes until the average for online courses reaches 1.8 or better, or a three year period has passed. The average for online courses can be improved by retaking failed or low-scored courses in another format (face-to-face, WebLive or hybrid). Students will receive a warning when their online GPA is lower than 2.0. In cases where extenuating circumstances can be documented a petition for policy waiver may be submitted to Distance Learning for review and decision on enrollment.

Note: This registration restriction does not prevent students from enrolling in face-to face, WebLive or hybrid format classes, only online classes.

Program/Area of Study Changes

A student who changes their program/area of study is 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 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 their plans fully with a member of the counseling staff or with their academic advisor.

Readmission

Students who have withdrawn from the college in good standing and who desire to be readmitted should submit their request at www.kirkwood.edu/majorchange. 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

Tuition refunds are computed as of the date the class is dropped via MyHub or is withdrawn at the One Stop office or at a Kirkwood center.

- 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 full 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 full refund.

- For classes that are 82 days or longer, a student may drop up to the end of the second week and receive a full refund.

- For a study abroad course, a student may only drop by submitting a formal withdraw request to the Global Learning office. Refunds for tuition and program fees are determined by the payment terms and vary by program.

According to the Higher Education Act (HEA) of 1965 as amended, schools are required to follow the Return of Title IV procedure. Students earn their Title IV federal financial aid by attending class. If they withdraw from all classes and therefore are not enrolled long enough to earn all of their aid, the 'unearned' portion must be returned to the appropriate Title IV program. The Title IV programs include Pell Grant, Supplemental Educational Opportunity Grant (SEOG) and Stafford Loans. Federal Work-Study earnings are not affected by Title IV regulations concerning the return of unearned federal financial aid. The One Stop office will make this calculation and 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.

Resident Credit Requirement

Students completing associate of arts and associate of science degrees must earn a minimum of 16 credit hours from Kirkwood.

Students completing associate of applied science degrees must earn a minimum of 16 credit hours from Kirkwood in their program of study.

Students completing diplomas must earn a minimum of 8 credit hours from Kirkwood in their program of study.

Students completing certificates must earn a minimum of 6 credit hours from Kirkwood in their program of study.

Student Testing and Course Placement

All new degree-seeking students registering for more than six credit hours are required to demonstrate college level competency in writing, reading and/or math prior to registration. Appropriate course placement in either college or pre-college courses is determined by a variety of measures, including placement tests, previous academic experience, advising, and so on. Exemptions to this procedure must be evaluated prior to registration. (Students need to allow at least two weeks for these exemptions to be evaluated.)

- Completed similar placement tests or the ACT and sent the official record of scores to Kirkwood Community College. 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.

Financial Aid Eligibility for Remedial Courses

A course will be deemed remedial for Title IV award purposes if it meets any of the following criteria.

- Any classes designated remedial by Kirkwood's authorizing authority. These classes will be identified by the zero prefix in the course number.

- All English Language Acquisition (ELA) classes.

- Certain classes that are considered remedial for a specific student because it is determined the student needs a course in order to succeed in the entry-level course required for their program.

The following criteria is used to determine whether a course is 'remedial for the student'.

1. Placement test scores recognized by the appropriate academic department that demonstrate a student is not proficient enough to start in the entry-level course within their designated program.

2. Academic Advisor determines that a student is not proficient enough to start in the entry-level course within their designated program based on one of the following criteria.

   a. A two-year time lapse since the subject matter was last studied by the student as documented by a high school or college transcript or a signed statement by the student.

   b. Lack of proficiency in the subject matter as demonstrated by a high school or college transcript.

   c. No proficiency in the subject matter as indicated in a signed statement by the student.

Career Programs

Advanced Manufacturing And Robotics Technologies

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

Entry time
Fall
Award
Associate of Applied Science degree
2 years (5 terms including summer)
Certificate
3 terms

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, quality control, and robotic programming and integration. Possessing multiple skill sets in today's workforce positions and 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 or the University of Iowa.

This program requires the following third-party credentials: OSA 10-General Industry and GMAW AWS Certification.

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, Robotics technician, Robotics engineer.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
MFG-393	Introduction to Machine Shop	4
WEL-153	Virtual Reality Welding	1
WEL-228	Introduction to Welding, Safety & Health of Welders: SENSE 1	1
WEL-244	Gas Metal Arc Welding Short Circuit Transfer: SENSE 1	2
MAT-232	Applied Industrial Math for Technicians	3
MAT-103	Applied Math Topics for Advanced Manufacturing	1
IND-156	Microcomputers for the Trades OR	2
CSC-116	Information Computing	
---------	Communications Course	3
		17

Course Number	Course Title	Credit Hours
Term 2		
MFG-394	CNC Machine Tool Operations	4
ELE-364	Basic Electrical Circuits	4
EGT-450	PLTW-Computer Integrated Manufacturing	3
ATR-105	Industrial Robotics	3
MFG-103	Applied Metallurgy	3
		17
Term 3		
MFG-339	CNC Press Brake Operator (NIMS)	2
ATR-136	Programmable Logic Controllers for Manufacturing	4
---------	Communications Course	3
MGT-145	Human Relations in Management **OR**	3
PSY-111	Introduction to Psychology	
		12
Term 4		
CAD-237	Geometric Dimensioning & Tolerancing	3
CAD-300	AutoCAD for Applied Engineering	2
CAD-140	Parametric Solid Modeling I	3
PHY-180	Applied Physics I **OR**	2
PHY-190	Physics I	
ATR-134	Robot Machine Integration	3
ATR-254	PLC Integration	4
SDV-135	Job Seeking Skills	1
		18
Term 5		
ATR-323	Mechatronics I	2
MFG-395	CNC Machine Tool Program and Setup	4
MFG-396	Alternative Manufacturing Processes	3
BUS-280	Fundamentals of Lean Process Improvement	3
ATR-135	Advanced Manufacturing and Robotics Technologies Capstone	3
---------	Humanities or History/Culture Course	3
		18
Total program credit hours		**82**
Optional		
MFG-924	Honors Project	1

Industrial Robotics Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
MAT-232	Applied Industrial Math for	3

Course Number	Course Title	Credit Hours
	Technicians	
WEL-153	Virtual Reality Welding	1
WEL-228	Introduction to Welding, Safety & Health of Welders: SENSE 1	1
WEL-244	Gas Metal Arc Welding Short Circuit Transfer: SENSE 1	2
		7
Term 2		
ELE-364	Basic Electrical Circuits	4
EGT-450	PLTW-Computer Integrated Manufacturing	3
ATR-105	Industrial Robotics	3
		10
Term 3		
ATR-134	Robot Machine Integration	3
ATR-136	Programmable Logic Controllers for Manufacuring	4
		7
Total program credit hours		**24**

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

Entry time
Fall (daytime and evening classes available)

Award
Associate of Applied Science degree
2 years (5 terms including summer)
Diploma
2 terms

The Advanced Welding Technologies Associate degree program includes Shielded Metal Arc Welding, Gas Metal Arc Welding and Gas Tungsten Arc Welding. Prepares students for a SENSE 1 and SENSE 2 level credential from the American Welding Society. Graduates of this program can transfer to the University of Northern Iowa to pursue a Technology Management Bachelor of Arts degree and the University of Iowa to pursue an Applied Studies Bachelor of Arts degree.

The Entry-Level Welder diploma program includes Shielded Metal Arc Welding, Gas Metal Arc Welding and Gas Tungsten Arc Welding. Prepares students for a SENSE 1 level credential from the American Welding Society.

Welder certifications to American Welding Society codes are available in several welding processes.

These program requires completion of OSHA 10-General Industry, 6G pipe carbon steel certifications and 3G vertical up with backing and open-root certifications.

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

Course Number	Course Title	Credit Hours
Term 1		
WEL-228	Introduction to Welding, Safety & Health of Welders: SENSE 1	1
WEL-244	Gas Metal Arc Welding Short Circuit Transfer: SENSE 1	2
WEL-274	Shielded Metal Arc Welding I: SENSE 1	3
WEL-251	Gas Tungsten Arc Welding for Carbon Steel: SENSE 1	2
MAT-765	Welding Mathematics I	3
WEL-245	Gas Metal Arc Welding Spray Transfer: SENSE 1	2
WEL-269	Thermal Cutting Processes	3
---------	Communications Course	3
		19
Term 2		
WEL-275	Shielded Metal Arc Welding II: SENSE 1	3
WEL-254	Welding Inspection and Testing Principles: SENSE 1	1
IND-156	Microcomputers for the Trades	2
WEL-273	Gas Tungsten Arc Welding Stainless Steel and Aluminum	3
WEL-268	Flux Cored Arc Welding Self-Shielded/Gas-Shielded	3
WEL-233	Print Reading and Welding Symbol Interpretation: SENSE1	3
		15
Term 3		
WEL-271	Documents Governing Welding and Weld Inspection	3
MFG-103	Applied Metallurgy	3
---------	Communications Course	3
		9
Term 4		
WEL-272	Advanced Gas Tungsten Arc Welding-Pipe	6
WEL-287	Layout and Fitup	3
WEL-290	Advanced Flux Cored Arc Welding Principles and Practices	3
WEL-291	Advanced Gas Metal Arc Welding Pipe Principles and Practices	3
MGT-145	Human Relations in Management **OR**	3
PSY-111	Introduction to Psychology	
		18
Term 5		
WEL-286	Advanced Shielded Metal Arc Welding Principles and Practices	6
WEL-932	Internship **OR**	3
WEL-800	Welding Capstone	

Course Number	Course Title	Credit Hours
ATR-105	Industrial Robotics	3
---------	Humanities or History/Culture Course	3
		15

Total program credit hours 76

Optional

WEL-924	Honors Project	1
WEL-928	Independent Study	1

Entry-Level Welder Diploma Requirements

Course Number	Course Title	Credit Hours
Term 1		
WEL-228	Introduction to Welding, Safety & Health of Welders: SENSE 1	1
WEL-244	Gas Metal Arc Welding Short Circuit Transfer: SENSE 1	2
WEL-274	Shielded Metal Arc Welding I: SENSE 1	3
MAT-765	Welding Mathematics I	3
WEL-269	Thermal Cutting Processes	3
WEL-251	Gas Tungsten Arc Welding for Carbon Steel: SENSE 1	2
WEL-245	Gas Metal Arc Welding Spray Transfer: SENSE 1	2
---------	Communications Course	3
		19
Term 2		
WEL-275	Shielded Metal Arc Welding II: SENSE 1	3
WEL-254	Welding Inspection and Testing Principles: SENSE 1	1
IND-156	Microcomputers for the Trades	2
WEL-273	Gas Tungsten Arc Welding Stainless Steel and Aluminum	3
WEL-268	Flux Cored Arc Welding Self-Shielded/Gas-Shielded	3
WEL-233	Print Reading and Welding Symbol Interpretation: SENSE1	3
		15

Total program credit hours 34

Agricultural Science

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

Entry time
Fall, Spring
Award
Associate of Applied Science degree
2 years (5 terms including summer)
Diploma
1 year (3 terms including summer)
Certificate
1 year (2 terms)

Agricultural Science AAS prepares students for employment in the food production chain. Students can pursue specialized studies (options) in general ag production, or beef, swine or crop production and precision agriculture. Students who want to take courses from more than one of these areas can customize their studies with the assistance of a faculty member. This program includes an internship. Specialization certificates can be earned as part of the AAS degree or earned separately.

Students in the Agricultural Science AAS program may elect to receive the diploma after completing the courses below. Please consult with the Agriculture Sciences Department for more information regarding this option.

The Agricultural Science Diploma is designed to teach students the fundamental skills, knowledge and applied academic and technical experiences required for the person who wishes to enter the agriculture industry.

The Crop Production Certificate introduces basic agronomy concepts to students. Topics include crop and soil science, crop production, fertilizer management and crop harvest and storage methods.

The Beef Science Certificate introduces students to livestock handling and husbandry. Topics include anatomy and physiology, reproduction, nutrition and feedlot management.

The Swine Science Certificate introduces students to livestock handling and husbandry. Topics include animal behavior and well-being, swine reproduction, record keeping and swine unit management.

The Precision Agriculture Certificate teaches students the tools and process of precision farming. This includes using Global Positioning Systems (GPS), Geographical Information Systems (GIS) and Intelligent Devices and Implements (ID-Is). Students will collect information, analyze data and implement best management practices into farming practices.

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

Degree Requirements

Course Number	Course Title	Credit Hours
Term I		
AGC-116	Professionalism in Agriculture	1
AGC-103	Ag Computers **OR**	3
CSC-116	Information Computing	
ENG-105	Composition I	3
MAT-607	Survey of Data **OR**	3
MAT-102	Intermediate Algebra	
AGC-123	Applied Ag Concepts	1
AGS-113	Survey of the Animal Industry **OR**	3
AGA-114	Principles of Agronomy	
-------	Agricultural Technical Courses	5
		19
Term 2		
AGS-319	Animal Nutrition **OR**	3

AGA-154	Fundamentals of Soil Science	
-------	Humanities or History/Culture Course	3
AGC-210	Employment Seminar	1
-------	Agricultural Technical Course	3
-------	Agricultural Business Course	3
BIO-104	Introductory Biology w/Lab **OR**	3
CHM-110	Introduction to Chemistry	
		16

Term 3-Summer

	**Approved industry internship required for graduation as outlined by internship supervisor	

Term 4

AGS-214	Domestic Animal Physiology **OR**	3
AGP-333	Precision Farming Systems	
SPC-101	Fundamentals of Oral Communications **OR**	3
SPC-112	Public Speaking **OR**	
ENG-106	Composition II	
---------	Agricultural Technical Courses	10
		16

Term 5

-------	Agricultural Business Courses	6
-------	Agricultural Technical Courses	9
MGT-145	Human Relations in Management **OR**	3
PSY-111	Introduction to Psychology **OR**	
SOC-115	Social Problems	
		18

Total program credit hours 69

Agricultural Technical Courses

AGA-216	Row Crop and Forage Production	4
AGA-217	Field Crop Harvesting and Drying	3
AGA-219	Field Crop Harvesting Lab	2
AGA-170	Fertilizer Management	3
AGM-419	Machinery Servicing	3
AGS-500	Beef Industry and Feedlot Management	3
AGS-501	Stockmanship, Bunk Management and Cattle Processing Lab	2
AGS-502	Beef/Cow Calf Production	2
AGS-503	Cow Calf Lab	1
AGS-516	Beef Science Management	2
AGS-517	Livestock Management and Merchandising Lab	1
AGS-512	Beef Breeding/Reproduction/Nutrition	3
AGS-513	Reproduction and Nutrition Lab	2
AGS-531	Swine Reproduction and Management	3
AGS-532	Swine Reproduction and Management Lab	2
AGS-350	Artificial Insemination of Cattle	1

AGS-356	Livestock Behavior and Welfare	3
AGS-357	Livestock Behavior and Welfare Lab	2
AGS-425	Swine Systems Management	3
AGS-441	Livestock Housing and Equipment	3
AGP-143	Fundamentals of Electricity for GPS	1
AGM-334	Advanced Ag Electronics	2
AGP-435	Advanced Precision Farming: Software	3
AGP-440	Ag Application of Digital Imagery	3
AGA-376	Integrated Pest Management	3
FLS-141	Elementary Spanish I	4
BIO-104	Introductory Biology w/Lab	3
CHM-110	Introduction to Chemistry	2
PHY-120	Introduction to Physics	3
AGS-113	Survey of the Animal Industry	3
AGA-114	Principles of Agronomy	3
AGS-319	Animal Nutrition	3
AGA-154	Fundamentals of Soil Science	3
AGS-214	Domestic Animal Physiology	3
AGP-333	Precision Farming Systems	3

Agricultural Business Courses

AGB-331	Entrepreneurship in Agriculture	3
AGB-336	Agricultural Selling	3
AGB-470	Farm Records, Accounts, Analysis	3
AGB-330	Farm Business Management	3
AGB-446	Agricultural Finance	3
AGB-235	Introduction to Agriculture Markets	3
AGB-101	Agricultural Economics	3
ACC-152	Financial Accounting	4
ECN-130	Principles of Microeconomics	3

Agricultural Science Diploma Requirements

Course Number	Course Title	Credit Hours
Term I		
AGA-114	Principles of Agronomy **OR**	3
AGS-113	Survey of the Animal Industry	
-------	Agricultural Technical Courses	9
AGC-116	Professionalism in Agriculture	1
AGC-123	Applied Ag Concepts	1
		14
Term 2		
AGS-319	Animal Nutrition **OR**	3
AGA-154	Fundamentals of Soil Science	
AGS-214	Domestic Animal Physiology **OR**	3
AGP-333	Precision Farming Systems	
AGC-210	Employment Seminar	1
-------	Agricultural Technical Courses	10
		17
Term 3		
	**Approved industry internship required for graduation as outlined by internship supervisor	
---------	Agricultural Technical Course	3
ENG-105	Composition I	3

MAT-607	Survey of Data **OR**	3
MAT-102	Intermediate Algebra	
		9

Total program credit hours **40**

Crop Production Certificate Requirements

Course Number	Course Title	Credit Hours
Term I		
AGA-114	Principles of Agronomy	3
AGA-217	Field Crop Harvesting and Drying	3
AGA-219	Field Crop Harvesting Lab	2
AGA-170	Fertilizer Management	3
		11
Term 2		
AGA-216	Row Crop and Forage Production	4
AGA-154	Fundamentals of Soil Science	3
AGP-333	Precision Farming Systems	3
		10

Total program credit hours **21**

Beef Science Certificate Requirements

Course Number	Course Title	Credit Hours
Term I		
AGS-500	Beef Industry and Feedlot Management	3
AGS-501	Stockmanship, Bunk Management and Cattle Processing Lab	2
AGS-319	Animal Nutrition	3
AGS-512	Beef Breeding/Reproduction/Nutrition	3
AGS-513	Reproduction and Nutrition Lab	2
		13
Term 2		
AGS-502	Beef/Cow Calf Production	2
AGS-503	Cow Calf Lab	1
AGS-214	Domestic Animal Physiology	3
AGS-516	Beef Science Management	2
AGS-517	Livestock Management and Merchandising Lab	1
AGS-350	Artificial Insemination of Cattle	1
		10

Total program credit hours **23**

Swine Science Certificate Requirements

Course Number	Course Title	Credit Hours
Term I		
AGS-531	Swine Reproduction and Management	3
AGS-532	Swine Reproduction and Management Lab	2
AGS-356	Livestock Behavior and Welfare	3
AGS-357	Livestock Behavior and Welfare Lab	2

AGS-319	Animal Nutrition	3
		13
Term 2		
AGS-425	Swine Systems Management	3
AGS-441	Livestock Housing and Equipment	3
AGS-214	Domestic Animal Physiology	3
		9

Total program credit hours **22**

Precision Agriculture Certificate Requirements

Course Number	Course Title	Credit Hours
Term I		
AGA-154	Fundamentals of Soil Science	3
AGP-333	Precision Farming Systems	3
AGP-143	Fundamentals of Electricity for GPS	1
AGP-420	Geospatial Data Collection	3
-------	Certificate Program Elective	3
		13
Term 2		
AGA-114	Principles of Agronomy	3
AGP-405	Ag Applications of GIS	3
AGP-425	Agricultural Spatial Analysis	3
-------	Certificate Program Elective	3
		12

Total program credit hours **25**

Certificate Program Electives

AGP-435	Advanced Precision Farming: Software	3
AGP-440	Ag Application of Digital Imagery	3
AGA-216	Row Crop and Forage Production	4
AGM-419	Machinery Servicing	3
AGM-334	Advanced Ag Electronics	2

Agricultural 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 (5 terms including summer)

Agricultural Business students study sales, finance, safety, commodity markets, economics, entrepreneurship, farm and industry management, agronomy, animal science and precision farming to prepare for careers in the agricultural industry.

The Agricultural Business diploma is designed to provide Agribusiness fundamental skills and knowledge for individ-

uals who already have another degree or who have been working in an Agribusiness and desire to develop a more thorough understanding of the industry to help them succeed in their career path. Students in the Agricultural Business program may also elect to receive a Diploma after completing the courses listed under the Diploma option.

The Agribusiness Entrepreneurship Certificate is designed to develop skills to recognize business opportunities, make financial considerations, and pursue the marketing of value added agricultural products.

The Agribusiness Farm Management Certificate is designed to prepare individuals interested in managing or operating a farm production business, by developing the skills and understanding of modern farm management techniques and strategies needed to succeed in today's agricultural environment.

The Agribusiness Industry Management Certificate is designed to teach basic skills and understanding of management for those interested in moving into a management position or being more successful as a manager in the Agribusiness Industry.

Career opportunities: Ag banks and credit unions, Crop scouting, Cooperatives, Fertilizer applications, Data collection from research/analysis

Degree Requirements

Course Number	Course Title	Credit Hours
Term I		
AGC-116	Professionalism in Agriculture	1
COM-723	Workplace Communications **OR**	3
ENG-105	Composition I	
AGA-114	Principles of Agronomy	3
AGS-113	Survey of the Animal Industry	3
AGB-133	Introduction to Ag Business	3
AGC-103	Ag Computers **OR**	3
CSC-116	Information Computing	
AGC-123	Applied Ag Concepts	1
		17
Term 2		
AGC-130	Mathematics I - Agriculture **OR**	3
MAT-157	Statistics **OR**	
MAT-707	Algebra Mastery 1	
AGB-470	Farm Records, Accounts, Analysis **OR**	3
ACC-152	Financial Accounting	
AGC-210	Employment Seminar	1
	**Approved industry internship required for graduation as outlined by internship supervisor	
AGB-323	Agricultural Procedures and Safety	1
AGB-336	Agricultural Selling	3
MGT-145	Human Relations in Management	3
		14

Course Number	Course Title	Credit Hours
Term 3		
-------	Humanites or History/Culture Course	3
AGB-330	Farm Business Management	3
AGB-466	Agricultural Finance	3
AGC-420	Issues in Agriculture	3
BIO-208	Agricultural Biology and Chemistry	3
SPC-101	Fundamentals of Oral Communication **OR**	3
ENG-106	Composition II	
		18
Term 4		
AGB-235	Introduction to Agriculture Markets	3
AGP-333	Precision Farming Systems	3
AGB-331	Entrepreneurship in Agriculture	3
AGB-101	Agricultural Economics **OR**	3
ECN-130	Principles of Microeconomics	
AGB-252	Agricultural Industry Business Management	3
-------	Approved Agriculture Elective	1
		16

Total program credit hours	65

Agricultural Business Diploma Requirements

Course Number	Course Title	Credit Hours
Term I		
AGC-130	Mathematics I - Agriculture	3
AGC-103	Ag Computers	3
AGB-133	Introduction to Ag Business	3
AGB-470	Farm Records, Accounts, Analysis	3
AGB-466	Agricultural Finance	3
AGC-116	Professionalism in Agriculture	1
AGC-123	Applied Ag Concepts	1
		17
Term 2		
AGB-323	Agricultural Procedures and Safety	1
AGB-336	Agricultural Selling	3
AGC-210	Employment Seminar	1
AGB-101	Agricultural Economics	3
AGB-330	Farm Business Management	3
AGB-252	Agricultural Industry Business Management	3
AGB-331	Entrepreneurship in Agriculture	3
AGB-235	Introduction to Agriculture Markets	3
	**Approved industry internship required for graduation as outlined by internship supervisor	
		20

Total program credit hours	37

Agribusiness Entrepreneurship Certificate Requirements

Course Number	Course Title	Credit Hours

Term I

AGB-470	Farm Records, Accounts, Analysis	3
AGB-466	Agricultural Finance	3
AGB-336	Agricultural Selling	3
AGB-331	Entrepreneurship in Agriculture	3
AGC-420	Issues in Agriculture	3
		15

Total program credit hours **15**

Agribusiness Farm Management Certificate Requirements

Course Number	Course Title	Credit Hours

Term I

AGB-470	Farm Records, Accounts, Analysis	3
AGB-466	Agricultural Finance	3
AGB-235	Introduction to Agriculture Markets	3
AGB-330	Farm Business Management	3
AGB-331	Entrepreneurship in Agriculture OR	3
AGB-336	Agricultural Selling OR	
AGB-101	Agricultural Economics	
		15

Total program credit hours **15**

Agribusiness Industry Management Certificate Requirements

Course Number	Course Title	Credit Hours

Term I

AGB-466	Agricultural Finance	3
AGB-336	Agricultural Selling	3
AGB-101	Agricultural Economics	3
AGB-252	Agricultural Industry Business Management	3
AGC-420	Issues in Agriculture	3
		15

Total program credit hours **15**

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 terms)

The Apparel Merchandising program is designed to provide students with knowledge and hands-on experiences in the apparel and textiles industry. Students will develop skills applicable for retail establishments, visual merchandising, and entrepreneurship. The coursework includes the organization and production of the annual fashion show. Additional learning opportunities outside the class-room environment consist of a supervised internship, fashion week, and digital magazine development.

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

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
APP-130	Principles of Fashion Merchandising	3
APP-140	Fashion History	3
APP-120	Apparel Visual Merchandising	3
ENG-105	Composition I	3
MAT-102	Intermediate Algebra **OR** Approved Math Course	4
		16
Term 2		
APP-160	Sewn Products Analysis	3
APP-170	Fashion Trends and Consumer Analysis	3
APP-240	Fashion Design	3
MGT-101	Principles of Management	3
SPC-101	Fundamentals of Oral Communication	3
		15
Term 3		
APP-210	Apparel Textiles	3
PSY-111	Introduction to Psychology	3
-------	Any course with subject code: ACC, APP, BUS, MGT, or MKT	3
APP-270	Fashion Buying	3
CSC-116	Information Computing	3
		15
Term 4		
APP-215	Sustainability in the Apparel and Textiles Industry	3
APP-220	Fashion Show Procedures	3
MGT-300	Introduction to Entrepreneurship	3
ECN-130	Principles of Microeconomics	3
-------	Humanities or History/Cultures Course	3
BUS-932	Internship	1
		16

Total program credit hours **62**

Optional

APP-924	Honors Project	1
APP-928	Independent Study	1

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 (5 terms including summer), some required evening classes

Architectural Technology AAS

Architectural Technology prepares graduates to become architectural CAD technicians. The program includes manual drafting as well as in depth instruction in CAD, computer applications (word processing, desktop publishing, multimedia), essential group skills (teamwork, project development and problem solving) and liberal arts studies. Practical experience is enhanced through a paid architectural/construction related internship or an unpaid architectural mentoring program.

Architectural Technology Certificate

Applies advanced techniques through a simulated architectural design office to develop everything from preliminary, schematic design concepts through full sets of construction documents. Design work includes hand sketches through state-of-the-art, 3D CAD and rendering software. Graduates of this certificate program will be well equipped for positions in various architectural and engineering firms.

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

Course Number	Course Title	Credit Hours
Term 1-Fall		
WBL-148	Workplace Project Based Learning: Industrial Technology	2
SDV-135	Job Seeking Skills	1
CON-101	Architectural Plans and Specifications	3
CON-331	Construction Materials Science	3
CON-410	Construction Modeling	3
-------	Math Course*	3
		15
Term 2-Spring		
CON-313	Structures and Mechanical/Electrical/Plumbing Systems	3
CAD-201	Introduction to Building Information Modeling	3
CON-190	Construction Lab	3
CON-322	Estimating for Construction and Architecture	3
-------	Communications Course*	3
		15

Course Number	Course Title	Credit Hours
Term 3-Summer		
CON-932	Internship	2
-------	Communications Course*	3
-------	Humanities or History/Culture Course	3
		8
Term 4-Fall		
CON-328	Construction Documentation	3
CON-316	Sustainable Construction Science	3
ARC-205	Design Studio-Residential	6
-------	Approved Social Science Course	3
		15
Term 5-Spring		
CON-257	Pre-Construction Services	3
CON-400	Construction Services, Project Close-Out and Commissioning	3
ARC-207	Design Studio-Commercial	6
		12

Total program credit hours   65

Optional Courses

ARC-924	Honors Project	1
ARC-928	Independent Study	1

Architectural Technology Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
CAD-201	Introduction to Building Information Modeling	3
		3
Term 2		
ARC-205	Design Studio-Residential	6
		6
Term 3		
ARC-207	Design Studio-Commercial	6
		6

Total program credit hours   15

*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 II **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 (5 terms including 1 summer)

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. 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 will gain experience using a variety of solutions including, but not limited to, industrial controls (electric, hydraulic, pneumatic), programmable logic controllers (PLCs), programmable automation controllers (PACs), process and instrumentation technologies, solid-state motor control technologies, automated conveying and material handling systems, inspection technologies, electronic operator interfaces (EOIs), motion control (servo and stepper controls), and automated manufacturing solutions.

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.

The Automation and Instrumentation Technologies program requires completion of the following third-party credential: OSHA 10 Hour - General Industry

Career opportunities: Controls technician, electrical and instrumentation (E & I) technician, controls engineer, process technician, automation technician, application engineer, technical salesperson.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1-Fall		
ELE-364	Basic Electrical Circuits	4
ATR-303	Mechanical Power Transmission	4
MAT-232	Applied Industrial Math for Technicians **OR**	3
MAT-707	Algebra Mastery I **AND**	
MAT-103	Applied Mathmatics Topics for Advanced Manufacturing	
IND-156	Microcomputers for the Trades **OR**	2
CSC-116	Information Computing	
		13
Term 2-Spring		
PHY-180	Applied Physics I **OR**	2
PHY-190	Physics I **OR**	

PHY-120	Introductory Physics	
ELT-224	Motors and Transformers	5
ATR-136	Programmable Logic Controllers for Manufacturing	4
ATR-310	Industrial Controls	5
		16
Term 3-Summer		
IND-196	Fundamentals of Hydraulic and Pneumatic Systems	5
ATR-316	Instrumentation & Control Devices	2
ATR-319	Process Control I	4
		11
Term 4-Fall		
ELE-365	Industrial Writing	3
ATR-254	PLC Integration	4
ATR-327	Process Control II	4
------	Communication Course	3
------	Humanities or History/Cultures Course	3
		17
Term 5-Spring		
ATR-323	Mechatronics I	2
ATR-201	Automation & Instrumentation Capstone	4
MGT-145	Human Relations in Management **OR**	3
PSY-111	Introduction to Psychology	
------	Communication Course	3
		12

Total program credit hours   **69**

Automotive Collision Repair & Restoration
Industrial Technologies
101 Jones Hall
319-398-4983
www.kirkwood.edu/industrialtech

Entry time
Fall

Award
Diploma
1 year (3 terms including summer)

Automotive Collision Repair and Restoration 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; glass installation; upholstery removal and replacement; 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

Course Number	Course Title	Credit Hours
Term 1-Fall		
CRR-121	Intro to Metalworking & Refinishing I	3
CRR-122	Intro to Metalworking & Refinishing II	3
CRR-820	Metalworking and Refinishing Practices	3
CRR-830	Metalworking and Refinishing I	3
WEL-333	Auto Collision Welding	2
MAT-715	Industrial Math I	3
		17
Term 2-Spring		
CRR-342	Metalworking II	4
CRR-344	Metalworking III	4
CRR-833	Refinishing II	3
CRR-837	Refinishing III	3
AUT-603	Basic Automotive Electricity	3
		17
Term 3-Summer		
CRR-545	Body Straightening/Painting and Restoration	7
---------	Communications Course	3
		10
Total program credit hours		**44**

Automotive Collision Repair tool requirements
Students in the Auto Collision Repair program are required to have a tool set for lab activities.

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 (5 terms including 1 summer)

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 elec-trical, engine electrical and computerized fuel delivery systems. This program is MasterTM-certified by the National Automotive Technicians Education Foundation (NATEF), and the National Institute of Automotive Services Excellence certifies our instructors as Master Technicians. Kirkwood is an authorized SnapOn Certified Training Center.

After you complete the SnapOn Diagnostic products training and pass the rigorous test, you are considered a power user of SnapOn 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.

This program provides the opportunity to take eight ASE certification tests. Graduation from this program requires Automotive Arc FLash and 300 hours of faculty approved industry work.

The Entry Level Automotive Technology diploma provides fundamental level skills and knowledge for students who want to work in introductory level positions in the automotive technology field. Students complete the first courses in two-course sequences covering the major areas of automotive service technology, and can opt to complete the second courses in these sequences by moving on to the degree. The curriculum emphasizes automotive electronics and features courses in body electrical, engine electrical and computerized fuel delivery systems. This program is overall MasterTM-certified by the National Automotive Technicians Education Foundation (NATEF) and the National Institute of Automotive Services Excellence certifies our instructors as Master Technicians.

The Fundamentals of Automotive Technology certificate provides basic level skills and knowledge for students who want to work in positions such as tire technician or lube technician in the automotive technology field. This program is overall MasterTM-certified by the National Automotive Technicians Education Foundation (NATEF) and the National Institute of Automotive Services Excellence certifies our instructors as Master Technicians.

The Advanced Chassis certificate provides beginning through advanced level skills and knowledge in the areas of suspension, steering, heating, air conditioning, and brakes. Students can use this certificate to help obtain a position as an automotive technician specializing in these areas. This program is overall MasterTM-certified by the National Automotive Technicians Education Foundation (NATEF) and the National Institute of Automotive Services Excellence certifies our instructors as Master Technicians.

The Advanced Drivetrain certificate provides beginning through advanced level skills and knowledge in the areas of manual transmissions and transaxles and automatic transmissions and transaxles. Students can use this certificate to help obtain a position as an automotive technician specializing in these areas.This program is overall MasterTM-certified by the National Automotive Technicians Education Foundation (NATEF) and the National Institute of Automotive Services Excellence certifies our instructors as Master Technicians.

The Advanced Powertrain certificate provides beginning through advanced level skills and knowledge in the areas of advanced comuterized engine controls, engine repair, and hybrid vehicle maintenance and repair. Students can use this certificate to help obtain a position as an automotive technician specializing in these areas.This program is over-all MasterTM-certified by the National Automotive Technicians Education Foundation (NATEF) and the National Institute of Automotive Services Excellence certifies our instructors as Master Technicians.

A tool set is required for this program.

Career opportunities: auto dealerships; franchised auto centers; independent repair facilities; specialty service shops; auto sales and support; fleet maintenance.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1-Fall		
AUT-104	Introduction to Automotive Technology	3
AUT-614	Automotive Electrical I	3
AUT-502	Automotive Brake Systems	2
MAT-715	Industrial Math I	3
AUT-888	Technical Lab I **OR**	4
AUT-100	Maintenance & Light Repair	
------	Graduation from the AAS degree requires 300 hours of faculty approved industry work	
		15
Term 2-Spring		
AUT-308	Automotive Manual Drive Train and Axles I	2
AUT-402	Automotive Suspension and Steering	2
AUT-702	Automotive Heating and Air Conditioning	2
AUT-310	Computerized Engine Controls I	2
AUT-658	Automotive Electrical II	3
AUT-889	Technical Lab II	4
------	Communications Elective*	3
		18
Term 3-Summer		
AUT-309	Automotive Manual Drive Train and Axles II	2
AUT-708	Advanced Automotive Heating and Air Conditioning	2
------	Social Science Elective	3
------	Communications Elective*	3
		10
Term 4-Fall		
AUT-164	Automotive Engine Repair	4
AUT-406	Advanced Automotive Suspension and Steering	2
AUT-536	Advanced Automotive Brake Systems	2
AUT-311	Computerized Engine Controls II	3

Course Number	Course Title	Credit Hours
AUT-680	Automotive Electrical III	3
		14
Term 5-Spring		
AUT-204	Automotive Automatic Transmissions and Transaxles	4
AUT-221	Hybrid Electric Vehicle Fundamentals	4
AUT-312	Computerized Engine Controls III	4
------	Humanities or History/Culture Course	3
		15
Total program credit hours		**72**
AUT-928	Independent Study	1
AUT-924	Honors Project	1

Entry Level Automotive Technology Diploma Requirements

Course Number	Course Title	Credit Hours
Term 1		
AUT-104	Introduction to Automotive Technology	3
AUT-614	Automotive Electrical I	3
AUT-502	Automotive Brake Systems	2
MAT-715	Industrial Math I	3
AUT-888	Technical Lab I **OR**	4
AUT-100	Maintenance & Light Repair	
		15
Term 2		
AUT-308	Automotive Manual Drive Train and Axles I	2
AUT-402	Automotive Suspension and Steering	2
AUT-702	Automotive Heating and Air Conditioning	2
AUT-310	Computerized Engine Controls I	2
AUT-658	Automotive Electrical II	3
AUT-889	Technical Lab II	4
------	Communications Elective*	3
		18
Total program credit hours		**33**

Fundamentals of Automotive Technology Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
AUT-104	Introduction to Automotive Technology	3
AUT-614	Automotive Electrical I	3
MAT-715	Industrial Math I	3
AUT-888	Technical Lab I **OR**	4
AUT-100	Maintenance & Light Repair	
		13
Total program credit hours		**13**

Advanced Chassis Certificate Requirements

Course Number	Course Title	Credit Hours

Term 1

AUT-502	Automotive Brake Systems	2
		2

Term 2

AUT-402	Automotive Suspension and Steering	2
AUT-702	Automotive Heating and Air Conditioning	2
		4

Term 3

AUT-708	Advanced Automotive Heating and Air Conditioning	2
		2

Term 4

AUT-406	Advanced Automotive Suspension and Steering	2
AUT-536	Advanced Automotive Brake Systems	2
		4
Total program credit hours		**12**

Advanced Drivetrain Certificate Requirements

Course Number	Course Title	Credit Hours

Term 1

AUT-308	Automotive Manual Drive Train and Axles I	2
AUT-658	Automotive Electrical II	3
		5

Term 2

AUT-309	Automotive Manual Drive Train and Axles II	2
		2

Term 3

AUT-680	Automotive Electrical III	3
		3

Term 4

AUT-204	Automotive Automatic Transmissions and Transaxles	4
		4
Total program credit hours		**14**

Advanced Powertrain Certificate Requirements

Course Number	Course Title	Credit Hours

Term 1

AUT-164	Automotive Engine Repair	4
		4

Term 2

AUT-312	Computerized Engine Controls III	4
AUT-221	Hybrid Electric Vehicle Fundamentals	4
		8
Total program credit hours		**12**

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:

ENG-105 Composition 1 **AND**
ENG-108 Comp II: Technical Writing **OR**
ENG-106 Composition
FOR   ------ Communications Electives

Baking and Pastry Arts Diploma
Hospitality Arts
The Hotel at Kirkwood Center
319-848-8770
www.kirkwood.edu/hospitality

Entry time
Fall or Spring

Award
Diploma
1 year (2 terms)

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

Course Number	Course Title	Credit Hours

Term 1

HCM-117	Bakery Basics	3

HCM-125	Basic Cake Decorating	1
HCM-100	Sanitation and Safety	2
HCM-126	Science of Baking	2
HCM-260	Hospitality Math	3
HCM-122	International Breads	3
HCM-123	International Pastries	3
HCM-190	Bakery Essentials	1
		18

Term 2

HCM-279	Hospitality Accounting **OR**	3
HCM-256	Cost Control and Merchandising	
COM-723	Workplace Communication **OR**	3
ENG-105	Composition I	
HCM-349	Advanced Baking and Pastry	2
HCM-289	Wedding Cake Decorating	2
HCM-351	Advanced Cake Decorating	2
HCM-268	Baking for Dietary Restrictions	2
HCM-231	Nutrition	2
		16

Total program credit hours		34

Business Administration

Transfer track
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 terms)

The Business Administration program prepares students for careers in diverse areas of business and is based on a strong foundation of business and general education courses. Upon completion of the program, students may choose to transfer to the Henry B. Tippie College of Business at the University of Iowa, the Mount Mercy University College of Business, or go directly into the workforce with a marketable credential.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
BUS-101	Orientation to Business Professionalism	1
BUS-102	Introduction to Business	3
ENG-105	Composition I	3
MAT-162	Business Statistics	4
---------	Approved Social Science Course*	3
CSC-116	Information Computing	3
		17

Term 2

MGT-101	Principles of Management	3
ENG-108	Composition II: Technical Writing **OR**	3
ENG-106	Composition II	
MAT-165	Business Calculus	3
SPC-101	Fundamentals of Oral Communication **OR**	3
SPC-112	Public Speaking	
PHI-105	Introduction to Ethics	3
		15

Term 3

ECN-130	Principles of Microeconomics	3
ACC-152	Financial Accounting	4
BUS-185	Business Law I	3
---------	Approved Humanities Course*	3
---------	Approved Science Course*	3
		16

Term 4

ACC-156	Managerial Accounting	4
ECN-120	Principles of Macroeconomics	3
---------	Approved Literature Course*	3
---------	Approved Political Science Course*	3
---------	Any Business Course with the following subject codes: ACC, BUS, FIN, MGT, MKT	3
BUS-294	Business Administration Capstone**	1
		17

Total program credit hours		65

*Select a course from the approved list for your transfer institution. See your advisor for additional guidance.

** Must be taken in final term-permission required

Business Administration: Accounting

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

Entry time
Fall (recommended), Spring, Summer
Award
Associate of Applied Science degree
2 years (5 terms)
Technical Accounting Certificate
1 year (3 terms)

Kirkwood Community College offers several options for students interested in accounting careers. The Business Administration: Accounting AAS degree provides students with the background they need for entry-level positions in general accounting, cost accounting, tax accounting or other specialized areas of financial accounting and financial reporting.

Career opportunities: cost accounting; general accounting; office manager.

The Technical Accounting certificate provides students with the skills needed for employment in entry-level accounting clerk positions. The certificate is a great way to get back into the workforce, change career direction or enhance existing skills.

Career opportunities: accounts payable clerk; accounts receivable clerk; payroll clerk; tax preparer.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
ACC-152	Financial Accounting	4
BUS-101	Orientation to Business Professionalism	1
BUS-102	Introduction to Business OR	3
MGT-101	Principles of Management	
CSC-116	Information Computing	3
ENG-105	Composition I	3
		14
Term 2		
ACC-156	Managerial Accounting	4
ACC-313	Accounting Applications**	4
ENG-108	Composition II: Technical Writing OR	3
ENG-106	Composition II	
SPC-112	Public Speaking OR	3
SPC-101	Fundamentals of Oral Communication	
		14
Term 3		
ECN-130	Principles of Microeconomics OR	3
ECN-120	Principles of Macroeconomics	
MAT-157	Statistics OR	4
	Approved Math course	
		7
Term 4		
ACC-222	Cost Accounting*	4
ACC-231	Intermediate Accounting I*	4
ACC-265	Income Tax Accounting*	4
PHI-105	Introduction to Ethics	3
		15
Term 5		
ACC-232	Intermediate Accounting II**	4
ACC-362	Accounting Spreadsheets**	4
ACC-491	Accounting Capstone**	3
-------	Business Elective	3
ACC-949	Special Topics OR	1
BUS-192	Professionalism: Business Competition OR	
BUS-932	Internship	
		15

Total program credit hours		65
Optional		
ACC-191	Financial Analysis	3
Business Electives		
BUS-185	Business Law I	3
BUS-932	Internship	3
ECN-120	Principles of Macroeconomics	3
ECN-130	Principles of Microeconomics	3
MAT-162	Business Statistics	4
MGT-101	Principles of Management	3
MKT-110	Principles of Marketing	3
PSY-111	Introduction to Psychology	3

Technical Accounting Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
ACC-152	Financial Accounting	4
CSC-116	Information Computing	3
		7
Term 2		
ACC-156	Managerial Accounting	4
ACC-265	Income Tax Accounting*	4
		8
Term 3		
ACC-313	Accounting Applications**	4
BCA-213	Intermediate Computer Business Applications OR	3
ACC-362	Accounting Spreadsheets**	
		7

Total program credit hours	22

*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: Administrative Management
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 terms)

This program prepares graduates to become members of an executive team in today's fast-paced business environment. It includes in-depth instruction in com-

puter applications (personal management software and productivity software such as presentation, word processing, and spreadsheet applications) and essential workplace "soft skills" (teamwork, leadership, and problem solving). Students can earn a certificate in project management by completing this degree.

Career Opportunities: executive assistant, administrative assistant, office manager, office administrator, administrative manager.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
BUS-101	Orientation to Business Professionalism	1
BUS-102	Introduction to Business	3
ENG-105	Composition I	3
ADM-133	Business Math and Calculators **OR**	3
MAT-102	Intermediate Algebra (or higher)	
MGT-145	Human Relations in Management **OR**	3
PSY-111	Introduction to Psychology	
		13
Term 2		
ACC-111	Introduction to Accounting **OR**	3
ACC-152	Financial Accounting	
ADM-163	Office Concepts and Procedures*	3
BCA-136	Advanced Word Processing	3
CSC-116	Information Computing	3
MGT-121	Project Management Basics	3
		15
Term 3		
-------	Humanities or History/Culture Course	3
MGT-170	Human Resources Management	3
		6
Term 4		
ADM-164	Administrative Office Applications	3
BCA-213	Intermediate Computer Business Applications	3
BCA-179	Emerging Technology Trends	3
ENG-108	Composition II: Technical Writing	3
MGT-130	Principles of Supervision	3
		15
Term 5		
ADM-187	Administrative Management Capstone	1
BUS-280	Fundamentals of Lean Process Improvement **OR**	3
MGT-161	Agile Project Management with Scrum	
BUS-290	Employment Search and Workplace Success	1
MGT-124	Project Management Tools	3

Course Number	Course Title	Credit Hours
MGT-155	Integrated Project Management	3
BUS-932	Internship	2
		13

Total program credit hours		**62**

Project Management Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
MGT-121	Project Management Basics	3
MGT-130	Principles of Supervision	3
		6
Term 2		
MGT-124	Project Management Tools	3
MGT-155	Integrated Project Management*	3
MGT-161	Agile Project Management with Scrum **OR**	3
BUS-280	Fundamentals of Lean Process Improvement	
		9

Total program credit hours		**15**

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

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 terms)

The Financial Services program is designed for students seeking careers with financial institutions and for those already at 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

Course Number	Course Title	Credit Hours

Term 1

BUS-101	Orientation to Business Professionalism	1
BUS-102	Introduction to Business	3
MGT-145	Human Relations in Management **OR**	3
PSY-111	Introduction to Psychology	
ENG-105	Composition I	3
-------	Approved Math Course	3
		13

Term 2

CSC-116	Information Computing	3
ENG-108	Composition II: Technical Writing **OR**	3
ENG-106	Composition II	
MKT-140	Principles of Selling	3
FIN-121	Personal Finance	3
		12

Term 3

BUS-185	Business Law	3
ECN-120	Principles of Macroeconomics	3
-------	Humanities or History/Culture Course	3
		9

Term 4

ACC-152	Financial Accounting	4
FIN-110	Money and Banking*	3
ECN-130	Principles of Microeconomics	3
MGT-101	Principles of Management	3
-------	Program Electives	3
		16

Term 5

ACC-156	Managerial Accounting	4
BUS-932	Internship	3
FIN-130	Principles of Finance**	3
FIN-300	Topics in Financial Services**	3
MKT-180	Customer Service Strategies	1
		14

Total program credit hours   64

Program Electives:

MGT-130	Principles of Supervision	3
ACC-313	Accounting Applications	4
ACC-362	Accounting Spreadsheets	4
BUS-192	Professionalism: Business Competition	1
MGT-139	Effective Team Building for Managers	1
MGT-140	Time Management in the Workplace	1
MGT-205	Introduction to Global Trade	3
MGT-206	Global Business Skills	3
MGT-300	Introduction to Entrepreneurship	3
MKT-110	Principles of Marketing	3
MKT-130	Social Media in Business	3

*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 terms)
Certificate options (see advisor)

The Management program provides an extensive selection of management courses. It is designed for someone who would like to develop management skills for career advancement.

This program offers many management and general electives from which to choose 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, and global perspectives.

Courses in the program are available online or on WebLive at all of Kirkwood's seven-county areas. Students should work with their advisor to develop a solid plan that best meets their education goals.

Career opportunities: front-line to middle-level management; advancement into supervisory capacity; small business owner.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
BUS-101	Orientation to Business Professionalism	1
BUS-102	Introduction to Business	3
MGT-145	Human Relations in Management **OR**	3
PSY-111	Introduction to Psychology	
ENG-105	Composition I	3
-------	Approved Math Course	3
		13
Term 2		
BUS-192	Professionalism: Business Competition	1
CSC-116	Information Computing	3
MGT-101	Principles of Management	3
ENG-108	Composition II: Technical Writing **OR**	3
ENG-106	Composition II	
SPC-101	Fundamentals of Oral Communication **OR**	3
SPC-112	Public Speaking **OR**	

MKT-140	Principles of Selling	
		13

Term 3

MGT-121	Project Management Basics	3
MGT-170	Human Resource Management	3
------	Humanities or History/Culture Course	3
		9

Term 4

ECN-120	Principles of Macroeconomics **OR**	3
ECN-130	Principles of Microeconomics	
MGT-130	Principles of Supervision	3
MGT-206	Global Business Skills	3
MGT-300	Introduction to Entrepreneurship	3
MKT-110	Principles of Marketing	3
		15

Term 5

ACC-111	Introduction to Accounting **OR**	3
ACC-152	Financial Accounting	
MGT-301	Management Capstone	3
------	Management Electives	6
		12

Total program credit hours	62

Management Electives

Management elective credit may be used to earn a certificate.

See your advisor for online availability.

BUS-185	Business Law I	3
BUS-280	Fundamentals of Lean Process Improvement	3
ACC-156	Managerial Accounting*	4
ACC-362	Accounting Spreadsheets*	4
ACC-265	Income Tax Accounting	4
ACC-313	Accounting Applications*	4
APP-120	Apparel Visual Merchandising*	3
BCA-167	Comprehensive Databases*	3
BCA-213	Intermediate Computer Business Applications*	3
BCA-290	Web Design Principles	3
BUS-932	Internship	1-6
CIS-128	Programming Concepts*	3
CIS-290	Web Content and E-Commerce Systems*	3
ECN-120	Principles of Macroeconomics	3
ECN-130	Principles of Microeconomics	3
FIN-121	Personal Finance	3
MGT-124	Project Management Tools*	3
MGT-137	Developing Leadership Skills	1
MGT-139	Effective Team Building for Managers	1
MGT-140	Time Management in the Workplace	1
MGT-155	Integrated Project Management*	3
MGT-161	Agile Project Management with Scrum	3

MGT-171	Human Resource Strategies-Talent Management and Employee Relations*	3
MGT-179	Human Resource Strategies-Total Rewards, Safety and Labor*	3
MGT-205	Introduction to Global Trade	3
MGT-305	Business Plans for Entrepreneurs*	3
MKT-130	Social Media in Business*	3
MKT-135	Content Marketing*	3
MKT-140	Principles of Selling	3
MKT-150	Principles of Advertising	3
MKT-160	Principles of Retailing	3
MKT-180	Customer Service Strategies	1

Optional Courses

BUS-928	Independent Study	1
BUS-924	Honors Project	1
MGT-924	Honors Project	1
BUS-949	Special Topics	1
MGT-928	Independent Study	3
MGT-112	Business Innovation	3

Human Resources Certificate Requirements

Course Number	Course Title	Credit Hours

Term 1

CSC-116	Information Computing	3
MGT-101	Principles of Management	3
MGT-170	Human Resource Management	3
		9

Term 2

MGT-171	Human Resource Strategies-Talent Management and Employee Relations*+	3
MGT-179	Human Resources Strategies-Total Rewards, Safety and Labor*+	3
		6

Total program credit hours	15

Entrepreneurship Certificate Requirements

Course Number	Course Title	Credit Hours

Term 1

MGT-300	Introduction to Entrepreneurship	3
MGT-130	Principles of Supervision **OR**	3
BCA-290	Web Design Principles**	
MKT-110	Principles of Marketing	3
		9

Term 2

MKT-130	Social Media for Business*	3
MGT-305	Business Plans for Entrepreneurs*	3
MGT-170	Human Resource Management **OR**	3
CIS-290	Web Content and E-Commerce Systems** **OR**	
MKT-135	Content Marketing	

		9
Total program credit hours		**18**

Global Perspectives in Business Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
MGT-205	Introduction to Global Trade	3
MGT-206	Global Business Skills	3
MGT-300	Introduction to Entrepreneurship	3
-------	Global Perspectives Elective	3
		12
Total program credit hours		**12**

Global Perspectives Electives

CLS-151	Understanding Cultures: Latin America	3
CLS-165	Understanding Cultures: Modern Japan	3
GLS-120	Education Experience Abroad	3
FLC-142	Elementary Chinese II	4
FLS-142	Elementary Spanish II	4
FLF-142	Elementary French II	4
REL-101	Survey of World Religions	3

*Prerequisite required. See MyHub or your advisor.

+Minimum grade requirement is C- to earn certificate

** Students should choose this course if intending to have a web-based business or non-employee based sole proprietor

Business Administration: Marketing 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 terms)

Marketing and Management are two of the most popular majors in colleges today, due to the vast employment opportunities available. Marketing Management is a hybrid program offering both marketing and management in one degree. 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 every kind of organization to grow and prosper allowing vast employment opportunities. It is the marketing professional's 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, Snapchat 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 Marketing, Sales, and Social Media Marketing. Please consult with the Business and Information Technology Department for more information.

Career opportunities: buyer; sales; retail; wholesaling; advertising; marketing; public relations; media planning; sales strategy; marketing research; real estate; social media manager, and more.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
BUS-101	Orientation to Business Professionalism	1
BUS-102	Introduction to Business	3
MGT-145	Human Relations in Management **OR**	3
PSY-111	Introduction to Psychology	
ENG-105	Composition I	3
-------	Approved Math Course	3
		13
Term 2		
CSC-116	Information Computing	3
MGT-101	Principles of Management	3
ENG-108	Composition II Technical Writing **OR**	3
ENG-106	Composition II	
MKT-140	Principles of Selling **OR**	3
SPC-101	Fundamentals of Oral Communication **OR**	
SPC-112	Public Speaking	
		12
Term 3		
BUS-932	Internship	3
-------	Humanities or History/Culture Course	3
ECN-120	Principles of Macroeconomics **OR**	3
ECN-130	Principles of Microeconomics	
		9
Term 4		
MKT-110	Principles of Marketing	3
MKT-150	Principles of Advertising	3
MKT-180	Customer Service Strategies	1
ACC-111	Introduction to Accounting **OR**	3
ACC-152	Financial Accounting	
-------	Marketing Elective	3
		13

Term 5

MKT-130	Social Media in Business	3
MKT-135	Content Marketing	3
MKT-160	Principles of Retailing*	3
MKT-195	Marketing Management*	3
BUS-290	Employment Search and Workplace Success	1
-------	Marketing Elective	3
		16

Total program credit hours   63

Marketing Electives

APP-120	Apparel Visual Merchandising	3
BCA-213	Intermediate Computer Business Applications	3
BCA-290	Web Design Principles	3
BUS-932	Internship	3
CIS-128	Programming Concepts	3
CIS-290	Web Content and E-Commerce Systems	3
FIN-121	Personal Finance	3
GLS-120	Education Experience Abroad	3
MGT-121	Project Management Basics	3
MGT-130	Principles of Supervison	3
MGT-140	Time Management in the Workplace	1
MGT-170	Human Resource Management	3
MGT-171	Human Resource Strategies-Talent Management and Employee Relations	3
MGT-179	Human Resource Strategies-Total Rewards, Safety and Labor	3
MGT-300	Introduction to Entrepreneurship	3
MGT-305	Business Plans for Entrepreneurs	3
MKT-140	Principles of Selling	3

Optional Courses

MKT-924	Honors Project	1
MKT-928	Independent Study	1

Retail Marketing Certificate Requirements

Course Number	Course Title	Credit Hours

Term 1

APP-120	Apparel Visual Merchandising	3
MKT-130	Social Media in Business	3
MKT-140	Principles of Selling	3
MKT-150	Principles of Advertising	3
MKT-160	Principles of Retailing*	3
MKT-180	Customer Services Strategies	1
		16

Total program credit hours   16

Sales Certificate Requirements

Course Number	Course Title	Credit Hours

Term 1

MKT-110	Principles of Marketing	3
MKT-140	Principles of Selling	3
MKT-180	Customer Service Strategies	1

MGT-140	Time Management in the Workplace	1
CSC-116	Information Computing	3
		11

Term 2

MKT-130	Social Media in Business	3
BCA-213	Intermediate Computer Business Applications	3
		6

Total program credit hours   17

Social Media Marketing Certificate

Course Number	Course Title	Credit Hours

Term 1

MKT-110	Principles of Marketing	3
CSC-116	Information Computing	3
BCA-290	Web Design Principles	3
		9

Term 2

MKT-130	Social Media in Business	3
MKT-135	Content Marketing	3
CIS-290	Web Content and E-Commerce Systems	3
		9

Total program credit hours   18

*only offered in the Spring term

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 (5 terms including summer)
Diploma
1 year (3 terms including summer)

The CAD/Mechanical Engineering Technology curriculum prepares students for entry-level positions as mechanical 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 U of I, UNI or Wil-

liam Penn University and work toward a B.S. in manufacturing, applied studies or industrial technology.

Industry Endorsements students can earn include the Solidworks and 3D Printing certificate.

Career opportunities: engineering technician; test lab technician; CAD operator/designer; technical writer; mechanical engineering assistant.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1-Fall		
CAD-110	Introduction to Parametric Solid Modeling	2
DRF-141	Engineering Drawings	2
DRF-142	Engineering Design I **OR**	3
EGT-400	PLTW - Introduction to Engineering Design	
MAT-745	Technical Mathematics I	4
PHY-190	Physics I	3
IND-156	Microcomputers for the Trades **OR**	2
CSC-116	Information Computing	
		16
Term 2-Spring		
MAT-746	Technical Mathematics II	4
PHY-192	Physics II	3
EGT-125	Applied Statics	4
DRF-143	Engineering Design II	3
CAD-140	Parametric Solid Modeling I	3
		17
Term 3-Summer		
---------	Communication Course*	3
MGT-145	Human Relations in Management **OR**	3
PSY-111	Introduction to Psychology	
---------	Humanities or History/Culture Course	3
		9
Term 4-Fall		
CAD-168	Introduction to 3D Printing	2
EGT-124	Strength of Materials	4
MFG-202	Manufacturing Processes	2
EGT-132	Kinematics	4
EGT-148	Hydraulics and Basic Circuits	3
CAD-141	Parametric Solid Modeling II	3
		18
Term 5-Spring		
CAD-237	Geometric Dimensioning & Tolerancing	3
CAD-147	Parametric Solid Modeling III	3
EGT-136	Dynamics	4
EGT-185	Design Project	3
EGT-195	Machine Design	3
---------	Communications Course*	3
		19

Total program credit hours		**79**
Optional Courses		
CAD-805	CAD Projects	1
CAD-928	Independent Study	1
CAD-924	Honors Project	1
EGT-410	PLTW-Principles of Engineering	3
DRF-924	Honors Project	1

Diploma Requirements

Course Number	Course Title	Credit Hours
Term 1-Fall		
CAD-110	Introduction to Parametric Solid Modeling	2
DRF-141	Engineering Drawings	2
DRF-142	Engineering Design I **OR**	3
EGT-400	PLTW - Principles of Engineering Design	
MAT-745	Technical Mathematics I	4
PHY-190	Physics I	3
IND-156	Microcomputers for the Trades **OR**	2
CSC-116	Information Computing	
		16
Term 2-Spring		
CAD-140	Parametric Solid Modeling I	3
MAT-746	Technical Mathematics II	4
PHY-192	Physics II	3
EGT-125	Applied Statics	4
DRF-143	Engineering Design II	3
		17
Term 3-Summer		
---------	Communications Course	3
MGT-145	Human Relations in Management **OR**	3
PSY-111	Introduction to Psychology	
---------	Humanities or History/Culture Course	3
		9

Total program credit hours		**42**

Computer Aided Design (CAD) Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
CAD-110	Introduction to Parametric Solid Modeling	2
IND-156	Microcomputers for the Trades **OR**	2
CSC-116	Information Computing	
		4
Term 2		
CAD-140	Parametric Solid Modeling I	3
		3
Term 3		
CAD-141	Parametric Solid Modeling II	3
		3

Term 4

CAD-147	Parametric Solid Modeling III	3
		3

Total program credit hours 13

*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

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

Entry time
Fall

Award
Diploma
1 year (2 terms)

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.

This program requires OSHA-10 Construction and Adult First Aid with CPR.

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

Course Number	Course Title	Credit Hours
Term 1-Fall		
CON-311	Building Construction Systems I	3
CON-101	Architectural Plans and Specifications	3
CON-211	Carpentry Fundamentals I **OR**	3
CON-190	Construction Lab	
CON-212	Carpentry Fundamentals II	3
CON-134	Surveying and Site Layout	2
CON-932	Internship	1
MAT-716	Industrial Math II **OR** Approved Math Course	3
		18
Term 2-Spring		
CON-142	Carpentry Fundamentals III	3
CON-143	Carpentry Fundamentals IV	3
CON-126	Building Construction Systems II	3

CON-322	Estimating for Construction and Architecture	3
CON-932	Internship	2
		14

Total program credit hours 32

Optional

CON-239	Construction Project	3

Tool requirements: Students in the Carpentry program are required to have a tool set for lab activities. Instructors provide students with a list of minimum requirements. Estimated cost of these tools is $250.

Carpentry students are required to complete hands-on coursework at a job site out of town certain days of the week. Please see the instructor for more information.

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 (5 terms including summer)
Diploma
1 year (3 terms including summer)

Computer Numerical Control (CNC) machinists manufacture precision parts and products. They often complete many set-ups for short runs to meet just-in-time delivery demands. People who enter this field must be flexible and have basic knowledge of machine tool CNC. Students program, edit, set up and operate CNC lathes and mills, as well as study quality control methods known as statistical process control. They also learn special quality control equipment, such as coordinate measuring machines, and advanced automated production methods.

Students can transfer credits from this program to UNI and work toward a B.A. in Technology Management and the University of Iowa and work towards a B.A. in Applied Studies.

Students are required to attain the following third party credentials as a a part of the two year AAS degree program: NIMS Level 1 Certifications.

Career opportunities: machinist; mold builder; salesperson; job shop technician; CNC programmer/operator; quality control technician; tool and die maker.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1-Fall		
MFG-128	Measurement, Materials, and Safety (NIMS)	2

MFG-129	Job Planning, Benchwork, and Layout (NIMS)	2
MFG-297	Milling Machine Operations (NIMS)	3
MFG-299	Turning Operations (Turning Between Centers - NIMS)	3
MFG-324	Turning Operations (Turning in a Chuck - NIMS)	3
MAT-735	Machinist Mathematics I	2
MFG-120	Machinist Trade Printreading I	1
		16

Term 2-Spring

MFG-173	CNC Mill Operator (NIMS)	2
MFG-174	CNC Lathe Operator (NIMS)	2
MFG-298	Surface Grinding Operations (NIMS)	2
MFG-332	CNC Mill Program and Setup (NIMS)	3
MFG-334	CNC Lathe Program and Setup (NIMS)	3
MAT-736	Machinist Mathematics II	1
MFG-130	Machine Trade Printreading II	1
IND-156	Microcomputers for the Trades	2
		16

Term 3-Summer

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
		10

Term 4-Fall

CAD-237	Geometric Dimensioning and Tolerancing	3
CAD-300	AutoCAD for Applied Engineering	2
CAD-301	Inventor for Applied Engineering	2
MFG-342	CNC Lathe Operations (NIMS)	2
MFG-343	CNC Milling Operations (NIMS)	2
----------	Communications Course	3
----------	Humanities or History/Culture Course	3
		17

Term 5-Spring

MFG-396	Alternative Manufacturing Processes	3
MFG-317	Automated Production Methods	5
MFG-348	EDM Wire Operations (NIMS)	1
-------	Communication Course	3
MGT-145	Human Relations in Management	3
	OR	
PSY-111	Introduction to Psychology	
		15

Total program credit hours	**74**

Optional Courses

MFG-924	Honors Project	1
MFG-928	Independent Study	1

Diploma Requirements

Course Number	Course Title	Credit Hours

Term 1-Fall

MFG-128	Measurement, Materials, and Safety (NIMS)	2
MFG-129	Job Planning, Benchwork, and Layout (NIMS)	2
MFG-297	Milling Machine Operations (NIMS)	3
MFG-299	Turning Operations (Turning Between Centers - NIMS)	3
MFG-324	Turning Operations (Turning in a Chuck - NIMS)	3
MAT-735	Machinist Mathematics I	2
MFG-120	Machinist Trade Printreading I	1
		16

Term 2-Spring

MFG-173	CNC Mill Operator (NIMS)	2
MFG-174	CNC Lathe Operator (NIMS)	2
MFG-298	Surface Grinding Operations (NIMS)	2
MFG-332	CNC Mill Program and Setup (NIMS)	3
MFG-334	CNC Lathe Program and Setup (NIMS)	3
MAT-736	Machinist Mathematics II	1
MFG-130	Machine Trade Printreading II	1
IND-156	Microcomputers for the Trades	2
		16

Term 3-Summer

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
		10

Total program credit hours	**42**

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 $2,500 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 (5 terms including summer)

Certificates in Java Programming, .NET Programming, Mobile App Development and Database Analytics and Reporting are available.

Those who 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; software developer; systems analyst; web designer; software tester; client/server application developer; internet programmer.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
CIS-103	IT Career Exploration	1
CIS-121	Introduction to Programming Logic** OR	3
CIS-450	PLTW-Computer Science Principles OR	
CSC-142	Computer Science	
CSC-116	Information Computing OR	3
NET-165	Network Plus	
CIS-207	Fundamentals of Web Programming*	3
ENG-105	Composition I	3
-------	Approved Math Course+	5
		18
Term 2		
CIS-171	Java** OR	3
CSC-142	Computer Science**	
CIS-335	Relational Database Technologies and SQL*	3
CIS-622	.NET Development I	3
---------	Social Science Course	3
---------	Humanities or History/Culture Course	3
		15

Term 3-Summer		
SPC-101	Fundamentals of Oral Communications OR	3
ENG-106	Composition II OR	
SPC-112	Public Speaking OR	
ENG-108	Composition II: Technical Writing	
		3
Term 4		
CIS-175	Java II*	3
CIS-624	.NET Development II*	3
CIS-504	Structured Systems Analysis*	3
CIS-280	Client Side Scripting	3
BUS-290	Employment Search and Workplace Success	1
-------	Technical/Business Elective	3
		16
Term 5		
CIS-181	Java III	3
CIS-626	.NET Development III	3
CIS-802	Programming Capstone Project	3
CSC-153	Data Structures	4
-------	Technical/Business Elective	3
		16

Total program credit hours — 68

Technical/Business Electives

BCA-290	Web Design Principles	3
CIS-135	Microcomputer Operating Systems	3
CIS-249	Web Languages	3
CIS-326	Business Intelligence Tools	3
CIS-327	Applied Analytics and Reporting	3
CIS-342	PHP/Apache/MySQL II	3
CIS-334	PHP/Apache/MySQL	3
CIS-354	Data Analytics and Reporting Projects	3
CIS-370	Fundamentals of 2D Visualizations and Games	3
CIS-371	Developing 3D Simulations and Games	3
CSC-160	Software Design and Development	4
CSC-175	Computer Organization and Assembly Language Programming	4
MAT-136	Trigonometry and Analytic Geometry	5
MAT-140	Finite Math	3
MAT-150	Discrete Math	3
MAT-157	Statistics	4
MAT-162	Business Statistics	4
MAT-165	Business Calculus	3
MGT-121	Project Management Basics	3
BUS-932	Internship	3
	Any course with the following subject codes: ACC-, EGR-, FIN-, MDT-, NET-, PHY-	3

Java Programming Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
CIS-121	Introduction to Programming Logic** **OR**	3
CIS-450	PLTW-Computer Science Principles** **OR**	
CSC-142	Computer Science**	
		3
Term 2		
CIS-171	Java** **OR**	3
CSC-142	Computer Science**	
CIS-335	Relational Database Technologies and SQL*	3
		6
Term 3		
CIS-175	Java II*	3
		3
Term 4		
CIS-181	Java III*	3
		3
Total program credit hours		**15**

.NET Programming Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
CIS-121	Introduction to Programming Logic* **OR**	3
CIS-450	PLTW-Computer Science Principles* **OR**	3
CSC-142	Computer Science*	
		6
Term 2		
CIS-622	.NET Development I*	3
CIS-335	Relational Database Technologies and SQL*	3
		6
Term 3		
CIS-624	.NET Development II*	3
		3
Term 4		
CIS-626	.NET Development III*	3
		3
Total program credit hours		**18**

Data Analytics and Reporting Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
CIS-121	Introduction to Programming Logic* **OR**	3
CIS-450	PLTW-Computer Science Principles* **OR**	
CSC-142	Computer Science*	
		3
Term 2		
CIS-335	Relational Database Technologies and SQL*	3
		3
Term 3		
CIS-326	Business Intelligence Tools	3
CIS-327	Applied Analytics and Reporting	3
		6
Term 4		
CIS-354	Data Analytics and Reporting Projects	3
		3
Total program credit hours		**15**

Mobile App Development Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
CIS-121	Introduction to Programming Logic* **OR**	3
CIS-450	PLTW-Computer Science Principles* **OR**	
CSC-142	Computer Science*	
		3
Term 2		
CIS-171	Java* **OR**	3
CSC-142	Computer Science*	
		3
Term 3		
MDT-340	IOS App Development*	3
MDT-350	Android App Development*	3
		6
Total program credit hours		**12**

*Minimum grade requirement of C- for graduation

**Earn a minimum C- in both CIS-121 and CIS-171. CIS-450 taken in high school with a minimum C- can substitute for CIS-121. Other option: Earn a C- in CSC-142

+MAT-138 is recommended.

Computer Support Specialist

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 terms including summer)

Diploma options
1 year (2 terms or 2 terms and 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.

The Tech Support Specialist Diploma is designed to teach students the fundamental skills and knowledge required to support personal computers in a networked and stand-alone environment. Tech Support Specialists maintain, analyze, and troubleshoot computer systems.

Students completing the curriculum related to customer service roles can apply to graduate with the Desktop Customer Service diploma.

The IT Basics certificate introduces basic information technology concepts to students. Topics include computer systems, desktop operating systems, networking, virtualization, and cloud computing.

Students completing the curriculum related to IT in clinical and public health settings can apply to graduate with the Healthcare IT Technician certificate.

Career opportunities: computer support specialists; technical support specialists; help desk technicians.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
CIS-135	Microcomputer Operating Systems*	3
CIS-103	IT Career Exploration	1
NET-130	Computer Concepts*	3
NET-165	Network Plus*	3
ENG-105	Composition I	3
		13
Term 2		
NET-235	CCNA Cisco 1*	3
NET-119	Virtualization and Cloud Concepts*	2
MAT-772	Applied Math **OR**	3
MAT-707	Algebra Mastery 1	
CSC-116	Information Computing*	3
NET-174	LAN Administration*	3
		14
Term 3-Summer		
SPC-101	Fundamentals of Oral Communication **OR**	3

Course Number	Course Title	Credit Hours
SPC-112	Public Speaking	
MGT-145	Human Relations in Management **OR**	3
PSY-111	Introduction to Psychology	
		6
Term 4		
CIS-128	Programming Concepts* **OR**	3
CIS-121	Introduction to Programming Logic*	
MKT-350	Customer Service Professional*	9
NET-630	Cyber Law and Ethics*	3
		15
Term 5		
NET-785	Fundamentals of Desktop Support*	3
NET-252	Healthcare IT Technician*	3
NET-600	Network Security Basics*	3
-------	Any Course with the following subject codes: CIS or NET*	3
-------	Humanities or History/Culture Course	3
		15

Total program credit hours   63

Tech Support Specialist Diploma Requirements

Course Number	Course Title	Credit Hours
Term 1		
CIS-135	Microcomputer Operating Systems*	3
CIS-103	IT Career Exploration	1
NET-130	Computer Concepts*	3
NET-165	Network Plus*	3
ENG-105	Composition I	3
		13
Term 2		
NET-235	CCNA Cisco 1*	3
NET-119	Visualization and Cloud Concepts*	2
MAT-772	Applied Math **OR**	3
MAT-707	Algebra Mastery 1	
CSC-116	Information Computing	3
NET-174	LAN Administration	3
-------	Any Course with the following subject codes: CIS or NET*	3
		17

Total diploma program credit hours   30

Desktop Customer Service Diploma Requirements

Course Number	Course Title	Credit Hours
Term 1		
CIS-103	IT Career Exploration	1
CIS-135	Microcomputer Operating Systems*	3
CSC-116	Information Computing	3
ENG-105	Composition I	3

NET-165	Network Plus*	3
NET-130	Computer Concepts*	3
		16

Term 2

SPC-101	Fundamentals of Oral Communication **OR**	3
SPC-112	Public Speaking	
-------	Any Course with the following subject codes: CIS or NET*	3
		6

Term 3

MKT-350	Customer Service Professional*	9
		9
Total diploma program credit hours		**31**

Healthcare IT Technician Certificate Requirements

Course Number	Course Title	Credit Hours

Term 1

NET-130	Computer Concepts*	3
NET-165	Network Plus*	3
CSC-116	Information Computing	3
		9

Term 2

NET-174	LAN Administration*	3
NET-235	CCNA Cisco 1*	3
		6

Term 3

NET-252	Healthcare IT Technician*	3
		3
Total certificate program credit hours		**18**

IT Basics Certificate Requirements

Course Number	Course Title	Credit Hours

Term 1

NET-130	Computer Concepts*	3
NET-165	Network Plus*	3
		6

Term 2

BCA-189	Microcomputer Literacy	1
CIS-135	Microcomputer Operating Systems*	3
NET-119	Virtualization and Cloud Concepts*	2
		6
Total certificate program credit hours		**12**

*Minimum grade requirement of C-

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 (5 terms including summer), some required evening classes
Certificate options (See advisor for information)
1 year (2 terms)

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 practices, 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. Upon completion of this program students will receive the OSHA 10 Construction and Adult First Aid with CPR certifications.

The ACE (Architecture, Construction & Engineering) diploma is an alternative and/or precursor to the A.A.S. degree, and provides entry-level skills and knowledge for students seeking entry-level positions in the construction or architecture industries.

The Construction Supervision certificate is an alternative to the A.A.S. degree, and provides entry-level skills and knowledge for students who want to pursue a career as a construction site supervisor or project manager.

The Construction Estimator certificate is an alternative to the A.A.S. degree, and provides entry-level skills and knowledge for students who want to pursue a career as a construction estimator.

The Construction Management certificate provides thorough, up-to-date preparation for effective entry-level leadership within the broader industry. Specialized training in project planning, budgeting, scheduling, quality control, contracts and stakeholder relations is provided. Graduates of this certificate program will be well equipped for positions such as project engineers, estimators, construction schedulers and small business owners.

The Construction Project Management certificate builds skills and knowledge to successfully coordinate the design and construction process from the conceptual development stage through the project close-out phase. It includes foundational courses including construction documentation, sustainability, pre-construction, construction services, project close-out and commissioning. Graduates of this certificate program will receive knowledge and practice for entry level project management positions that include assistant project manager, project engineer and sustainable building technologist.

Career opportunities: Construction managers and supervisors; building inspectors; project managers; sustainability specialists; material suppliers and cost estimators.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
WBL-148	Workplace Project Based Learning Industrial Technology	2
CON-101	Architectural Plans and Specifications	3
CON-108	Construction Safety	1
CON-331	Construction Materials Science	3
CON-410	Architectural Modeling	3
---------	Math Course	3
		15
Term 2		
CON-313	Structures and Mechanical/Electrical/Plumbing Systems	3
CAD-201	Introduction to Building Information Modeling	3
CON-190	Construction Lab	3
CON-322	Estimating for Construction and Architecture	3
SDV-135	Job Seeking Skills	1
---------	Communications Course	3
		16
Term 3		
CON-932	Internship	2
-------	Communications Course	3
-------	Humanities or History/Culture Course	3
		8
Term 4		
CON-324	Advanced Construction Estimating	3
CON-328	Construction Documentation	3
CON-257	Pre-Construction Services	3
MGT-130	Principles of Supervision	3
		12
Term 5		
CON-400	Construction Services, Project Close-Out and Commissioning	3
CON-316	Sustainable Construction Science	3
MGT-155	Integrated Project Management **OR**	3
MGT-101	Principles of Management	
CON-330	Construction Capstone	3
-------	Behavioral/Social Science Course	3
		15

| **Total program credit hours** | | **66** |

Optional Courses

CON-924	Honors Project	1
CON-928	Independent Study	1

ACE Diploma Requirements

Course Number	Course Title	Credit Hours
Term 1		
WBL-148	Workplace Project Based Learning Industrial Technology	2
SDV-135	Job Seeking Skills	1
CON-101	Architectural Plans and Specifications	3
CON-331	Construction Materials Science	3
CON-410	Architectural Modeling	3
---------	Math Course	3
		15
Term 2		
CAD-201	Introduction to Building Information Modeling	3
CON-190	Construction Lab	3
CON-313	Structures and Mechanical/Electrical/Plumbing Systems	3
CON-322	Estimating for Construction and Architecture	3
---------	Communications Course	3
		15
Term 3		
CON-932	Internship	2
		2

| **Total program credit hours** | | **32** |

Construction Supervision Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
CON-101	Architectural Plans and Specifications	3
CON-257	Pre-Construction Services	3
IND-156	Microcomputers for the Trades **OR**	2
CSC-116	Information Computing	
		8
Term 2		
CON-400	Construction Services, Project Close-Out and Commissioning	3
MGT-130	Principles of Supervision	3
MGT-155	Integrated Project Management **OR**	3
MGT-101	Principles of Management	
		9

| **Total program credit hours** | | **17** |

Construction Estimator Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
CON-101	Architectural Plans and Specifications	3
CON-322	Estimating	3
		6

Term 2

Course Number	Course Title	Credit Hours
CON-324	Advanced Construction Estimating	3
CON-257	Pre-Construction Services	3
		6

Total program credit hours **12**

Construction Management Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
CON-324	Advanced Construction Estimating	3
MGT-130	Principles of Supervision	3
MGT-155	Integrated Project Management **OR**	3
MGT-101	Principles of Management	
CON-330	Construction Capstone	3
		12

Total program credit hours **12**

Project Management (Design/Build) Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
CON-328	Construction Documentation	3
CON-316	Sustainable Construction Science	3
CON-257	Pre-Construction Services	3
CON-400	Construction Services, Project Close-Out and Commissioning	3
		12

Total program credit hours **12**

Criminal Justice
Social Sciences
1008 Cedar Hall
319-398-4911
www.kirkwood.edu/socialsciences

Entry time
Fall, Spring, Summer

Award
Associate of Applied Science (4 terms)
Associate of Arts Liberal Arts (transfer degree)

This degree opens doors to a possible career in criminal justice including positions in law enforcement and corrections. Students enrolled in criminal justice may obtain a two-year Associate of Applied Science in Criminal Justice degree that will include both general education and criminal justice courses.

Career opportunities: sheriff; police officer; highway patrol officer; corrections officer; probation officer

Degree Requirements

Course Number	Course Title	Credit Hours

Term 1

Course Number	Course Title	Credit Hours
CRJ-100	Introduction to Criminal Justice	3
SOC-110	Introduction to Sociology **OR**	3
SOC-115	Social Problems	
ENG-120	College Writing **OR**	5
ENG-105	Composition I **AND**	
ENG-106	Composition II **OR**	
ENG-108	Composition II: Technical Writing	
SPC-101	Fundamentals of Oral Communication **OR**	3
SPC-112	Public Speaking	
-------	Math Course (from approved list)	3
		17

Term 2

Course Number	Course Title	Credit Hours
CRJ-101	Ethics in Criminal Justice	3
HSV-282	Health and Psychosocial Rehabilitation	3
SCI-120	Forensic Science	3
PHI-105	Introduction to Ethics	3
		12

Term 3

Course Number	Course Title	Credit Hours
CRJ-111	Police and Society	3
CRJ-141	Criminal Investigation	3
CRJ-201	Juvenile Delinquency	3
CRJ-220	Community-Based Corrections	3
CRJ-237	Criminal & Constitutional Law	3
-------	Approved Elective	3
		18

Term 4

Course Number	Course Title	Credit Hours
CRJ-120	Introduction to Corrections	3
CRJ-200	Criminology	3
CRJ-202	Cultural Awareness for Criminal Justice Practitioners	3
CRJ-232	Community-Oriented Policing and Problem Solving	3
-------	Humanities or History/Culture Course (from approved list)	3
		15

Total program credit hours **62**

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 terms)

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.

Students in Kirkwood's food service programs prepare for their careers through practical experience in management, food preparation and service.

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 take a leadership role 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.

Career opportunities: chefs; cooks; catering managers; kitchen managers; other food service professionals.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
HCM-109	Kitchen Essentials	1.5
HCM-147	Culinary Techniques	1.5
HCM-138	Food Fundamentals	3
HCM-100	Sanitation and Safety	2
HCM-260	Hospitality Math **OR**	3
MAT-140	Finite Math*	
COM-723	Workplace Communications **OR**	
		3
ENG-105	Composition I*	
HCM-321	Introduction to Hospitality Industry	1
CSC-116	Information Computing	3
		18
Term 2		
HCM-161	Stocks and Sauces	1.5
HCM-140	Fabrication	3
HCM-117	Bakery Basics	3
HCM-381	International Cuisine	4.5
HCM-269	Garde Manger	1.5
HCM-356	Beverage Fundamentals	3.0
HCM-288	Introduction to Hospitality II	1
		17.5
Term 3		
HCM-207	Menu Planning	1.5
HCM-231	Nutrition	2
HCM-279	Hospitality Accounting **OR**	3
ACC-152	Financial Accounting	
HCM-932	Internship	1
HCM-358	Applied Culinary Skills	1
HCM-329	Advanced Garde Manager	3
HCM-354	Service Techniques	2
		13.5
Term 4		
HCM-342	Hospitality Events and Catering (BOH)	3
HCM-330	Hospitality Personnel Management	3
HCM-251	Purchasing, Receiving and	2

	Inventory	
SPC-101	Fundamentals of Oral Communication **OR**	3
ENG-106	Composition II*	
FLS-118	Spanish for Professionals: Hospitality	3
MGT-145	Human Relations in Management* **OR**	3
PSY-111	Introduction to Psychology	
HCM-530	Culinary Capstone	1
		18

Total program credit hours	**67**

Optional Courses

HCM-405	Culinary Competition	3
HCM-924	Honors Project	1
HCM-928	Independent Study	1

Food Service Assistant Diploma

Course Number	Course Title	Credit Hours
Term 1		
HCM-109	Kitchen Essentials	1.5
HCM-147	Culinary Techniques	1.5
HCM-138	Food Fundamentals	3
HCM-100	Sanitation and Safety	2
HCM-260	Hospitality Math	3
HCM-321	Introduction to Hospitality Industry	1
COM-723	Workplace Communications	
		3
		15
Term 2		
MGT-145	Human Relations in Management	3
HCM-269	Garde Manger	1.5
HCM-117	Bakery Basics	3
HCM-231	Nutrition	2
CSC-116	Information Computing	3
HCM-161	Stocks and Sauces	1.5
HCM-932	Internship	1
		15

Total program credit hours	**30**

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.

Dental Assisting
Allied Health
2164 Linn Hall
319-398-5566
www.kirkwood.edu/alliedhealth

Entry time
Fall or Spring

Award
Diploma
1 year (3 terms)

Associate of Applied Science degree after completion of additional required courses.
2 years (4 terms)

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: 211 East Chicago Avenue, Chicago, IL 60611-2678; 312-440-4653.

Dental Assistants help the dentist at chair side 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

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

Course Number	Course Title	Credit Hours
Term 1		
HSC-107	Professionals in Health*	2
HSC-210	Health Skills I*	1
DEN-110	Dental Terminology*	2
DEN-120	Dental Anatomy*	3
DEN-100	Fundamentals of Dentistry	3.5
DEA-403	Dental Materials	3
DEA-517	Dental Assisting I	3.5
		18
Term 2		
DEA-580	Dental Assisting Clinic I	4
DEA-518	Dental Assisting II	1.5
DEN-300	Dental Radiography	3
DEA-285	Oral Pathology for Dental Assisting*	1
DEN-200	Preventive Dentistry	2
DEA-610	Specialty Dentistry	4.5
DEN-130	Head and Neck Anatomy*	1.5
		17.5
Term 3		
DEA-519	Dental Assisting III	1.5
DEA-581	Dental Assisting Clinic II	4.5
DEN-220	Dental Nutrition*	1
COM-222	Communication for Health Care Professionals* **OR**	
SPC-101	Fundamentals of Oral Communication* **OR**	3
SPC-112	Public Speaking*	
DEA-701	Dental Office Procedures	1
		11

Total diploma program hours		46.5

Associate of Applied Science Degree Courses

Term 4		
ENG-105	Composition I*	3
PSY-111	Introduction to Psychology*	3
MAT-772	Applied Math*	3
-------	Humanities Elective*	3
-------	Electives*	6
		18

Total Associate of Applied Science degree program credit hours		64.5

Optional		
DEA-924	Honors Project	1
HSC-103	Studies in Health Sciences	1

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 all DEN courses.

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 terms, including 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: 211 East Chicago Avenue, Chicago, IL 60611-2678; 312-440-4653.

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; public health; insurance claims processing; specialty dental practices; sales; teaching.

Degree Requirements

Course Number	Course Title	Credit Hours
Prerequisite courses		
BIO-168	Human Anatomy and Physiology I**	4
BCA-189 OR	Microcomputer Literacy** OR	1
CSC-116	Information Computing**	
CHM-110	Introduction to Chemistry**	3
CHM-111	Introduction to Chemistry Lab**	1
MAT-772	Applied Math**	3
		12
Term 1-Fall		
DEN-120	Dental Anatomy*	3
HSC-107	Professionals in Health*	2
DEN-100	Fundamentals of Dentistry	3.5
DHY-173	Dental Hygiene I	4
DEN-200	Preventive Dentistry	2
DEN-130	Head and Neck Anatomy*	1.5
		16
Term 2-Spring		
BIO-173	Human Anatomy and Physiology II*	4
CHM-132	Introduction to Organic and Biochemistry*	4
DEN-300	Dental Radiography	3
DHY-140	General and Oral Pathology	2
DHY-186	Dental Hygiene II	4
		17
Term 3-Summer		
DEN-220	Dental Nutrition*	1
DHY-220	Dental Materials	1
DHY-274	Local Anesthesia for the Dental Hygienist	1.5
DHY-285	Dental Hygiene III	3
SPC-101 OR	Fundamentals of Oral Communication* OR	3
COM-222 OR	Communication for Health Care Professionals* OR	
SPC-112	Public Speaking*	
		9.5
Term 4-Fall		
DHY-250	Community Dental Health	1.5
DHY-211	Periodontology	2
DHY-134	Therapeutics and Pain Control	2
DHY-296	Dental Hygiene IV	5
BIO-186	Microbiology*	4
		14.5
Term 5-Spring		
DHY-306	Dental Hygiene V	5

ENG-105	Composition I*	3
SOC-110	Introduction to Sociology*	3
PSY-111	Introduction to Psychology*	3
------	Humanities or History/Culture Course*	3
		17

Total program credit hours		**86**
Optional		
DHY-910	Dental Hygiene Clinical Enrichment	1
HSC-103	Studies in Health Sciences	1

*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.

Note: Minimum C is required in all technical Dental Hygiene courses. 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.

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 terms including summer)

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: 312-440-4653; 211 East Chicago Avenue, Chicago, IL 60611-2678.

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.

Career opportunities: With advancements in technology and materials, there is an increased demand for restorative and cosmetic dentistry. As a result, there currently is a great demand for dental technologists. Employment opportunities will be excellent well into the next century (statement from the American Dental Association).

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1-Fall		
HSC-107	Professionals in Health*	2
DEN-120	Dental Anatomy*	3
DLT-156	Dental Anatomy Lab	2
DLT-152	DLT Oral Anatomy	1
DLT-251	Introduction to Dentures	5
DLT-250	Foundation of Dental Technology	3
BCA-189	Microcomputer Literacy* **OR**	1
CSC-116	Information Computing*	
		17
Term 2-Spring		
SPC-101	Fundamentals of Oral Communication* **OR**	3
SPC-112	Public Speaking* **OR**	
COM-222	Communication for Health Care Professionals*	
DLT-565	Occlusion	2
DLT-445	Orthodontics	3
DLT-253	Introduction to Partial Dentures	5
DLT-254	Introduction to Crown and Bridge	5
		18
Term 3-Summer		
DLT-353	Dental Technology Industry	2
DLT-354	Digital Dentistry	3
DLT-456	Introduction to Ceramics	5
		10
Term 4-Fall		
ENG-105	Composition I*	3
DLT-350	Fixed Dental Prosthodontics	5
DLT-351	Removable Dental Prosthodontics	5
DLT-851	DLT Clinic I	1
PSY-111	Introduction to Psychology* **OR**	3
SOC-110	Introduction to Sociology*	
		17
Term 5-Spring		
DLT-451	Advanced Fixed Dental Prosthodontics **OR**	12
DLT-452	Advanced Removable Dental Prosthodontics	
MAT-772	Applied Math*	3
--------	Humanities or History/Culture Course*	3
		18
Total program credit hours		**80**

Optional

DLT-450	Advanced Orthodontics	8
HSC-103	Studies in Health Sciences	1

*Courses may be taken before beginning the program.

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

Diagnostic Assistant is designed for Radiologic Technology students in partnership with the Mercy/St. Luke's School of Radiologic Technology.

The two-year radiologic technology technical program is taught through Mercy/St. Luke's, begins each summer and has a separate application process.

Students must complete prerequisite courses at Kirkwood in order to enter the Mercy/St. Luke's program. After they complete the program and receive their certificate in Radio-logic Technology, students can transfer those credits back to Kirkwood and receive an Associate of Applied Science degree in Career Studies if the prerequisite courses were taken at Kirkwood.

Career opportunities: hospitals; outpatient clinics; physicians' offices, mobile imaging companies

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
BCA-189	Microcomputer Literacy	1
BIO-168	Human Anatomy & Physiology I	4
ENG-105	Composition I	3
HSC-115	Medical Terminology	4
		12
Term 2		
BIO-173	Human Anatomy & Physiology II	4
MAT-102	Intermediate Algebra	4
PSY-111	Introduction to Psychology	3
SPC-101	Fundamentals of Oral Communication	3
-------	Humanities or History/Culture Course	3
		17
Term 3		
-------	Electives (from approved list)	4
-------	Courses from Mercy/St. Luke's	12

	School of Radiologic Technology*	
		16

Term 4

------	Courses from Mercy/St. Luke's School of Radiologic Technology*	17
		17

Total program credit hours   62

Electives

ASL-141	American Sign Language I	4
SDV-135	Job Seeking Skills	1
MGT-145	Human Relations in Management	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-175	Tools for Life Seminar	3
HSV-201	Loss, Trauma and Resilience	3
SPC-132	Group Communication	3

*These courses are offered by St. Luke's Hospital, Cedar Rapids

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 (5 terms, including 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

Course Number	Course Title	Credit Hours
Term 1-Fall		
AGM-405	Ag Engines	3
AGM-113	Hydraulics I	3
MAT-715	Industrial Math I	3
AGM-124	Technical Procedures for Power Mechanics Technicians	3
DSL-355	Fundamentals of Internal Combustion Engines	3
------	Communications Course	3
		18
Term 2-Spring		
DSL-143	Fundamentals of Electricity	3
AGM-419	Machinery Servicing	3
AGM-406	Fundamentals of Power Transfer	3
AGM-334	Advanced Ag Electronics	2
MGT-145	Human Relations in Management	3
		14
Term 3-Summer		
AGM-932	Internship	2
BCA-189	Microcomputer Literacy	1
WEL-331	Welding Fundamentals	2
		5
Term 4-Fall		
AGM-404	Combine Servicing	4
AGM-403	Combine Operation and Adjustment	2
AGM-440	Power Shift Transmissions	3
AGM-422	Diesel Fuel Systems	4
SPC-101	Fundamentals of Oral Communication **OR**	3
SPC-112	Public Speaking	
		16
Term 5-Spring		
AGM-409	Agricultural Diagnosis	13
AGM-414	Fundamentals of Air Conditioning	2
------	Humanities or History/Cultures Course	3
		18

Total program credit hours   71

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. 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

Course Number	Course Title	Credit Hours
Term 1-Fall		
DSL-355	Fundamentals of Internal Combustion Engines	3
AGM-124	Technical Procedures for Power Mechanics	3
MAT-715	Industrial Math I	3
DSL-345	Truck Engines	3
AGM-113	Hydraulics I	3
-------	Communications Course	3
		18
Term 2-Spring		
DSL-143	Fundamentals of Electricity	3
AGM-406	Fundamentals of Power Transfer	3
DSL-543	Truck Clutches	3
BCA-189	Microcomputer Literacy	1
MGT-145	Human Relations in Management	3
SPC-101	Fundamentals of Oral Communication **OR**	3
SPC-112	Public Speaking	
		16
Term 3-Summer		
DSL-802	Trailer Servicing	3
DSL-308	Cooling Systems	2
DSL-156	Truck Electronics	3
DSL-630	Air Brakes and ABS	2
DSL-642	Steering and Suspension	2
WEL-331	Welding Fundamentals	2
		14
Term 4-Fall		
AGM-932	Internship	2
DSL-424	EFI Engine Systems	4
AGM-414	Fundamentals of Air Conditioning	2
AGM-422	Diesel Fuel Systems	4
-------	Humanities or History/Culture Course	3
		15
Total program credit hours		**63**

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. See an advisor for further details.

Digital Arts

Arts & Humanities
336 Cedar Hall
319-398-4913
Arts@kirkwood.edu
www.kirkwood.edu/digitalarts

Entry time
Fall, Spring or Summer

Award
Associate of Applied Science degree
2 years

The Digital Arts program prepares students for careers in fast-paced, and diverse areas of media technology including photography, graphic design, broadcast and film production, web design and social media marketing. The strong multi-media foundation also includes entrepreneurship plus general education courses that position graduates for employment in the multi-dimensional fields of communications strategies and media relations. Upon completion of the program, students will have the skills to directly enter the workforce with marketable credentials in addition to a solid foundation of coursework should they choose to transfer to one of the many regional four year institutions to continue their education.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
ART-186	Digital Photography	3
ART-301	Design Fundamentals	3
MKT-110	Principles of Marketing	3
GRA-101	Survey of Graphic Communications	3
MMS-111	Video Production 1	3
		15
Term 2		
ART-223	Advanced Photography	3
ART-161	Digital Art	3

CIS-207	Fundamentals of Web Programming	3
MMS-101	Mass Media	3
MMS-209	Video Production II	3
--------	Communications Course	3
		18

Term 3

ART-224	Commercial Studio Lighting Table Top and Portrait	3
MMS-105	Audio Production	3
BCA-290	Web Design Principles	3
MKT-130	Social Media in Business	3
--------	Communications Course	3
--------	Math Course	3
		18

Term 4

GRA-131	Digital Layout	3
GRA-140	Digital Imaging	3
MKT-135	Content Marketing **OR**	3
MGT-300	Introduction to Entrepreneurship	
MMS-241	Public Relations and Marketing	3
ART-945	Digital Arts Capstone	3
		15
Total program credit hours		**66**

Early Childhood Education

Social Sciences
1008 Cedar Hall
319-398-4911
www.kirkwood.edu/socialsciences

Entry time
Fall, Spring, Summer

Award

Associate of Applied Science (4 terms)
Associate of Arts Liberal Arts (transfer degree)

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 Associate of Applied Science degree, diploma and certificate options.

Kirkwood has articulation agreements with a number of institutions offering degrees in early childhood. 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 Education (Diploma)
Students in the Early Childhood Education A.A.S. program may elect to receive this diploma after completing the courses below. Please consult with the Social Sciences Department for more information regarding this option.

Early Childhood Administration (Certificate)
Students in the Early Childhood Education Associate of Applied Science program may elect to receive an Early Childhood Administration certificate after completing the A.A.S. degree requirements. This certificate complements the Early Childhood Education program by offering additional classes for those students pursuing a career as an owner/operator of a daycare center. Please consult with the Social Sciences department for more information regarding this option.

Early Childhood Paraeducator (Certificate)
Students in the Early Childhood Education Associate of Applied Science program may elect to receive an Early Childhood Paraeducator certificate after completing the A.A.S. degree requirements. This certificate complements the Early Childhood Education program by offering additional classes for those students pursuing a career as an early childhood teacher or provider. The Early Childhood Paraeducator certificate also fulfills the educational requirement for those working toward an infant/toddler or preschool Child Development Associate (CDA) administrated by the Council for Professional recognition in Washington D.C. and meets the requirements for clock hours of formal child care education required for the CDA credential. Please consult with the Social Sciences department for more information regarding this option.

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

Course Number	Course Title	Credit Hours
Term 1		
ECE-103	Introduction to Early Childhood Education+	3
ECE-105	Technology in Early Childhood	1
ECE-158	Early Childhood Curriculum I	3
ECE-170	Child Growth & Development	3
ENG-105	Composition I*	3
-------	Math/Science Course (from approved list)	3
		16
Term 2		
ECE-159	Early Childhood Curriculum II	3

PSY-111	Introduction to Psychology	3
SPC-101	Fundamentals of Oral Communication **OR**	3
SPC-112	Public Speaking	
ENG-106	Composition II*	3
-------	Program Elective	3
		15

Term 3

ECE-133	Child Health, Safety, and Nutrition	3
PSY-121	Developmental Psychology	3
EDU-248	Exceptional Persons	3
ECE-290	Early Childhood Program Administration	3
-------	Program Elective	3
		15

Term 4

ECE-221	Infant/Toddler Care & Education	3
ECE-243	Early Childhood Guidance	3
ECE-262	Early Childhood Field Experience	3
-------	Program Electives	9
		18
Total program credit hours		**64**

Early Childhood Recommended Program Electives

EDU-110	Exploring Teaching+	3
EDU-119	Behavior Management+	3
EDU-129	Inclusion and Adaption+	3
EDU-240	Educational Psychology	3
EDU-249	Cultural and Linguistic Diversity+	3
EDU-258	Autism Spectrum Disorder Support	3
ASL-141	American Sign Language I	4
ASL-171	American Sign Language II	4
ECE-928	Independent Study	1
FLF-141	Elementary French I	4
FLF-142	Elementary French II	4
FLS-141	Elementary Spanish I	4
FLS-142	Elementary Spanish II	4
LIT-105	Children's Literature	3
HSV-109	Introduction to Human Services	3
SOC-110	Introduction to Sociology	3
SOC-120	Marriage and Family	3

Diploma Requirements

Course Number	Course Title	Credit Hours
Term 1		
ECE-103	Introduction to Early Childhood Education	3
ECE-105	Technology in Early Childhood	1
ECE-158	Early Childhood Curriculum I	3
ECE-133	Child Health, Safety & Nutrition	3
ENG-105	Composition I*	3
ECE-170	Child Growth & Development	3
		16

Term 2

ECE-159	Early Childhood Curriculum II	3
ECE-221	Infant/Toddler Care & Education	3

ECE-243	Early Childhood Guidance	3
ECE-262	Early Childhood Field Experience	3
		12

Term 3

PSY-111	Introduction to Psychology	3
SPC-101	Fundamentals of Oral Communication **OR**	3
SPC-112	Public Speaking	
		6

Optional Courses

EDU-110	Exploring Teaching	3
EDU-119	Behavior Management	3
Total program credit hours		**34**

Early Childhood Paraeducator Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
ECE-103	Introduction to Early Childhood Education	3
ECE-133	Child Health, Safety & Nutrition	3
ECE-158	Early Childhood Curriculum I	3
		9

Term 2

ECE-243	Early Childhood Guidance	3
EDU-110	Exploring Teaching	3
EDU-119	Behavior Management	3
		9
Total program credit hours		**18**

Early Childhood Administration Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
ECE-XXX	Elective courses**	12
		12

Term 2

ECE-290	Early Childhood Program Administration	3
ECE-930	Administrative Practicum	1
MGT-130	Principles of Supervision	3
MGT-300	Introduction to Entrepreneurship	3
MGT-145	Human Relations in Management	3
		13
Total program credit hours		**25**

**Any 12 credits from courses in the ECE discipline, other than those specifically required in the plan of study.
*Your writing placement score may require prerequisite courses.
+Leads to certification as a paraeducator.

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 terms including summer)

Accreditation
The Electroneurodiagnostic Technology program is accredited by the Commission on Accreditation of Allied Health Education Programs (www.caahep.org) upon the recommendation of the Committee on Accreditation for Education in Neurodiagnostic Technology.

Commission on Accreditation of Allied Health Education Programs: 9355 113th Street N, #7709, Seminole, FL 33775, 727-210-2350. www.caahep.org

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 disease 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. Graduates are prepared for the Registry Exam of American Board of Registration of Electroencephalographic and Evoked Potential Technologists.

Career opportunities: hospitals; outpatient clinics; sleep labs, research, doctors' offices.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 0-Prerequisites		
HSC-117	Basic Medical Terminology*+ **OR**	2.5
HSC-115	Medical Terminology*+	
SPC-101	Fundamentals of Oral Communication*+ **OR**	3
COM-222	Communication for Health Care Professionals*+ **OR**	
SPC-112	Public Speaking*+	
		5.5
Term 1-Fall		
HSC-107	Professionals in Health+	2
HSC-210	Health Skills I+	1
BCA-189	Microcomputer Literacy+ **OR**	1

CSC-116	Information Computing+	
BIO-168	Human Anatomy & Physiology I*+	4
END-100	Introduction to Electroneurodiagnostics*	2.5
MAT-772	Applied Math*	3
		13.5
Term 2-Spring		
END-310	Electroneurodiagnostic Technical Science*	7
END-330	Electroneurodiagnostic Clinical Science*	2
BIO-173	Human Anatomy & Physiology II*+	4
-------	Humanities or History/Culture Course+	3
		16
Term 3-Summer		
END-810	Electroneurodiagnostic Clinic I*	6
		6
Term 4-Fall		
END-405	Neurodiagnostic Procedures*	2
END-830	Electroneurodiagnostic Clinic II*	7.5
ENG-105	Composition I+	3
PSY-111	Introduction to Psychology+	3
		15.5
Term 5-Spring		
END-870	Sleep Technology*	6.5
END-850	Electroneurodiagnostic Clinic III*	5.5
		12
Total program credit hours		68.5
Optional		
END-924	Honors Project	1
HSC-103	Studies in Health Sciences	1

+Courses may be taken before beginning the program.

*Note: All technical END courses, prerequisite courses, and BIO-168 and BIO-173 must be passed with a minimum grade of C.

Electronics 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 (5 terms including summer)
Diploma
3 terms

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.

Students in the Associate Degree Electronics Engineering Technology program may elect to receive an Electronic Engineering Technology Diploma after completing the courses below. Please consult with the Industrial Technology Department for more information regarding this option.

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.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1-Fall		
ELT-279	Electronic Practices	4
ELT-345	Electric Circuits I	5
MAT-745	Technical Mathematics I	4
-------	Communications Course*	3
		16
Term 2-Spring		
ELT-514	Active Devices I: Transistor Amplifiers	7
MAT-746	Technical Mathematics II	4
ELT-341	Electric Circuits II	5
-------	Communications Course*	3
		19
Term 3-Summer		
ELT-309	Digital Circuits **OR**	3
EGT-420	PLTW - Digital Electronics	
ELT-518	Active Devices II: Operational Amplifiers	3
ELT-299	Introduction to LabView	3
-------	Humanities or History/Culture Course	3
		12
Term 4-Fall		
ELT-618	Microprocessors I	5
PHY-230	Technical Physics I	3
ELT-350	Communications Systems I	7
PSY-111	Introduction to Psychology **OR**	3
MGT-145	Human Relations in Management	
		18

Course Number	Course Title	Credit Hours
Term 5-Spring		
ELT-399	Communications Systems II	4
ELT-621	Microprocessors II	4
ELT-845	Design Projects	4
PHY-232	Technical Physics II	3
		15

Total program credit hours   **80**

Optional Courses

EGT-410	PLTW-Principles of Engineering	3
ELT-924	Honors Project	1
ELT-928	Independent Study	1

Diploma Requirements

Course Number	Course Title	Credit Hours
Term 1-Fall		
ELT-345	Electric Circuits I	5
MAT-745	Technical Mathematics I	4
ELT-279	Electronic Practices	4
		13
Term 2-Spring		
MAT-746	Technical Mathematics II	4
ELT-341	Electric Circuits II	5
ELT-514	Active Devices I: Transistor Amplifiers	7
		16
Term 3-Summer		
ELT-309	Digital Circuits **OR**	3
EGT-420	PLTW-Digital Electronics	
ELT-518	Active Devices II: Operational Amplifiers	3
		6

Total program credit hours   **35**

*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 II **FOR**
———   Communication electives

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 (5 terms including summer)

Students in the Energy Production and Distribution Technologies program examine and practice the technical fundamentals necessary for a career in the renewable energy industry, with particular attention focused on wind and solar electricity generation. Required coursework includes the study of safe work practices, electrical theory and troubleshooting, mechanical drive systems, fluid power systems, basic framing and construction concepts, and detailed explorations of both wind and solar electrical generation systems. The multiple solar and wind generation systems installed on the Kirkwood Community College campus allow students a real world opportunity to apply the concepts and skills learned in classrooms and labs.

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

The Energy Production and Distribution Technologies program requires completion of the following third-party credentials: OSHA 10 Hour - Construction, Adult First Aid with CPR, and Tower Climb and Rescue.

Career opportunities: Wind Turbine Service Technicians; Wind Energy Project Managers; Wind Energy Operations Managers; Electrical and Electronic Repairers; Maintenance and Repair Workers; Electro-Mechanical Technician.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1-Fall		
ELE-364	Basic Electrical Circuits*	4
ATR-303	Mechanical Power Transmission	4
IND-156	Microcomputers for the Trades **OR**	2
CSC-116	Information Computing	
MAT-232	Applied Industrial Math for Technicians **OR**	3
MAT-745	Technical Mathematics 1 **OR**	
MAT-707	Algebra Mastery 1 **AND**	
MAT-103	Applied Mathematics Topics for Advanced Manufacturing	
		13
Term 2-Spring		
PHY-180	Applied Physics I **OR**	2
PHY-190	Physics I **OR**	
PHY-120	Introductory Physics	
ELT-224	Motors and Transformers	5
ATR-310	Industrial Controls	5
ATR-136	Programmable Logic Controllers for Manufacturing	4
		16
Term 3-Summer		
WTT-101	Wind Turbine Orientation	1
IND-196	Fundamentals of Hydraulic and Pneumatic Systems	5
---------	Communications Course	3
---------	Humanities or History/Culture Course	3
		12

Course Number	Course Title	Credit Hours
Term 4-Fall		
SER-136	Energy Industry Fundamentals	3
SER-210	Photovoltaic Systems I	4
WTT-210	Wind Energy Systems I	4
ELE-365	Industrial Writing	3
		14
Term 5-Spring		
SER-310	Photovoltaic Systems II	4
WTT-310	Wind Energy Systems II	4
---------	Communications Course	3
---------	Social Science Course	3
		14

Total program credit hours   69

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

Entry time
Fall or Spring

Award
Associate of Applied Science degree
2 years (5 terms including summer)
Diploma
1 year (3 terms including summer)
Certificate options (See advisor for information)

The Entry-Level Firefighter curriculum can help recent high school graduates or volunteers improve their employment prospects in the competitive field of career firefighting. This program features some evening and online classes. Student completing the program will earn Firefighter 1, Firefighter 2, and EMT credentials.

Career opportunities: firefighter; emergency medical technician.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1-Fall		
FIR-213	Principles of Emergency Services	3
FIR-127	Fire Behavior and Combustion	3
FIR-150	Fire Detection and Suppression System	3
COM-723	Workplace Communications **OR**	3
ENG-101	Elements of Writing **OR**	
ENG-105	Composition I	
SPC-101	Fundamentals of Oral Communication **OR**	3
SPC-112	Public Speaking	
		15
Term 2-Spring		
-------	Approved Math Course	3
FIR-124	Building Construction	3
FIR-400	Emergency Safety and Survival	3

FIR-130	Fire Prevention	3
FIR-110	History and Philosophy of the Fire Service	2
		14

Term 3-Summer

FIR-199	Firefighter I	8
		8

Term 4-Fall

FIR-201	Firefighter II	3
-------	One Fire Science Management Technical Course	3
EMS-255	Emergency Medical Technician I	4
EMS-350	Emergency Medical Technician II	3.5
EMS-365	Emergency Medical Technician II Clinical	1
		14.5

Term 5-Spring

-------	Social Science Course	3
-------	Humanities Course	3
FIR-180	Chemistry of Hazardous Materials	3
-------	Two Fire Science Management Technical Courses	6
		15

Degree Total program credit hours   **66.5**

Optional Courses

FIR-924	Honors Project	1
FIR-928	Independent Study	1

Fire Science Technical Courses

FIR-146	Firefighting Tactics and Strategy	3
FIR-183	Hazardous Materials Management	3
FIR-280	Instruction Techniques for Fire Science Training	3
FIR-330	Fire Service Company Officer	3

Diploma Requirements

Course Number	Course Title	Credit Hours

Term 1-Fall

FIR-213	Principles of Emergency Services	3
FIR-127	Fire Behavior and Combustion	3
FIR-150	Fire Detection and Suppression System	3
ENG-101	Elements of Writing **OR**	3
COM-723	Workplace Communications **OR**	
ENG-105	Composition I	
		12

Term 2-Spring

FIR-180	Chemistry of Hazardous Materials	3
EMS-255	Emergency Medical Technician I	4
EMS-350	Emergency Medical Technician II	3.5
EMS-365	Emergency Medical Technician II Clinical	1
-------	Social Science Course	3
		14.5

Term 3-Summer

FIR-199	Firefighter I	8
		8

Total program credit hours   **34.5**

Certificate Requirements

Course Number	Course Title	Credit Hours

Term 1-Fall

FIR-199	Firefighter I	8
		8

Term 2-Spring

FIR-213	Principles of Emergency Services	3
FIR-110	History and Philosophy of the Fire Service	2
EMS-255	Emergency Medical Technician I	4
EMS-350	Emergency Medical Technician II	3.5
EMS-365	Emergency Medical Technician II Clinical	1
		13.5

Total program credit hours   **21.5**

Fire Science Certificate
Any 6 of the Following Courses

FIR-124	Building Construction	3
FIR-127	Fire Behavior and Combustion	
FIR-130	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	Emergency Safety and Survival	3
FIR-213	Principles of Emergency Services	3

Total program credit hours   **18**

Exercise Science and Wellness
Math/Science
1184 Linn Hall
319-398-5516
www.kirkwood.edu/exercisescience

Entry time
Fall

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

Kirkwood Community College's Exercise Science program will provide the training necessary to become a nationally recognized fitness professional and/or to continue to an

institution offering bachelor's degrees, or to further individual knowledge in order to serve the local community. Students within the exercise science program will attain skills in assessment and identification of health risks and fitness program design for general and special populations. Students would also gain knowledge and understanding of physical and physiological adaptations to the environment and exercise and be able to utilize that knowledge to educate others regarding proper exercise form, anatomy, physiology, and the nutrition required to meet health goals.

Graduates from the Exercise Science and Wellness program are eligible to take the Certified Personal Trainer examination offered by various organizations including the National Academy of Sports Medicine, the American Council on Exercise, and the National Strength and Conditioning Association.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
BIO-151	Nutrition* **OR**	3
PEH-191	Sports Nutrition*	
ENG-105	Composition I **OR**	3
ENG-120	College Writing	
EXS-120	Human Anatomy & Physiology for Exercise Science* **OR**	3
BIO-168	Human Anatomy & Physiology I* **AND**	
BIO-173	Human Anatomy & Physiology II*	
--------	Math Course	3
--------	Program Elective*	3
--------	Activity Course	1
		16
Term 2		
ENG-106	Composition II	3
EXS-180	Fitness Programming and Design*	3
PEH-170	Principles of Weight Training*	3
PSY-111	Introduction to Psychology	3
---------	Humanities or History/Culture Course	3
		15
Term 3		
EXS-280	Exercise Physiology*	4
PEH-270	Exercise Prescription for Special Populations*	3
PSY-121	Developmental Psychology	3
--------	Math Course	3
--------	Program Elective*	3
		16
Term 4		
EXS-285*	Personal Trainer Capstone	3
EXS-932*	Internship	2
SPC-101	Fundamentals of Oral Communication **OR**	3
SPC-112	Public Speaking	
---------	Humanities or History/Culture Course	3
---------	Program Elective*	3
---------	Activities Course	1
		15

Total program credit hours		**62**

Program Electives

PEH-111	Personal Wellness*	3
PEC-111	Techniques and Theory of Coaching*	2
PEC-126	Athletic Injury Prevention*	2
PEC-148	Theory of Coaching Basketball*	2
PEC-160	Sports Officiating*	2
PEH-155	Exercise Psychology*	3
PEH-160	Fundamentals of Health Coaching*	3
PEH-162	Introduction to Physical Education*	3
PEH-165	Introduction to Complementary and Alternative Medicine*	3
PEH-191	Sports Nutrition*	3
PEH-255	Principles of Sport Management*	3
PEH-924	Honors Project*	1
PEH-928	Independent Study*	1

Activities Courses

PEA-102	Aerobic Fitness I	1
PEA-162	Speed and Conditioning I	1
PEA-187	Weight Training I	1
PEA-287	Weight Training II	1

*Minimum grade of C- to graduate

Golf Course and Athletic Turfgrass Management

Ag Sciences
Horticulture
319-398-5441
www.kirkwood.edu/agrisciences

Entry time
Summer or Fall

Award
Associate of Applied Science degree
2 years (4 terms, 1 summer)
Diploma (See advisor for information)
3 terms

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

Course Number	Course Title	Credit Hours
Term I		
AGH-112	Introduction to Turfgrass Management	3
AGH-220	Plant Identification I	3
AGH-236	Plant Material Maintenance	3
AGH-110	Success in Horticulture	1
-------	Humanities or History/Culture Course	3
AGH-157	Equipment Operations	2
AGH-150	Equipment Operations Lab	1
		16
Term 2		
AGH-211	Advanced Turfgrass Management	3
AGH-221	Principles of Horticulture	3
AGH-144	Landscape Construction	3
AGH-102	Horticulture Math	3
COM-723	Workplace Communications **OR**	3
ENG-105	Composition I	
		15
Term 3-Summer		
AGC-932	Internship*	3
		3
Term 4		
AGH-166	Turfgrass and Landscape Irrigation	3
AGH-283	Pesticide Application Certification	2
AGH-405	Golf Course Maintenance	3
AGH-400	Athletic Field Maintenance	3
SPC-101	Fundamentals of Oral Communication **OR**	3
ENG-106	Composition II	
MGT-145	Human Relations in Management	3
		17
Term 5		
AGH-238	Soil and Water Conservation	3
AGH-152	Landscape Design Techniques	3
AGH-445	Turfgrass	3
AGH-465	Turf and Landscape Capstone	3
		12

Total program credit hours   63

Diploma Requirements

Course Number	Course Title	Credit Hours
Term I		
AGH-112	Introduction to Turfgrass Management	3
AGH-220	Plant Identification I	3
AGH-110	Success in Horticulture	1
AGH-157	Equipment Operations	2

AGH-150	Equipment Operations Lab	1
		10
Term 2		
AGH-221	Principles of Horticulture	3
AGH-102	Horticulture Math	3
COM-723	Workplace Communications **OR**	3
ENG-105	Composition I	
AGH-445	Turfgrass Management & Administration	3
AGH-144	Landscape Construction	3
		15
Term 3		
AGH-166	Turfgrass and Landscape Irrigation	3
AGH-211	Advanced Turfgrass Management	3
MGT-145	Human Relations in Management	3
AGH-465	Turf and Landscape Capstone	3
		12

Total program credit hours   37

*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

Award
Associate of Applied Science degree
2 years (5 terms including 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 in art, photography, marketing and interactive design interest, will increase enjoyment and overall design opportunities within the 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

Course Number	Course Title	Credit Hours
Term 1-Fall		
GRA-101	Survey of Graphic Communications[1]	3
ART-301	Design Fundamentals	3
ART-133	Drawing	3
CSC-116	Information Computing	3
MKT-150	Principles of Advertising **OR**	3
MKT-110	Principles of Marketing	
		15
Term 2-Spring		
GRA-127	Illustrator I	3
GRA-131	Digital Layout	3
GRA-140	Digital Imaging	3
CIS-207	Fundamentals of Web Programming	3
ENG-101	Elements of Writing **OR**	3
ENG-105	Composition I	
		15
Term 3-Summer		
GRA-132	Digital Layout II	3
GRA-141	Digital Imaging II	3
		6
Term 4-Fall		
ENG-105	Composition I **OR**	3
ENG-106	Composition II	
GRA-128	Illustrator II	3
GRA-151	Web Design	3
GRA-195	Introduction to Web Media	3
MKT-140	Principles of Selling **OR**	3
SPC-101	Fundamentals of Oral Communication	
		15
Term 5-Spring		
GRA-153	Web Media II	3
GRA-157	Web Design II	3
GRA-191	Graphic Communication Applications	3
GRA-199	Graphic Communication Job Shadow	1
MGT-145	Human Relations in Management **OR**	3
PSY-111	Introduction to Psychology	
ADM-133	Business Math and Calculators **OR**	3
-------	Approved Math Course	
		16
Total program credit hours		**67**

[1]GRA-101 Survey of Graphic Communication must be completed in the first semester.

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.

Hospitality 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 (5 terms including summer)
Diploma
1 year (3 terms including summer)

Hospitality Management AAS

The goal of this program is to prepare students to work in entry-level leadership positions (e.g., supervisor and assistant managers) in various departments of full-service hotel or food and beverage operations. There continues to be strong industry demand for college-educated individuals who have practical work experience in hospitality operations.

Students in this program will participate in the day-to-day operations of a successful full-service facility by gaining practical training experience at The Hotel at Kirkwood Center. Management-related coursework includes food and beverage, front office and guest services, engineering and risk, housekeeping/laundry operations, legal responsibilities of the industry, the business functions of marketing and accounting, and other hospitality-related business management areas including revenue management.

In addition to on-the-job training at The Hotel at Kirkwood Center, a separate industry internship allows students to apply their program learning within various other segments of the hospitality industry.

Students in this program earn the following third-party credential: National Restaurant Association's Food Protection Management Certificate.

Hospitality Operations Diploma

Students in the Hospitality Management program may elect to receive a Hospitality Operations Diploma after completing the courses listed under the Diploma option. Please consult with the Hospitality Department for more information regarding this options.

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

Course Number	Course Title	Credit Hours
Term 1		
HCM-100	Sanitation and Safety	2
HCM-260	Hospitality Math **OR**	3
MAT-140	Finite Math	
HCM-321	Introduction to Hospitality Industry	1
HCM-600	Introduction to Lodging Operations	2
HCM-601	Housekeeping and Environmental Services	3
COM-723	Workplace Communications **OR**	3
ENG-105	Composition I	
CSC-116	Information Computing	3
		17
Term 2		
HCM-330	Hospitality Personnel Management	3
HCM-618	Food and Beverage Operations	3
HCM-597	Front Office and Revenue Management	4
HCM-354	Service Techniques	2
HCM-279	Hospitality Accounting **OR**	3
ACC-152	Financial Accounting	
HCM-616	Hospitality Professionalism	1
		16
Term 3		
HCM-930	Internship Seminar	3
HCM-933	Internship	1
		4
Term 4		
HCM-310	Hospitality Law	3
HCM-615	Hospitality Marketing	3
HCM-599	Engineering and Risk Management	1
HCM-213	Service Management (Lab)	4
HCM-934	Internship Seminar II	2
HCM-935	Internship 2	1
HCM-616	Hospitality Professionalism	1
PSY-111	Introduction to Psychology	3
		18
Term 5		
SPC-101	Fundamentals of Oral Communication **OR**	3
ENG-105	Composition I **OR**	
ENG-106	Composition II	
FLS-118	Spanish for Professionals: Hospitality	3
HCM-614	Leadership in Hospitality	3
HCM-251	Purchasing, Receiving and Inventory	2
HCM-603	Hotel Sales, Catering and Event Management	3
		14

Total program credit hours	**69**

Optional Course

HCM-924	Honors Project	1

Hospitality Operations Diploma

Course Number	Course Title	Credit Hours
Term 1		
HCM-100	Sanitation and Safety	2
HCM-260	Hospitality Math	3
HCM-321	Introduction to Hospitality Industry	1
HCM-600	Introduction to Lodging Operations	2
HCM-601	Housekeeping and Environmental Services	3
CSC-116	Information Computing	3
		14
Term 2		
HCM-330	Hospitality Personnel Management	3
HCM-354	Service Techniques	2
HCM-618	Food and Beverage Operations	3
HCM-597	Front Office and Revenue Management	4
HCM-616	Hospitality Professionalism	1
COM-723	Workplace Communications	3
		16

Total diploma credit hours	**30**

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

Human Services
Social Sciences
1008 Cedar Hall
319-398-4911
www.kirkwood.edu/socialsciences

Entry time
Fall, Spring, Summer

Award

Associate of Applied Science degree (4 terms)
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. The credits taken in this diploma program along with the completion of the Associate's degree in Human Services will allow the individual student to 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

Course Number	Course Title	Credit Hours
Term 1		
HSV-109	Introduction to Human Services	3
ENG-105	Composition I	3
SOC-110	Introduction to Sociology	3
PSY-111	Introduction to Psychology	3
------	Math/Science Course (from approved list)	3
		15
Term 2		
HSV-110	Human Service Policy and Programs	3
HSV-120	Observation Skills	3
HSV-282	Health and Psychosocial Rehabilitation	3
ENG-106	Composition II **OR**	3
ENG-108	Composition II: Technical Writing	
HSV-130	Interviewing/Interper Relations	3
		15
Term 3		
HSV-201	Loss, Trauma and Resilience	3
HSV-801	Human Services Field Experience	3
		6
Term 4		
HSV-200	Adaptation Strategies	3
PSY-121	Developmental Psychology	3
SPC-101	Fundamentals of Oral Communication	3
SOC-120	Marriage and Family	3
SOC-265	Introduction to Lesbian, Gay, Bisexual and Transgender Studies	3
		15
Term 5		
SOC-220	Sociology of Aging	3
HSV-287	Counseling Theories and Techniques	3
HSV-292	Substance Abuse and Treatment	3
HSV-801	Human Service Field Experience	3
		12

Total program credit hours 63

Optional Courses

HSV-813	Alcohol and Drug Counselor Field Experience and Seminar I	6
HSV-814	Alcohol and Drug Counselor Field Experience and Seminar II	6
HSV-924	Honors Project	1
HSV-928	Independent Study	1

Behavioral Health Paraprofessional Diploma Requirements

Course Number	Course Title	Credit Hours
Term 1		
HSV-109	Introduction to Human Services	3
HSV-200	Adaptation Strategies	3
HSV-282	Health and Psychosocial Rehabilitation	3
HSV-120	Observation Skills	3
		12
Term 2		
HSV-130	Interviewing/Interper Relations	3
HSV-201	Loss, Trauma and Resilience	3
HSV-287	Counseling Theories and Techniques	3
HSV-292	Substance Abuse and Treatment	3
		12
Term 3		
HSV-800	Human Service Field Experience/Seminar **OR**	6
HSV-813	Alcohol and Drug Counselor Field Experience and Seminar I	
		6

Total program credit hours 30

HVAC Installer

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

Entry time
Fall

Award
Diploma
1 year (2 terms)

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.

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

Course Number	Course Title	Credit Hours
Term 1-Fall		
HCR-410	Electrical Applications I	3
HCR-605	HVAC Installation I	5
HCR-710	Fundamentals of Plan and Print Reading	2
HCR-932	Internship	1
MAT-719	Applied HVAC Math	3
------	Communications Course	3
		17
Term 2-Spring		
HCR-450	Electrical Applications for HVAC II	3
HCR-600	Pipe Joining Methods	3
HCR-610	HVAC Installation II	7
HCR-932	Internship	1.5
--------	Social Science Course	3
		17.5
Total program credit hours		**34.5**
Optional		
HCR-924	Honors Project	1
HCR-928	Independent Study	1

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 (5 terms including summer)
Diploma
1 year (2 terms)

The Industrial Maintenance Technology program prepares students for a broad range of industrial maintenance related careers using industry guided curriculum combine with practical hands-on labs.

First year studies focus on the concepts 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 variety of disciplines, such as plumbing, print reading, welding, fabrication and light machining.

The Industrial Maintenance Technologies program requires completion of the following third-party credential: OSHA 10 Hour - General Industry

Career opportunities: commercial electrician; plant maintenance technician; maintenance mechanic; maintenance electrician; millwright.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1-Fall		
ELE-364	Basic Electrical Circuits	4
ATR-303	Mechanical Power Transmission	4
IND-156	Microcomputers for the Trades **OR**	2
CSC-116	Information Computing	
MAT-232	Applied Industrial Math for Technicians **OR**	3
MAT-745	Technical Mathematics I **OR**	
MAT-707	Algebra Mastery I **AND**	
MAT-103	Applied Mathematics Topics for Advanced Manufacturing	
		13
Term 2-Spring		
PHY-180	Applied Physics I **OR**	2
PHY-120	Introductory Physics **OR**	
PHY-190	Physics I	
ELT-224	Motors and Transformers	5
ATR-310	Industrial Controls	5
ATR-136	Programmable Logic Controllers for Manufacturing	4
		16

Term 3-Summer

MFG-104	Light Machining For Maintenance Trades	3
WEL-267	Welding for Maintenance Trades	3
ATR-316	Instrumentation & Control Devices	2
ATR-319	Process Control I	4
		12

Term 4-Fall

ELE-365	Industrial Wiring	3
PLU-101	Pipefitting for Maintenance Trades	2
ATR-327	Process Controls II	4
ATR-309	Controls Capstone	3
------	Humanities or History/Culture Course	3
------	Communication Course	3
		18

Term 5-Spring

ATR-126	Advanced Maintenance Technologies	2
IND-196	Fundamentals of Hydraulics and Pneumatic Systems	5
WEL-208	Introduction to Fabrication	2
MGT-145	Human Relations in Management **OR**	3
PSY-111	Introduction to Psychology	
------	Communication Course	3
		15

Total program credit hours   **74**

Electromechanical Technology Diploma Requirements

Course Number	Course Title	Credit Hours

Term 1

ELE-364	Basic Electrical Circuits	4
ATR-303	Mechanical Power Transmission	4
IND-156	Microcomputers for the Trades **OR**	2
CSC-116	Information Computing	
MAT-232	Applied Industrial Math for Technicians **OR**	3
MAT-745	Technical Mathematics I **OR**	
MAT-707	Algebra Mastery I **AND**	
MAT-103	Applied Mathematics Topics for Advanced Manufacturing	
		13

Term 2

PHY-180	Applied Physics I **OR**	2
PHY-120	Introductory Physics **OR**	
PHY-190	Physics I	
ELT-224	Motors and Transformers	5
ATR-310	Industrial Controls	5
ATR-136	Programmable Logic Controllers for Manufacturing	4
		16

Total program credit hours   **29**

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 (6 terms)

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 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, and software including Photoshop, SketchUp, and Revit. Students also learn professional practice concepts and are able to apply those concepts toward 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 you can take relating to art, design or drafting will assist in building your knowledge of design as you prepare to enter the Interior Design Program at Kirkwood.

A laptop is required for this program.

Career opportunities: interior design and architecture firms; 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 photography; professional rendering (manual or digital); model building; upholstery workrooms; professional

organizations; sustainability consultant; design journalist; lighting design; sales and retail

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
CON-101	Architectural Plans and Specifications	3
INT-126	Introduction to Interior Design*	3
INT-128	Historical Interiors and Architecture*	3
INT-129	SketchUp for Interior Design*	3
INT-312	Interior Design Topics*	1
INT-315	Regional Perspective in Interior Design* **OR**	1
INT-311	Global Perspectives in Interior Design*	
		14
Term 2		
INT-132	Theories and Visual Application*	3
INT-300	Textiles for Interior Design*	3
INT-201	CAD REVIT for Interior Design I*	3
INT-185	Architectural Photoshop Techniques*	1
ART-133	Drawing	3
ENG-105	Composition I	3
		16
Term 3		
MGT-145	Human Relations in Management **OR**	3
PSY-111	Introduction to Psychology **OR**	
SOC-110	Introduction to Sociology	
INT-200	Interior Design Studio*	3
ENG-106	Composition II **OR**	3
ENG-108	Composition II: Technical Writing **OR**	
SPC-101	Fundamentals of Oral Communication **OR**	
SPC-112	Public Speaking	
		9
Term 4		
INT-206	Residential Design I*	4
INT-207	Commercial Design I*	4
INT-211	CAD REVIT for Interior Design II*	3
CON-316	Sustainable Construction Science	3
		14
Term 5		
INT-208	Costing and Estimating Interior Materials and Finishes*	3
INT-216	Residential Design II*	4
INT-217	Commercial Design II*	4
INT-218	Professional Practice and Development*	3
INT-262	Interior Codes and Building Structures*	3
		17

Course Number	Course Title	Credit Hours
Term 6		
INT-932	Internship*	3
		3

Total program credit hours		73

Optional Courses

INT-924	Honors Project*	1
INT-928	Independent Study*	1

*Minimum C- required to graduate

Landscape Horticulture Studies
Ag Sciences
Horticulture
319-398-5441
www.kirkwood.edu/agrisciences

Entry time
Fall, Spring

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

Landscape Horticulture Studies AAS
Landscaping is so much more than just plants and patios! In our Landscape and Horticulture Studies program, students who like to be outside or work with their hands can explore new trends in design, hardscape installation and maintenance. In addition to traditional landscape classes, the science of plants, alternative food crop production, and sustainable site management are emphasized in this program. Students can elect to take classes that relate to greenhouse or nursery production, growing fruits & vegetables, and hydroponics.

The entire Kirkwood campus is an outdoor learning laboratory for our classes. Students will work on real world projects that require problem solving, communication with clients, and time management skills. Using computer, operating large equipment and learning to identify native and ornamental plants are just a few of the opportunities students will have while taking classes in our curriculum.

Landscape Horticulture Studies Diploma
Students in the Landscape Horticulture Studies program may elect to receive this Diploma after completing the courses below. Please consult with the Ag Sciences Department for more information regarding this option.

Career opportunities: landscape designer for private homes or corporate campuses; garden center or greenhouse manager; salesperson; commercial grounds foreman; nursery production.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
AGH-112	Introduction to Turfgrass Management	3
AGH-236	Plant Material Maintenance	3

AGH-220	Plant Identification I	3
AGH-110	Success in Horticulture	1
AGH-152	Landscape Design Techniques	3
AGH-157	Equipment Operations	2
AGH-150	Equipment Operations Lab	1
		16

Term 2

AGH-221	Principles of Horticulture	3
AGH-102	Horticulture Math	3
COM-723	Workplace Communications OR	3
ENG-105	Composition I	
AGH-144	Landscape Construction	3
AGH-167	Introduction to Landscape Computer Design	4
AGH-283	Pesticide Application Certification	2
		18

Term 3

AGC-932	Internship	3
		3

Term 4

AGH-293	Landscape Business Operations	2
AGH-240	Plant Identification II	3
AGH-238	Soil and Water Conservation	3
AGH-166	Turfgrass and Landscape Irrigation	3
AGH-304	Hardscape Installation	4
AGH-168	Hardscape Design	2
		17

Term 5

MGT-145	Human Relations in Management OR	3
PSY-111	Introduction to Psychology	
-------	Humanities Course	3
AGH-303	Sustainable Site Management	3
AGH-200	Landscape Estimating and Bidding	2
AGH-465	Turf and Landscape Capstone	3
SPC-101	Fundamentals of Oral Communication	3
		17

Total program credit hours		**71**

Diploma Requirements

Course Number	Course Title	Credit Hours

Term 1

AGH-220	Plant Identification I	3
AGH-110	Success in Horticulture	1
COM-723	Workplace Communications	3
AGH-157	Equipment Operations	2
AGH-150	Equipment Operations Lab	1
		10

Term 2

AGH-221	Principles of Horticulture	3
AGH-102	Horticulture Math	3

AGH-112	Introduction to Turfgrass Management	3
AGH-144	Landscape Construction	3
MGT-145	Human Relations in Management OR	3
PSY-111	Introduction to Psychology	
		15

Term 3

AGH-152	Landscape Design Techniques	3
AGH-236	Plant Material Maintenance	3
AGH-167	Introduction to Landscape Computer Design	4
		10

Total program credit hours		**35**

Medical Assisting

Allied Health
2164 Linn Hall
319-398-5566
www.kirkwood.edu/alliedhealth

Entry time
Fall, Spring, Summer
Award
Diploma
3 terms (including summer)
Associate of Applied Science degree
4 terms (including summer)

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 (MAERB).

Commission on Accreditation of Allied Health Education Programs: 9355-113th Street N, #7709, Seminole, FL 33775, 727-210-2350.

After earning a Medical Assisting diploma, graduates are eligible to take the nationally-recognized Certified Medical Assistant exam. Most employers require certification upon employment.

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, assist the physician with patient exams, 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.

Career opportunities: physician/specialty clinics; hospital clinics, public health, laboratories and insurance companies. The graduate may work as an administrative medical assistant, clinical medical assistant, patient service repre-

sentative, phlebotomist, scribe, unit secretary or any combination of these positions.

Medical Assisting Diploma Requirements

Course Number	Course Title	Credit Hours
Prerequisite		
BIO-161	Basic Anatomy and Physiology* **OR**	3
BIO-168	Human Anatomy and Physiology I* **AND**	
BIO-173	Human Anatomy and Physiology II*	
		3
Term 1		
MAP-123	Administrative Medical Office Procedures	3
MAP-125	Introduction to Clinical Procedures	2
MAP-501	Math for Medications	1
HSC-107	Professionals in Health*	2
CSC-116	Information Computing*	3
HSC-115	Medical Terminology*	4
		15
Term 2		
MAP-214	Medical Lab	3
MAP-312	Medical Assisting Clinical Procedures	3
MAP-402	Medical Law and Ethics	2
MAP-403	Basic Medical Office Insurance	2
MAP-513	Medical Assisting Pharmacology	3
		13
Term 3		
MAP-618	Medical Assisting Externship++	7
PSY-111	Introduction to Psychology*	3
SPC-101	Fundamentals of Oral Communication* **OR**	3
COM-222	Communication for Health Care Professionals* **OR**	
SPC-112	Public Speaking*	
		13
Total Diploma program credit hours		**44**

Degree Requirements (Optional)

Course Number	Course Title	Credit Hours
Prerequisite		
BIO-161	Basic Anatomy and Physiology* **OR**	3
BIO-168	Human Anatomy and Physiology I* **AND**	
BIO-173	Human Anatomy and Physiology II*	
		3
Term 1		
MAP-123	Administrative Medical Office Procedures	3
MAP-125	Introduction to Clinical Procedures	2
MAP-501	Math for Medications	1

Course Number	Course Title	Credit Hours
HSC-107	Professionals in Health*	2
HSC-115	Medical Terminology*	4
CSC-116	Information Computing*	3
		15
Term 2		
MAP-214	Medical Lab	3
MAP-312	Medical Assisting Clinical Procedures	3
MAP-402	Medical Law and Ethics	2
MAP-403	Basic Medical Office Insurance	2
MAP-513	Medical Assisting Pharmacology	3
		13
Term 3		
SPC-101	Fundamentals of Oral Communication* **OR**	3
COM-222	Communication for Health Care Professionals* **OR**	
SPC-112	Public Speaking*	
MAP-618	Medical Assisting Externship++	7
PSY-111	Introduction to Psychology*	3
		13
Term 4		
ENG-105	Composition I*	3
-------	Electives*	10
-------	Humanities or History/Culture Elective*	3
-------	Behavioral/Social Science Elective*	3
		19
Total Associate of Applied Science degree program credit hours		**63**
Optional		
HSC-205	Exploration of Healthcare Careers	3
HSC-103	Studies in Health Sciences	1
HSC-168	Nurse Aide	3.5
HSC-162	Health Support Professional	3.5
HSC-118	Academic Success in Healthcare	1

*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- courses, HSC-107, HSC-115.

Medical Laboratory Technology

Healthcare Simulation Center
2006 Linn Hall
319-398-7660
www.kirkwood.edu/medicallaboratory

Entry time
Fall
Award
Medical Laboratory Technology AAS (6 terms)

Clinical Laboratory Assistant Certificate (1 term)

Medical Laboratory Technology AAS

Medical Laboratory Technicians (MLTs) are members of the healthcare and quality teams who perform, evaluate, assure the accuracy and validity of laboratory test information and collaborate in the diagnosis, treatment and therapy of patients. MLTs are trained to work in multiple settings such as hospitals, physician's offices, private reference laboratories, research, biotechnology, public health, non-clinical industrial laboratories and sales or technical services.

Various diverse functions of sample collection, test analysis, principle application, quality control monitoring, use and maintenance of automated and electronic instruments, trouble shooting and problem solving techniques are performed under the supervision of a Medical Laboratory Scientist or Pathologist in compliance with safety and governmental regulations. The individual will develop competencies in areas such as chemistry, hematology, blood bank, microbiology, immunology, molecular diagnostics and quality assurance.

Upon successful completion of the program the student is eligible to take the national certification exam from the American Society for Clinical Pathology (ASCP)

The Kirkwood Community College Medical Laboratory Technology program is accredited by the National Accrediting Agency for Clinical Laboratory Services (NAACLS). 5600 N River Road, Suite 720, Rosemont, IL 60018-5119, 773-714-8880.

Clinical Laboratory Assistant certificate

The Clinical Laboratory Assistant (CLA) Certificate is designed to provide exposure to clinical laboratory techniques and procedures needed in entry-level laboratory jobs. This certificate can be completed within one semester and can be applied toward an Associate of Applied Science degree in Medical Laboratory Technology.

A Clinical Laboratory Assistant plays a supporting role in collecting and processing specimens in a medical laboratory. Their responsibilities can include tasks such as drawing blood samples (phlebotomy) and running laboratory tests for disease detection using manual methods or automated instruments. CLAs are also trained in infection control. biosafety practices and quality assurance. A CLA works directly under a Medical Laoboratory Scientist or Pathologist. In non-hospital laboratories, they may also help with administrative and clerical tasks.

It is important that CLAs possess an interest in the sciences in addition to being professional and detail-oriented.

Upon successful completion students are eligible to take the National Healthcareer Association Certified Phlebotomy Technician (CPT) exam.

Degree Requirements

Course Number	Course Title	Credit Hours

Term 1

Course Number	Course Title	Credit Hours
MLT-105	Pathophysiology for the Laboratorian*	3
MLT-106	Introduction to Biosafety*	1
MLT-109	Principles of Phlebotomy*	3
MLT-115	Clincal Lab Fundamentals*	3
COM-222	Communication for Health Care Professionals**	3
BIO-161	Basic Anatomy and Physiology**	3
		16

Term 2

MLT-120	Urinalysis*	3
MLT-130	Hematology*	3
BIO-186	Microbiology	4
SOC-115	Social Problems**	3
ENG-105	Composition I**	3
		16

Term 3

MLT-233	Hemostatis and Thrombosis*	2
MLT-230	Advanced Hematology*	3
MLT-270	Immunology and Serology*	2
CHM-110	Introduction to Chemistry**	3
CHM-111	Introduction to Chemistry Lab**	1
		11

Term 4

MLT-245	Clinical Chemistry*	5
MLT-255	Clinical Microbiology*	5
MLT-260	Immunohematology*	4
MLT-290	Clinical Seminar and Review*	2
		16

Term 5

MLT-283	Clinical Practicum: Urinalysis*	1
MLT-286	Clinical Practicum: Immunology and Serology*	1
MLT-287	Clinical Practicum: Hematology*	4
MLT-293	Clinical Practicum: Immunohematology	3
MLT-297	Clinical Practicum: Chemistry	3
		12

Term 6

MLT-288	Clinical Practicum: Microbiology*	4
MLT-291	Lab Survey and Review*	1
		5

Total program credit hours   76

Clinical Laboratory Assistant Certificate Requirements

Course Number	Course Title	Credit Hours

Term 1

MLT-105	Pathophysiology for the Laboratorian*	3
MLT-106	Introduction to Biosafety*	1
MLT-109	Principles of Phlebotomy*	3
MLT-115	Clincal Lab Fundamentals*	3
COM-222	Communication for Health Care Professionals**	3

BIO-161	Basic Anatomy and Physiology	3
		16

Total program credit hours 16

* Minimum C grade in all MLT courses to graduate

**Recommended course, other options available, see advisor

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 terms)

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.

Network Administration students will specialize in LAN and WAN infrastructure including wireless, desktop systems and protocol suites.

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 credentials: CompTIA A+; CompTIA Network+; CompTIA Security+; Microsoft Certified Solution Associate; CompTIA Linux+; Cisco Certified Network Associate; Microsoft Certified Professional; Microsoft Certified Solutions Expert; and VMware Certified Professional

Career opportunities: network field technician; network engineer; network support technician; network control operator; assistant network administrator; assistant systems administrator.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
BCA-189	Microcomputer Literacy*	1
CIS-103	IT Career Exploration	1
NET-130	Computer Concepts*	3
NET-165	Network Plus*	3
ENG-105	Composition I	3
---------	Math Course	4
		15
Term 2		
NET-119	Virtualization and Cloud Concepts*	2
NET-174	LAN Administration*	3
NET-235	CCNA Cisco 1*	3
NET-630	Cyber Law and Ethics*	3
-------	Communication Course	3
		14
Term 3		
NET-236	CCNA Cisco 2*	3
NET-400	Linux Networking*	3
NET-561	Directory Administration*	3
		9
Term 4		
NET-571	Server Configuration*	3
NET-600	Network Security Basics*	3
NET-616	VMware VCP*	3
NET-618	Network Defense & Remote Access Configuration*	3
MGT-145	Human Relations in Management OR	3
PSY-111	Introduction to Psychology	
		15
Term 5		
BUS-290	Employment Search and Workplace Success	1
NET-237	CCNA Cisco 3*	3
NET-620	VMWare Optimize and Scale*	3
NET-619	Network Attacks: Detection, Analysis & Countermeasures*	3
NET-348	System Automation and Scripting*	3
-------	Humanities or History/Culture Course	3
		16

Total program credit hours 69

*Minimum grade of C- for graduation

Nursing - LPN/RN
Nursing
2172 Linn Hall
319-398-5563
319-398-4989
www.kirkwood.edu/nursing

Entry time
Fall, Spring, Summer
NOTE: The Nursing Program is a day program. However, some evening or week-end experiences may be required.

Award
Associate of Applied Science degree
2 years (4 terms plus prerequisites)

Diploma
1 year (2 terms 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.

NLN CNEA Pre-Accreditation
- The Kirkwood Community College Associate Degree in Nursing program holds pre-accreditation status from the National League for Nursing Commission for Nursing Education Accreditation, located at 2600 Virginia Avenue, NW, Washington, DC, 20037 202-909-2526.
- Holding pre-accreditation status does not guarantee that initial accreditation by NLN CNEA will be received.

Program Description: 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 clinicals in area hospitals, nursing homes, clinics, mental health facilities, home health agencies and a variety of specialty clinics.

Additional requirements

- GPA of 2.75 in pre-requisites with Minimum C in each course EXCEPT: minimum B- in Introduction to Nursing and Anatomy & Physiology I and II

- May take each pre-requisite course only twice

- Anatomy & Physiology I and II courses must be taken within 5 years of entry into the nursing program and must be 3 credits didactic course with a 1 credit lab

- Introduction to Nursing must be taken within 2 semesters of entry into the nursing program

- TOEFL IBT of 84 with a minimum Speaking score of 26 for those who have not graduated from a high school or college in the United States

- Meet the program Math requirement listed below by achieving one of the requirements below:
  - COMPASS algebra score of ≥ 50
  - ACT math score of ≥ 19
  - ALEKS algebra score of 30 (effective October 1, 2016)
  - College level Math course equivalency
  - Earned AA or Bachelor's Degree
  - Please Note: Test scores expire after 2 years

- Personal laptop is required for all computer based testing. Specifications of laptop requirements are available

on the the Kirkwood Nursing website or at the Department of Nursing office; 2172 Linn Hall.

- Certified Nursing Assistant OR Health Support Professional
  - Certified Nursing Assistant demonstrated by the following:
    - Certificate of completion of an Iowa CNA course (with completion of the clinical component of the course)
    - Listing in the Iowa Department of Inspections and Appeals Direct Care Worker Registry as eligible
    - **NOTE:** Students may obtain CNA training through Kirkwood's Continuing Education

OR
- Health Support Professional demonstrated by the following:
  - Certificate of completion of all Health Support Professional (HSP) modules in the Iowa Prepare to Care Direct Care Professional Career Pathway (http://www.iowapreparetocare.com/?responseToken=0ee7e60c625538620a0f23d376df6be10) curriculum
  - Listing in the Care Book as an HSP
  - Minimum of 80 hours of work experience as an HSP supported with the following:
  - Letter from nurse manager
  - Official job description

- **Compliance Requirements:**
  - Criminal and Dependent Adult Abuse and Child Abuse Background Checks
  - Immunizations
  - Current certification for American Heart Association Health Care Provider in CPR
  - Administrative requirements
  - **NOTE:** Students must provide immunization paperwork for specified immunizations and pass a Criminal and Dependent Adult Abuse and Child Abuse Background Check prior to admission to the program. Failure to pass these background checks, complete the immunizations or administrative requirements will prevent admission to the Nursing Program.

- **NOTE: Nursing courses with a clinical component may NOT be taken by a person:**
  - Who has been denied licensure by the Iowa Board of Nursing.
  - Whose license is currently suspended, surrendered or revoked in any United States jurisdiction.
  - Whose license/registration is currently suspended, surrendered or revoked in another country due to disciplinary action.

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.

Nursing Degree Requirements

Course Number	Course Title	Credit Hours
Prerequisites		
BIO-168	Human Anatomy & Physiology I***	4
BIO-151	Nutrition**	3
ENG-105	Composition I** **OR**	3
ENG-120	College Writing**	
PSY-111	Introduction to Psychology**	3
SOC-110	Introduction to Sociology**	3
----------	Humanities or History/Culture Course**	3
		19
Term 1		
BIO-173	Human Anatomy & Physiology II***	4
HSC-189	Introduction to Nursing***	4
PSY-121	Developmental Psychology**	3
BIO-186	Microbiology**	4
SPC-101	Fundamentals of Oral Communication** **OR**	3
SPC-112	Public Speaking**	
		18
Term 2		
PNN-228	Foundations of Nursing I***	6
PNN-280	Pharmacology I***	2
PNN-721	Foundations of Nursing Clinical I	2
PNN-293	Health Assessment***	3
		13
Term 3		
PNN-229	Foundations of Nursing II***	4
PNN-282	Pharmacology II***	2
PNN-446	Nursing Care of the Growing Family***	4
PNN-723	Foundations of Nursing Clinical II	2
		12
Term 4		
ADN-171	Concepts of Nursing I***	5
ADN-740	Concepts of Nursing Clinic	3
ADN-176	Advanced Concepts in Mental Health Across the Continuum***	4
		12
Term 5		
ADN-180	Advanced Concepts of Nursing***	4
ADN-760	Advanced Concepts of Nursing Clinical***	4
ADN-183	Advanced Concepts in Obstetric and Pediatric Nursing***	4
		12
Total Associate Degree Nursing credit hours		86
Optional		
ADN-924	Honors Project	1
HSC-160	Healthcare Communication and	3

Comprehension

Nursing Diploma Requirements

Course Number	Course Title	Credit Hours
Prerequisites		
BIO-168	Human Anatomy & Physiology I***	4
BIO-151	Nutrition**	3
PSY-111	Introduction to Psychology**	3
		10
Term 1		
BIO-173	Human Anatomy & Physiology II***	4
HSC-189	Introduction to Nursing***	4
PSY-121	Developmental Psychology**	3
		11
Term 2		
PNN-228	Foundations of Nursing I***	6
PNN-280	Pharmacology I***	2
PNN-721	Foundations of Nursing Clinical I	2
PNN-293	Health Assessment***	3
		13
Term 3		
PNN-229	Foundations of Nursing II***	4
PNN-282	Pharmacology II***	2
PNN-446	Nursing Care of the Growing Family***	4
PNN-723	Foundations of Nursing Clinical II	2
		12
Total Practical Nurse credit hours		46
Optional		
PNN-924	Honors Project	1

*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.

***Completion of courses with a B- minimum required.

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 terms, including summer)

Accreditation
The Occupational Therapy Assistant program is accredited

by the Accreditation Council for Occupational Therapy Education (ACOTE). Graduates of the program are eligible to sit for the national 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. A felony conviction may affect a graduate's ability to sit for the NBCOT certification exam or obtain state licensure. The Accreditation Council for Occupational Therapy Education (ACOTE) of the American Occupational Therapy Association (AOTA) 6116 Executive Boulevard, Suite 200, North Bethesda, MD 20852-4929; (301) 652-AOTA www.acoteonline.org.

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.

The primary location for Occupational Therapy Assistant students will be the Linn County Regional Center in Hiawatha.

Degree Requirements

Course Number	Course Title	Credit Hours
Prerequisites		
HSC-117	Basic Medical Terminology* **OR**	2.5
HSC-115	Medical Terminology*	
BIO-168	Human Anatomy and Physiology I*	4
		6.5
Term 1		
OTA-101	Foundations of Occupational Therapy	2
OTA-207	OT Methods I	3
OTA-213	Occupational Development	2
BIO-173	Human Anatomy and Physiology II*	4
HSC-107	Professionals in Health*	2
PSY-111	Introduction to Psychology*	3
		16
Term 2		
OTA-211	Pathophysiology for the OTA	4
OTA-212	Functional Kinesiology	3
OTA-306	OT Methods II	3
OTA-405	Psychosocial Dysfunction	4
OTA-850	OTA Fieldwork I-A	1
SPC-101	Fundamentals of Oral Comm* **OR**	3
COM-222	Communication for Health Care Professionals* **OR**	
SPC-112	Public Speaking*	

		18
Term 3		
ENG-105	Composition I*	3
OTA-308	Physical Dysfunction I	4
OTA-309	Physical Dysfunction II	4
OTA-851	OTA Fieldwork I-B**	1
		12
Term 4		
OTA-205	OTA Management	2
OTA-206	Community Health & Special Populations	3
OTA-406	OT Methods III	3
OTA-411	Geriatric Interventions for the OTA	1.5
OTA-412	Pediatric Interventions for the OTA	3
OTA-853	OTA Fieldwork I-C**	2.5
-------	Humanities or History/Culture Course*	3
		18
Term 5		
OTA-409	Professional Development	2
OTA-852	OTA Fieldwork II-A**	6
OTA-854	OTA Fieldwork II-B**	6
		14
Total program credit hours		**84.5**
Optional		
HSC-103	Studies in Health Sciences	1

*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, as well as all program prerequisites courses and BIO-168, BIO-173.

Paralegal Studies
Social Sciences
1008 Cedar Hall
319-398-4911
www.kirkwood.edu/socialsciences

Entry time
Fall, Spring, Summer

Award
Associate of Applied Science (4 terms)

Paralegals are legal professionals who assist attorneys in all areas of the law. 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 Community College is a longstanding member of the American Association for Paralegal Education. Kirkwood's Paralegal Studies helps prepare students for en-

try-level positions in the paralegal profession. 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 governmental 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 12 credits of legal specialty course work is allowed. 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.

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 a legal career will find program courses useful. Introduction to Law, the first program course, satisfies three credit hours of social science requirement toward an A.A. or A.A.S. degree. It is recommended that you work closely with your paralegal advisor.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1		
PRL-103	Introduction to Law	3
ENG-120	College Writing **OR**	5
ENG-105	Composition I **AND**	
ENG-106	Composition II **OR**	
ENG-108	Composition II: Technical Writing	
SPC-101	Fundamentals of Oral Communication **OR**	3
SPC-112	Public Speaking	
BCA-189	Microcomputer Literacy **OR**	1
CSC-116	Information Computing	
---------	Humanities or History/Culture Course	3
---------	Math Course	3
		18
Term 2		
PRL-116	Fundamentals of Legal Research & Writing	3
PRL-176	Civil Litigation	3
---------	Program Elective	3
---------	Social Sciences Course	3
		12
Term 3		
PRL-117	Advanced Legal Research & Writing	3
PRL-174	Contracts	3
---------	Humanities or History/Culture Course	3
---------	Social Sciences Course	3
---------	Program Elective	6
		18
Term 4		
PRL-133	Torts	3
---------	Humanities or History/Culture Course	3
---------	Science Course	3
---------	Program Elective	6
		15

Total program credit hours   63

Program Electives:

PRL-121	Investigation for Paralegals	3
PRL-143	Business Organization Law	3
PRL-151	Real Estate Law	3
PRL-161	Family Law	3
PRL-166	Estate Planning/Administration	3
PRL-171	Administrative Law	3
PRL-186	Employment Law Topics	3
PRL-192	Criminal Law and Procedure for the Paralegal	3
PRL-193	Constitutional Law	3
PRL-932	Internship	3

Paramedic
Healthcare Simulation Center
2006 Linn Hall
319-398-1269
www.kirkwood.edu/paramedic

Entry time
Spring

Award
Associate of Applied Science degree
2 years (5 terms)

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 ad-

vanced 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 Medical 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

Course Number	Course Title	Credit Hours
Term 1-Prerequisites		
EMS-255	Emergency Medical Technician I*** **AND**	8
EMS-350	Emergency Medical Technician II*** **AND**	
EMS-365	Emergency Medical Technician II Clinical*** **OR**	
EMS-300	Advanced Emergency Medical Technician***	
BIO-168	Human Anatomy & Physiology I	4
HSC-117	Basic Medical Terminology **OR**	2.5
HSC-115	Medical Terminology	
MAT-772	Applied Math **OR**	3
MAT-707	Algebra Mastery I **OR**	
MAT-115	Mathematics and Society **OR**	
MAT-136	Trigonometry and Analytic Geometry **OR**	
MAT-157	Statistics	
		18
Term 2		
EMS-641	Introduction to Paramedicine	3
EMS-642	Pharmacology for Paramedicine	3
BIO-173	Human Anatomy & Physiology II	4
SPC-101	Fundamentals of Oral Communication* **OR**	3
SPC-112	Public Speaking* **OR**	
SPC-122	Interpersonal Communication* **OR**	
COM-222	Communication for Health Care Professionals*	
PSY-111	Introduction to Psychology*	3
		16
Term 3		
EMS-643	Cardiorespiratory Paramedicine	3
EMS-644	Paramedic Clinical I	3
EMS-645	Paramedic I	2.5
ENG-105	Composition I* **OR**	3
ENG-108	Composition II: Technical Writing* **OR**	
ENG-120	College Writing*	
		11.5
Term 4		
EMS-646	Paramedic Clinical II	4
EMS-647	Paramedic II	3.5
EMS-648	Special Patient Populations in Emergency Medical Services	4
EMS-649	Trauma & Environmental Emergencies	4
BCA-189	Microcomputer Literacy*	1
		16.5
Term 5		
EMS-650	Medical and Psychological Emergencies	4
EMS-651	Paramedic Fieldwork	4
EMS-652	Paramedic Clinical III	4
EMS-653	Paramedic III	1
-------	Humanities or History/Culture Course*	3
		16
Total program credit hours		**78**

Emergency Medical Technician (EMT) Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
EMS-255	Emergency Medical Technician I*** **AND**	8.5
EMS-350	Emergency Medical Technician II*** **AND**	
EMS-365	Emergency Medical Technician II Clinical*** **OR**	
EMS-300	Advanced Emergency Medical Technician***	
BIO-168	Human Anatomy & Physiology I	4
HSC-117	Basic Medical Terminology* **OR**	2.5
HSC-115	Medical Terminology	
MAT-772	Applied Math **OR**	3
MAT-707	Algebra Mastery I **OR**	
MAT-115	Mathematics and Society **OR**	
MAT-136	Trigonometry and Analytic Geometry **OR**	
MAT-157	Statistics	
		18
Total program credit hours		**18**

*Courses may be taken before beginning the paramedic core curriculum portion of the program, with program directors permission.

**Prerequisite courses must be taken before acceptance into the program.

***Students are recommended to take EMS-255, EMS-350 and EMS-365. EMS-300 may be taken instead.

Current paramedics may also complete the degree requirements, with credit awarded for previous EMS course work, if successfully completed prior to Summer 2016.

Parks and Natural Resources
Ag Sciences
Horticulture

319-398-5441
www.kirkwood.edu/agrisciences

Entry time
Fall, Spring, Summer

Award
Associate of Applied Science degree
2 years (5 terms)
Diploma
3 terms

If you enjoy the outdoors and have a deep concern for preserving and managing our 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: Graduates work in beautiful outdoor surroundings. Most jobs are in government parks and entail park maintenance, security, public relations and management. You may need to relocate to work year-round. Job opportunities include working in a city, county or state park as an attendant or naturalist; working in conservation, lake, trail or prairie management; environmental education, or making land improvements in a soil conservation district. A bachelor's degree will help in getting desired jobs in county, state and national parks and wildlife areas.

Degree Requirements

Course Number	Course Title	Credit Hours
Term I		
AGH-220	Plant Identification I	3
AGH-110	Success in Horticulture	1
AGH-283	Pesticide Application Certification	2
SPC-101	Fundamentals of Oral Communication	3
AGN-105	Applications of Natural Resources	3
-------	Technical Elective	3
-------	Humanities or History/Culture Course	3
		18
Term 2		
COM-723 ENG-105	Workplace Communication **OR** Composition I	3
AGC-313	Leadership in Agriculture	1
AGH-157	Equipment Operations	2
AGH-150	Equipment Operations Lab	1
AGN-250	Park Maintenance Programs	3
AGH-102	Horticulture Math	3
-------	Technical Elective	3
		16
Term 3-Summer		
AGC-932	Internship	3
		3

Course Number	Course Title	Credit Hours
Term 4		
AGN-248	Natural Resources Appreciation	3
AGN-244	Wildlife Management	3
AGN-140	Native Plants	3
AGN-220	Avian Wildlife	3
AGN-223	Aquatic Wildlife	3
-------	Technical Elective	3
		18
Term 5		
AGN-226	Mammalian Wildlife	3
AGN-235	Park and Recreation Administration	3
AGN-240	Natural Resources Interpretation	3
--------	Behavioral/Social Science Course*	3
--------	Technical Elective	3
		15

Total program credit hours		**70**

Technical Electives

ENV-115	Environmental Science	3
AGH-236	Plant Material Maintenance	3
AGN-270	Watershed Assessment and Management	3
AGN-260	Wildland Firefighter Training	3
AGN-300	Rain Gardens and Bioretention Cells	3
AGH-144	Landscape Construction	3
AGH-238	Soil and Water Conservation	3
AGN-280	Introduction to Forestry	3
AGH-264	Hydroponic Production	3

Diploma Requirements

Course Number	Course Title	Credit Hours
Term 1		
AGH-220	Plant Identification I	3
CRJ-100	Introduction to Criminal Justice	3
COM-723	Workplace Communications	3
AGH-102	Horticulture Math	3
		12
Term 2		
AGN-250	Park Maintenance Programs	3
AGH-157	Equipment Operations	2
AGH-150	Equipment Operations Lab	1
AGH-162	Landscape Construction Lecture	2
AGH-164	Landscape Construction Lab	1
AGH-238	Soil and Water Conservation	3
		12
Term 3		
AGN-248	Natural Resources Appreciation	3
AGN-223	Aquatic Wildlife	3
AGN-220	Avian Wildlife	3
AGN-226	Mammalian Wildlife	3
AGN-140	Native Plants	3
		15

Total program credit hours 39

*CRJ-100 Intro to Criminal Justice is the recommended course. PSY-111, SOC-110 and other gen ed social science courses also fulfill this requirement.

Pet Grooming

Animal Health Technology
This program is not accepting students this year as it is undergoing significant revisions. We expect to resume admissions in Fall 2021.
Washington Hall
319-398-5609
www.kirkwood.edu/agrisciences

Entry time
Fall

Award
Diploma
1 years (2 terms including 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

Course Number	Course Title	Credit Hours
Term 1-Fall		
AGV-221	Professionalism for Pet Groomers	1
AGV-201	Pet Grooming I	3
AGV-202	Pet Grooming II	3
AGV-400	Grooming Shop Management I	3
AGV-206	Canine Behavior & Handling	3
COM-723	Workplace Communications	3
		16
Term 2-Spring		
AGV-401	Grooming Shop Management II	3
AGV-203	Pet Grooming III	3
AGV-204	Pet Grooming IV	3
MGT-145	Human Relations in Management	3
ACC-111	Introduction to Accounting	3
		15

Total program credit hours 31

Pharmacy Technician

Healthcare Simulation Center
2006 Linn Hall
319-398-1269
www.kirkwood.edu/pharmtech

Entry time
Fall or Spring

Award
Diploma
2 terms

Personal Characteristics
Attention to detail and conscientiousness are essential as well as the ability to function as a member of a heath 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

Course Number	Course Title	Credit Hours
Term 1		
PHR-154	Pharmacology for Pharmacy Technician I	2
PHR-165	Pharmacy Technician Calculations & Compounding with Lab	4
COM-222	Communication for Health Care Professionals **OR**	3
SPC-112	Public Speaking **OR**	
SPC-101	Fundamentals of Oral Communication	
BIO-161	Basic Anatomy & Physiology* **OR**	3
BIO-168	Human Anatomy and Physiology I* **AND**	
BIO-173	Human Anatomy and Physiology II*	
CSC-116	Information Computing	3

		15

Term 2

PHR-156	Pharmacology for Pharmacy Technician II	2
PHR-172	Pharmacy Technician Clinical	1
PHR-175	Pharmacy Technician Operations and Regulations	4
PSY-111	Introduction to Psychology	3
HSC-115	Medical Terminology	4
HSC-107	Professionals in Health	2
		16

Total program credit hours		**31**

*Must complete either BIO-161 or both BIO-168 and BIO-173

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 terms including summer)

Accreditation
The Physical Therapist Assistant program at Kirkwood Community College is accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE).

Commission on Accreditation in Physical Therapy Education (CAPTE), 3030 Potomac Ave, Suite 100, Alexandria, VA, 22305-3085, (703) 706-3245, website: www.capteonline.org, Email: accreditation@apta,org. To contact the program/institution directly, call (319) 398-5566.

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.

Physical therapist assistants (PTAs) work closely with physical therapists (PTs) to provide services to people with physical disabilities. Patient treatments may include exercise, functional activities, gait training, massage, electrical stimulation, hot/cold packs, traction and ultrasound and other therapeutic interventions. The PT performs an initial patient examination 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.

Career opportunities: outpatient clinics - orthopedics, sports medicine, pediatrics, etc.; hospitals; home health; skilled nursing facilities, nursing homes; rehabilitation centers; school systems.

The primary location for Physical Therapist Assistant students will be the Linn County Regional Center in Hiawatha.

Degree Requirements

Course Number	Course Title	Credit Hours
Prerequisites Classes		
Three courses are required prior to admission.		
PTA-101	Introduction to PTA**	2
BIO-168	Human Anatomy & Physiology I	4
HSC-117	Basic Medical Terminology	2.5
COM-222	Communication for Health Care Professionals** **OR**	3
SPC-101	Fundamentals of Oral Communication** **OR**	
SPC-112	Public Speaking** **OR**	
		11.5
Term 1-Fall		
PTA-103	PTA Patient Assessment	2
PTA-120	Kinesiology	3
PTA-140	Functional Motor Development	3
BIO-173	Human Anatomy & Physiology II**	4
HSC-107	Professionals in Health**	2
		14
Term 2-Spring		
PTA-110	Fundamentals for PTA***	3
PTA-150	Pathophysiology	3
PTA-196	PTA Modalities	4
PTA-203	PTA Therapeutic Exercise	2
PSY-111	Introduction to Psychology**	3
---------	Humanities or History/Culture Course**	3
		18
Term 3-Summer		
ENG-105	Composition I**	3
PTA-160	PTA Procedures I	3
PTA-161	PTA Procedures II	3
PTA-301	PTA Clinic I***	2
		11
Term 4-Fall		
PTA-215	Orthopedic Issues	4
PTA-232	Rehab for Medical Conditions	4
PTA-241	Neurology for PTA	4
PTA-302	PTA Clinic II***	2
		14
Term 5-Spring		
PTA-250	PTA Career Essentials	2
PTA-432	PTA Clinic III***	6
PTA-433	PTA Clinic IV***	6
		14

Total program credit hours		**82.5**

Optional

PTA-924	Honors Project	1
HSC--103	Studies in Health Sciences	1

**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 prerequisite courses, BIO-168, BIO-173 and all technical PTA courses.

Plumbing Pre-Apprenticeship

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

Entry time
Fall

Award
Diploma
1 year (2 terms)

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 calculation. 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.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1-Fall		
MAT-737	Applied Plumbing Math	3
PLU-130	Plumbing Theory I	6
PLU-140	Plumbing Practices I	4
PLU-148	Plan & Print Reading for Plumbing	2
PLU-932	Internship	2
		17

Course Number	Course Title	Credit Hours
Term 2-Spring		
MAT-738	Applied Plumbing Math II	1
PLU-132	Plumbing Theory II	8
PLU-142	Plumbing Practices II	4
PLU-150	Plumbing Plan & Print Reading II	2
---------	Communications Course	3
		18

Total program credit hours	**35**

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 terms including summer)

Accreditation
The Kirkwood Respiratory Therapy program, CoARC program number 200190, located in Cedar Rapids, Iowa, is accredited by the Commission on Accreditation for Respiratory Care (www.coarc.com). To prepare graduates with demonstrated competence in the cognitive (knowledge), psychomotor (skills), and affective (behavior) learning domains of respiratory care practices as performed by registered respiratory therapists (RRT). Upon completion of the Respiratory Therapy program, you should have the skills and knowledge needed for board exams; TMC (Therapist Multiple Choice) exam (entry level), WRRT and/or CSE exam(s) (Registered Respiratory Therapist). Exams are administered by the National Board of Respiratory Care (NBRC). Listed exams are required for employment, along with licensure to practice respiratory therapy. The Commission on Accreditation for Respiratory Care can be contacted at: 264 Precision Blvd., Telford, TN, 37690 or www.coarc.com.

Award Description
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

or 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; out-patient clinics; home health agencies; health education; medical research; physician offices.

Degree Requirements

Course Number	Course Title	Credit Hours
Prerequisites		
BIO-161	Basic Anatomy & Physiology** **OR**	3
BIO-168	Human Anatomy & Physiology I** **AND**	
BIO-173	Human Anatomy & Physiology II**	
BIO-186	Microbiology**	4
CHM-110	Introduction to Chemistry** **OR**	3
CHM-165	General Chemistry I**	
MAT-102	Intermediate Algebra**	4
		14
Term 1		
RCP-101	Respiratory Anatomy & Physiology Enrichment	1
RCP-120	Cardiopulmonary Assessment	1
RCP-212	Introduction to Respiratory Care	3.5
HSC-107	Professionals in Health*	2
HSC-115	Medical Terminology*	4
ENG-105	Composition I*	3
		14.5
Term 2		
RCP-220	Respiratory Care I	3
RCP-730	Respiratory Care Clinic I	2.5
RCP-300	Respiratory Physiology	4
PSY-111	Introduction to Psychology*	3
SPC-101	Fundamentals of Oral Communication* **OR**	3
SPC-112	Public Speaking* **OR**	
COM-222	Communication for Health Care Professionals*	
		15.5
Term 3		
RCP-370	Respiratory Pathology I	2
RCP-420	Pulmonary Function Testing	2
RCP-511	Respiratory Care II-A	4
RCP-512	Respiratory Care II-B	4
		12
Term 4		
RCP-470	Cardiac Monitoring	1.5
RCP-850	Respiratory Care III	2.5
RCP-610	Perinatology	2.5
RCP-380	Respiratory Pathology II	2.5
RCP-736	Respiratory Care Clinic II	6.0
		15
Term 5		
RCP-740	Respiratory Care Clinic III	6.5
RCP-891	Respiratory Care Applications	2.5
RCP-480	Advanced Cardiac Care	2.5
-------	Humanities or History/Culture Course*	3
		14.5

Total program credit hours	**85.5**

*Courses may be taken before beginning the program.

**Courses must be completed with a C- or better before admissions into the program.

Note: All Respiratory Therapist technical and elective courses must be completed with a C- or better to continue to the next semester.

Respiratory Therapist graduates take the Therapist Multiple Choice Exam administered by the National Board for Respiratory Care to become a certified respiratory therapist (CRT) and be eligible for their Registered Respiratory Therapy licensure upon passing the CRT exam.

Skilled Trades
Industrial Technologies
101 Jones Hall
319-398-4983
www.kirkwood.edu/skilledtrades

Entry time
Fall, Spring or Summer

Award
Associate of Applied Science degree
1 year

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 (A.A.S.) degree. This leaves only 18 credit hours of prescribed general education courses needed to earn the A.A.S. degree. Completion of this A.A.S. 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.

Career opportunities: advancement opportunities in supervisory and management-level positions.
(*U.S. Department of Labor Bureau of Apprenticeship & Training)

Degree Requirements

Course Number	Course Title	Credit Hours
CSC-116	Information Computing	3
ENG-101	Elements of Writing*	3
ENG-105	Composition I	3
-------	Humanities or History/Culture Course	3
MAT-115	Mathematics & Society*	3
PSY-111	Introduction to Psychology	3
Total program credit hours		**18**

*Requires placement score.

All courses can be completed online. Monitored exams may be required.

Surgical Technology

Allied Health
2164 Linn Hall
319-398-5566
www.kirkwood.edu/alliedhealth

Entry time
Spring (Cedar Rapids site)
Fall (Distance Education)

Award
Associate of Applied Science
2 years

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 Council on Education in Surgical Technology and Surgical Assisting (ARC/STSA). ST graduates will apply to take the Certified Surgical Technologist test. Certification is strongly recommended, and occasionally required, for employment. The Accreditation Review Council on Education in Surgical Technology and Surgical Assisting (ARC-STSA) can be contacted at: 19751 E. Main Street, Suite 339, Parker, CO, 80138, 303-694-9262, http://www.arcstsa.org. CAAHEP| 9355-113th Street N, #7709, Seminole, FL, 33775, 727-210-2350, www.caahep.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. They work under the supervision of a surgeon to ensure that the operating room or environment is safe, that equipment functions properly, and that the operative procedure is conducted under conditions that maximize safety. This degree program is designed for the surgical technology diploma graduate who wants to continue his or her education and receive an associate of applied science degree. With the escalating rate of change and increasing complexity of surgical procedures, the associate of applied science degree option will provide the student with a broader education basis, which may assist in career advancement.

Career opportunities: hospital operating rooms; sales representative; ambulatory surgery centers; teaching, hospital labor and delivery; hospital central supply; sterile processing; 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

Course Number	Course Title	Credit Hours
Prerequisites		
BIO-168	Human Anatomy & Physiology I*	4
HSC-115	Medical Terminology*	4
		8
Term 1		
ENG-105	Composition I*	3
PSY-111	Introduction to Psychology* OR	3
SOC-110	Introduction to Sociology*	
-------	Humanities Elective*	3
MGT-101	Principles of Management* OR	3
MGT-130	Principles of Supervision* OR	
MGT-145	Human Relations in Management*	
-------	Elective*	3
		15
Term 2		
HSC-107	Professionals in Health*	2
BIO-173	Human Anatomy & Physiology II*	4
SUR-126	Surgical Technology I	4.5
SUR-128	Surgical Technology I Lab	2
SUR-182	Microbiology for Surgical Technologists OR	1
BIO-186	Microbiology*	
		13.5
Term 3		
SPC-101	Fundamentals of Oral Communication* OR	3
COM-222	Communication for Health Care Professionals* OR	
SPC-112	Public Speaking* OR	
COM-723	Workplace Communications*	
SUR-322	Surgical Technology II	3
SUR-323	Surgical Technology II Lab	1
SUR-340	Surgical Specialties I	1
SUR-420	Pharmacology for the Surgical Technologist	2
SUR-440	Biomedical Sciences for Surgical Technology	2
		12

Term 4

Course Number	Course Title	Credit Hours
SUR-341	Surgical Specialties II	3
SUR-520	Surgical Technology Practicum I	2
SUR-523	Surgical Technology Practicum II	9
		14
Total program credit hours		**62.5**

*Courses may be taken before beginning the program.

Surgical Technology graduates will apply and take the Certified Surgical Technologist exam.

Note: Students must receive a C in all technical courses in the Surgical Technology program and a C- in BIO-168, BIO-173 and HSC-115.

Veterinary Assistant

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

Entry time
Fall

Award
Diploma
1 year (3 terms including 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.

Entrance Requirements:Entrance Requirements: Prospective students for the Veterinary Assistant program are required to take an entrance exam.There are minimum cut scores that must be achieved for admission into the program. For more information about the entrance exam, visit: http://www.kirkwood.edu/veterinaryassistant. You can also contact the Kirkwood Ag Sciences Department at 319-398-5609.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1-Fall		
AGV-105	Animal Behavior/Kennel Management	5
AGV-158	Veterinary Law and Ethics	3
AGV-153	Veterinary Reception and	3

	Administration Skills	
AGC-314	Leadership in Agriculture	2
AGV-152	Veterinary Computer Applications	2
MGT-145	Human Relations in Management	3
		18
Term 2-Spring		
AGV-107	Pharmacy Skills	3
AGV-101	Veterinary Assisting	3
COM-723	Workplace Communications	3
AGV-120	Veterinary Medical Terminology	1
AGV-143	Canine and Feline Nutrition	3
AGV-201	Pet Grooming I	3
AGC-314	Leadership in Agriculture	2
AGV-300	Clinical Veterinary Experience	2
AGC-210	Employment Seminar	1
		21
Term 3-Summer		
AGC-932	Internship (coordinator approval)	6
		6
Total program credit hours		**45**

Veterinary Technician

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

Entry time
Summer

Award
Associate of Applied Science degree
2 years (6 terms including 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.

Entrance Requirements: Prospective students for the Veterinary Technician program are required to take an entrance exam. There are minimum cut scores that must be achieved for admission into the program. For more information about the entrance exam, visit: http://www.kirkwood.edu/veterinarytechnician. You can also contact the Kirkwood Ag Sciences Department at 319-398-5609.

Degree Requirements

Course Number	Course Title	Credit Hours
Term 1-Summer		
AGC-116	Introduction to the Veterinary Technology Program	1
AGV-126	Animal Anatomy & Physiology I	3
AGV-152	Veterinary Computer Applications	2
AGV-120	Veterinary Medical Terminology	1
ENG-105	Composition I	3
		10
Term 2-Fall		
AGV-127	Animal Anatomy & Physiology II	4
AGV-142	Mathematics for Veterinary Technnicians	3
AGV-105	Animal Behavior/Kennel Management	5
AGC-313	Leadership in Agriculture	1
CHM-110	Introduction to Chemistry	3
CHM-111	Introduction to Chemistry Lab	1
		17
Term 3-Spring		
SPC-101	Fundamentals of Oral Communication **OR**	3
ENG-106	Composition II	3
AGV-214	Small Animal Medicine I	3
AGV-167	Veterinary Clinic Pathology I	3
AGV-161	Animal Nursing I	3
MGT-145	Human Relations in Management	3
AGV-140	Veterinary Pharmacology	3
		18
Term 4-Summer		
AGC-932	Internship	4
		4
Term 5-Fall		
AGV-162	Animal Nursing II	3
AGV-215	Small Animal Medicine II	3
AGV-168	Veterinary Clinic Pathology II	3
AGV-144	Fundamentals of Small Animal Nutrition	3
BIO-186	Microbiology	4
AGV-117	Professionalism for Veterinary Technicians	1
		17
Term 6-Spring		
AGV-171	Large Animal and Poultry	4

	Medicine	
AGV-163	Animal Nursing III	3
AGV-169	Veterinary Clinic Pathology III	3
AGV-216	Avian, Exotics, and Small Mammals	2
AGV-217	Diagnostic Technologies	2
------	Humanities or History/Culture Course	3
		17

Total program credit hours   **83**

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 (5 terms including summer)
Diploma
1 year (3 terms including 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.

The Water Environmental Technology Diploma awards the student with a credential recognizing completion of the first two semesters of coursework plus the internship.

The Water and Wastewater Treatment Specialist diplomas are designed to address the education requirements of both operators working in the water treatment industry and entry-level students interested in entering the water treatment and wastewater treatment industry. The diploma credential can be further laddered into the Water Environmental Technology AAS degree program.

The main objective of the program is to provide a comprehensive educational opportunity for immediate and future plan operators and treatment employees and managers. People who may be interested in the program:

- Entry-Level students interested in entering the field of water or wastewater treatment technology.

- Plant operators working on improving their industry certification level through attainment of coursework.

- Plant operators laddering their education into the Water Environmental Technology degree.

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

Course Number	Course Title	Credit Hours
Term 1-Fall		
WAT-308	Wastewater Analysis	3
WAT-307	Wastewater Treatment I	4
WAT-306	Wastewater Collection Systems	4
CHM-110	Introduction to Chemistry	3
MAT-102	Intermediate Algebra*	4
		18
Term 2-Spring		
WAT-304	Water Treatment I	4
WAT-305	Water Distribution Systems	4
WAT-300	Water Analysis	3
-------	Communications Course*	3
		14
Term 3-Summer		
WAT-932	Internship	3
		3
Term 4-Fall		
CSC-116	Information Computing*	3
WAT-312	Water Treatment II	4
WAT-400	Permits & Administration	1
WAT-301	Basic Mechanical Maintenance & Pumps	3
-------	Communications Course*	3
		14

Course Number	Course Title	Credit Hours
Term 5-Spring		
WAT-311	Wastewater Treatment II	4
WAT-210	Wastewater Treatment: Industrial	4
SOC-110	Introduction to Sociology*	3
WAT-401	Water and Wastewater Management	2
ENV-115	Environmental Science* **OR**	3
BIO-186	Microbiology*	
-------	Humanities or History/Culture Course*	3
		19
Total program credit hours		**68**
Optional		
WAT-924	Honors Project	1

Water Environmental Technology Diploma Requirements

Course Number	Course Title	Credit Hours
Term 1		
WAT-304	Water Treatment I	4
WAT-305	Water Distribution Systems	4
WAT-400	Permits and Administration	1
-------	Approved Math Course*	4
		13
Term 2		
WAT-308	Wastewater Analysis	3
WAT-307	Wastewater Treatment I	4
WAT-306	Wastewater Collection Systems	4
CHM-110	Introduction to Chemistry	3
WAT-401	Water and Wastewater Management	2
		16
Term 3		
WAT-932	Internship	3
-------	Communications Course*	3
		6
Total diploma program credit hours		**35**

Water Treatment Specialist Diploma Requirements

Course Number	Course Title	Credit Hours
First Semester		
WAT-304	Water Treatment I	4
WAT-305	Water Distribution Systems	4
WAT-300	Water Analysis	3
MAT-102	Intermediate Algebra	4
		15
Second Semester		
WAT-312	Water Treatment II	4
WAT-400	Permits & Administration	1
WAT-301	Basic mechanical Maintenance & Pumps	3
WAT-401	Water and Wastewater Management	2
ENV-115	Environmental Science*	3
		13

Third Semester

Course Number	Course Title	Credit Hours
WAT-932	Internship	3
------	Communications Course*	3
		6

Total diploma program credit hours   34

Wastewater Specialist Diploma Requirements

Course Number	Course Title	Credit Hours
First Semester		
WAT-307	Wastewater Treatment I	4
WAT-306	Wastewater Collection Systems	4
WAT-301	Basic Mechanical Maintenance & Pumps	3
MAT-102	Intermediate Algebra	4
		15
Second Semester		
WAT-311	Wastewater Treatment II	4
WAT-308	Wastewater Analysis	3
WAT-210	Wastewater Treatment: Industrial	4
WAT-401	Water and Wastewater Management	2
		13
Third Semester		
WAT-932	Internship	3
------	Communications Course*	3
		6

Total diploma program credit hours   34

*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

Award
Associate of Applied Science degree
2 years (5 terms including summer)
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

Course Number	Course Title	Credit Hours
Term 1		
CIS-103	IT Career Exploration	1
CIS-121	Introduction to Programming Logic*	3
CIS-207	Fundamentals of Web Programming*	3
GRA-131	Digital Layout	3
CSC-116	Information Computing	3
MAT-102	Intermediate Algebra	4
		17
Term 2		
BCA-290	Web Design Principles	3
MKT-110	Principles of Marketing	3
------	Emphasis area course*	3
CIS-335	Relational Database Technologies & SQL*	3
CIS-280	Client Side Scripting	3
		15
Term 3		
ENG-105	Composition I	3
PSY-111	Introduction to Psychology **OR**	3
MGT-145	Human Relations in Management	
		6

Term 4

CIS-249	Web Languages	3
CIS-290	Web Content and E-Commerce Systems	3
CIS-334	PHP/Apache/MySQL*	3
-------	Emphasis area course*	3
-------	Humanities or History/Culture Course	3
		15

Term 5

BCA-800	Web Technologies Capstone	3
CIS-342	PHP/Apache/MySQL II	3
ENG-106	Composition II **OR**	3
SPC-101	Fundamentals of Oral Communication	
BUS-290	Employment Search & Workplace Success	1
-------	Emphasis area course*	3
MGT-161	Agile Project Management with Scrum	3
		16

Total program credit hours	**69**

Emphasis Area Courses

Graphic Design

GRA-127	Illustrator I	3
GRA-140	Digital Imaging	3
GRA-195	Introduction to Web Media	3

Open Source Programming

CIS-171	Java*	3
CIS-175	Java II*	3
CIS-181	Java III	3

Microsoft Programming

CIS-622	.NET Development I *	3
CIS-624	.NET Development II*	3
CIS-626	.NET Development III	3

Web Development Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
CIS-121	Introduction to Programming Logic*	3
CIS-207	Fundamentals of Web Programming*	3
BCA-290	Web Design Principles	3
		9
Term 2		
CIS-280	Client Side Scripting	3
CIS-334	PHP/Apache/MySQL*	3
CIS-335	Relational Database Technologies and SQL*	3
		9

Total program credit hours	**18**

Web Design Certificate Requirements

Course Number	Course Title	Credit Hours
Term 1		
GRA-131	Digital Layout	3
CIS-207	Fundamentals of Web Programming*	3
MKT-110	Principles of Marketing	3
		9
Term 2		
BCA-290	Web Design Principles	3
CIS-290	Web Content and E-Commerce Systems	3
CIS-249	Web Languages **OR**	3
GRA-157	Web Design II	
		9

Total program credit hours	**18**

*Grade requirement C- or Higher

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

SPC-101	Fundamentals of Oral Communication	3
or		
SPC-112	Public Speaking	3

Communication - Writing

ENG-120	College Writing (Composition I-II equivalent)	5
or		
ENG-105 *and*	Composition I	3
ENG-106 *or*	Composition II	3
ENG-108	Composition II: Technical Writing	3

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.

(D) ANT-105	Cultural Anthropology	3
(D) ASL-171	American Sign Language II	4
(D) ASL-245	American Sign Language III	4
(D) ASL-281	American Sign Language IV	4
(D) CLS-151	Understanding Cultures: Latin America	3
(D) CLS-159	Understanding Cultures: Indigenous Central America	3
(D) CLS-165	Understanding Cultures: Modern Japan	3
(D) CLS-167	Understanding Cultures: Modern China	3
(D) FLF-142	Elementary French II	4
(D) FLF-241	Intermediate French I	4
(D) FLF-242	Intermediate French II	4
(D) FLS-142	Elementary Spanish II	4
(D) FLS-241	Intermediate Spanish I	4
(D) FLS-242	Intermediate Spanish II	4
HIS-121	Ancient Mediterranean World	3
HIS-122	Europe-Age of Monarchy	3
HIS-123	Europe-Age of Revolution	3
HIS-124	Europe-Age of Nationalism	3
HIS-135	Modern World Military History	3
HIS-151	U.S. History to 1877	3
HIS-152	U.S. History Since 1877	3
(D) HIS-221	Holocaust/Genocide: Memory & Literature	3

(D) HIS-254	American Indian History	3
HIS-291	History of Science	3
(D) REL-101	Survey of World Religions	3
(D) REL-120	Judaism, Christianity & Islam	3
(D) REL-125	Introduction to Islam	3
(D) REL-130	Intro to Religions of the East	3
(D) REL-140	Religion in the United States	3
REL-145	Intro to Christianity	3
(D) REL-160	Religions of China	3

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

ART-101	Art Appreciation	3
ART-143	Painting	3
ART-163	Sculpture	3
ART-173	Ceramics	3
ART-184	Photography	3
ART-186	Digital Photography	3
ART-203	Art History I	3
ART-204	Art History II	3
ART-420	Introduction to Glass	3
DRA-101	Introduction to Theatre	3
DRA-116	Film Analysis	3
DRA-125	Introduction to Play Analysis	3
HUM-105	Working in America	3
HUM-116	Encounters in Humanities	3
HUM-123	U.S. Film History	3
HUM-124	World Film History	3
HUM-190	Culture and Technology	3
MUS-100	Music Appreciation	3
PHI-101	Introduction to Philosophy	3
PHI-105	Introduction to Ethics	3
PHI-111	Basic Reasoning	3
PHI-130	Philosophy of Human Nature	3

Group 2 – Literature

(Prereq: ENG-105 or ENG-120)

(D) LIT-180	Mythology	3
LIT-203	Forms of Literature: Story Cycle	3
LIT-204	Forms of Literature: Nonfiction	3
LIT-205	Forms of Literature: Drama	3
LIT-206	Forms of Literature: Fiction	3
LIT-207	Forms of Literature: Poetry	3
LIT-208	Forms of Literature: New Media	3
LIT-209	Forms of Literature: Film Adaptation	3
(D) LIT-222	Literature & Culture: American Dreams	3
(D) LIT-224	Literature & Culture: Women and Work	3

LIT-225	Literature Themes: Beyond Bartleby	3
LIT-226	Literature Themes: Search for Identity	3
(D) LIT-227	Literature & Culture: World Poetry	3

Group 3 – Topics in Arts & Humanities

DRA-117	Film Topics	3
HUM-142	Popular Culture	3
HUM-200	International Study in Humanities	3
MUS-207	Introduction to Film Music	3
MUS-208	American Popular Music and Jazz	3
(D) PHI-125	Native American Philosophies	3
(D) PHI-126	Chinese Philosophies	3
PHI-132	Philosophy of Education	3
PHI-135	Multicultural Ethics	3
PHI-150	Social and Political Philosophy	3
PHI-160	Environmental Ethics	3

Mathematics

Students seeking an A.A. degree complete one college-level math course. Students seeking an A.S. degree complete 20 credit hours of Mathematics/Science including at least one college-level math course.

CSC-142	Computer Science	4
MAT-115	Mathematics and Society	3
MAT-117	Math for Elementary Teachers	3
MAT-120	College Algebra	3
MAT-136	Trigonometry & Analytic Geometry	5
MAT-138	College Algebra with Limits	4
MAT-140	Finite Math	3
MAT-149	Linear Algebra	3
MAT-150	Discrete Math	3
MAT-157	Statistics	4
MAT-162	Business Statistics	4
MAT-163	Quantitative Reasoning for Business	4
MAT-165	Business Calculus	3
MAT-210	Calculus I	4
MAT-216	Calculus II	4
MAT-219	Calculus III	4
MAT-227	Differential Equation with Laplace	4

Science

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-131	Genetics and Society	3

BIO-151	Nutrition	3
BIO-154	Human Biology	3
BIO-168	Human Anatomy & Physiology I	4
BIO-186	Microbiology	4
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
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

Group B

BIO-173	Human Anatomy & Physiology II w/ Lab	4
CHM-262	Organic Chemistry I	4.5
CHM-272	Organic Chemistry II	4.5

*Only one Geology course can count as Science credit.

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-103	Introduction to Early Childhood Education	3
ECE-170	Child Growth and Development	3
ECN-120	Principles of Macroeconomics	3
ECN-130	Principles of Microeconomics	3
EDU-110	Exploring Teaching	3
EDU-240	Educational Psychology	3
HSV-109	Introduction to Human Services	3
HSV-201	Loss, Trauma and Resilience	3
HSV-292	Substance Abuse and Treatment	3
MMS-101	Mass Media	3
POL-110	Introduction to Political Science	3
POL-111	American National Government	3
POL-121	International Relations	3
(D) POL-125	Comparative Government & Politics	3
POL-150	Introduction to U.S. Foreign Policy	3
PRL-103	Introduction to Law	3

PSY-111	Introduction to Psychology	3
PSY-121	Developmental Psychology	3
PSY-241	Abnormal Psychology	3
PSY-251	Social Psychology	3
PSY-261	Human Sexuality	3
SOC-110	Intro to Sociology	3
SOC-115	Social Problems	3
SOC-120	Marriage and Family	3
(D) SOC-220	Sociology of Aging	3
(D) SOC-265	Introduction to Lesbian, Gay, Bisexual & Transgender Studies	3
SOC-284	Sociology of the Environment	3
(D) SOC-200	Minority Group Relations	3

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.

CRJ-202	Cultural Awareness for Criminal Justice Practitioners	3
FLC-142	Elementary Chinese II	3
GLS-120	Education Experience Abroad	3
LIT-158	Literature of African Peoples	3

A. A. S. Degree Humanities Requirement

Courses in italics are also Associate of Arts core courses.
Courses with a (D) are approved diversity courses.

Art

ART-101	*Art Appreciation*	3
ART-203	*Art History I*	3
ART-204	*Art History II*	3
ART-173	*Ceramics*	3
ART-133	Drawing	3
ART-143	*Painting*	3
ART-157	Printmaking	3
ART-163	*Sculpture*	3
ART-184	*Photography*	3
ART-186	*Digital Photography*	3
ART-301	Design Fundamentals	3
ART-420	*Intro to Glass*	3

Communication

ENG-221	Creative Writing	3

Drama

DRA-101	*Introduction to Theatre*	3
DRA-130	Acting I	3
DRA-162	Technical Theatre	4

Foreign Language

ASL-141 or ASL-171	American Sign Language I or II (D)	4
FLS-118	Spanish for Professionals	3
FLC-141 or FLC-142	Elementary Chinese I or II (D)	4
FLF-141 or FLF-142	Elementary French I or II (D)	4
FLS-141 or FLS-142	Elementary Spanish I or II (D)	4

Humanities

HUM-116	*Encounters in Humanities*	3
ANT-105	*Cultural Anthropology (D)*	3
HUM-105	*Working in America*	3
HUM-190	*Culture and Technology*	3
CLS-192	Communication & Culture	3
DRA-116	*Film Analysis*	3
DRA-117	*Film Topics*	3
DRA-125	*Introduction to Play Analysis*	3
HUM-123	*U.S. Film History*	3
HUM-124	*World Film History*	3
HUM-142	*Popular Culture*	3
HUM-200	*International Study Humanities*	3

Interdisciplinary Studies

GLS-120	Education Experience Abroad	3
CLS-151	*Understanding Cultures: Latin America (D)*	3
CLS-159	*Understanding Cultures: Indigenous Central America (D)*	3
CLS-167	*Understanding Cultures: Modern China (D)*	3
CLS-165	*Understanding Cultures: Modern Japan (D)*	3

Literature

(note: most LIT courses have a pre-requisite of Eng-105 Composition I)

LIT-180	*Mythology*	3
LIT-203	*Forms of Literature: The Story Cycle*	3
LIT-204	*Forms of Literature: Nonfiction*	3
LIT-205	*Forms of Literature: Drama*	3
LIT-206	*Forms of Literature: Fiction*	3
LIT-207	*Forms of Literature: Poetry*	3
LIT-208	*Forms of Literature: New Media*	3
LIT-209	*Forms of Literature: Film Adaptation*	3
LIT-222	*Literature & Culture: American Dreams (D)*	3
LIT-226	*Literary Themes: Search for Identity*	3
LIT-224	*Literature and Culture: Women and Work (D)*	3
LIT-225	*Literary Themes: Beyond Bartelby*	3
LIT-227	*World Poetry*	3
LIT-105	Children's Literature	3
LIT-158	Literature of the African Peoples (D)	3
LIT-945	Selected Topics	1-3

Music

MUA-101	Applied Voice* (lower level 1 or credit	1-2
MUA-147	Applied Instrument *+ (private music lessons for beginning students, 1 or 2 credits)	1-2
MUS-100	*Music Appreciation*	3

MUS-138	Jazz Improvisation*	3
MUS-140	Concert Choir*	1
MUS-150	Chamber Ensemble-1 credit/semester*	1
MUS-152	Vocal Ensemble ^*	1
MUS-157	Vocal Jazz Ensemble^*	1
MUS-145	Concert Band* or Wind Ensemble^*	1
MUS-150	Chamber Ensemble-Steel Drums*	1
MUS-163	Instrumental Jazz Ensemble*	1
MUS-207	*Intro to Film Music*	*3*
MUS-208	*American Popular Music & Jazz*	*3*

^by audition contact arts@kirkwood.edu for more information

*repeatable for credit

+Instrument choices: Euphonium, Bassoon, Cello, Clarinet, Percussion, Flute, French Horn, Guitar, Oboe, Piano, Saxophone, String Bass, Trombone, Trumpet, Tuba, Viola, Violin

| *HIS-254* | *American Indian History (D)* | *3* |
| *HIS-291* | *History of Science* | *3* |

Philosophy and Religion

PHI-101	*Introduction to Philosophy*	*3*
PHI-111	*Basic Reasoning*	*3*
PHI-105	*Introduction to Ethics*	*3*
PHI-125	*Native American Philosophies (D)*	*3*
PHI-126	*Chinese Philosophies (D)*	*3*
PHI-130	*Philosophy of Human Nature*	*3*
PHI-135	*Multicultural Ethics (D)*	*3*
PHI-150	*Social and Political Philosophy*	*3*
PHI-160	*Environmental Ethics*	*3*
REL-101	*Survey of World Religions*	*3*
REL-120	*Judaism, Christianity, and Islam (D)*	*3*
REL-125	*Introduction to Islam (D)*	*3*
REL-130	*Introduction to Religions of the East (D)*	*3*
REL-140	*Religions in the United States*	*3*
REL-145	*Introduction to Christianity*	*3*

History

HIS-121	*Ancient Mediterranean World*	*3*
HIS-122	*Europe in the Age of Monarchy*	*3*
HIS-123	*Europe in the Age of Revolution*	*3*
HIS-124	*Europe in the Age of Nationalism*	*3*
HIS-135	*Modern World Military History*	*3*
HIS-151	*U.S. History to 1877*	*3*
HIS-152	*U.S. History since 1877*	*3*
HIS-221	*Holocaust and Genocide in Memory and Literature (D)*	*3*

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
ADM	Administrative Assistant
ADN	Associate Degree Nursing
AGA	Ag - Agronomy
AGB	Ag - Farm Management
AGC	Ag - Comprehensive
AGH	Ag - Horticulture
AGM	Ag - Mechanics
AGN	Ag - Natural Resources/Forestry
AGP	Ag - Precision Ag
AGS	Ag - Animal Science
AGV	Ag - Vet Tech
ANT	Anthropology
APP	Apparel Merchandising
ARC	Architectural
ART	Art
ASL	American Sign Language
ATR	Automation Tech & Robotics
AUT	Automotive Technology
BCA	Business Computer Applications
BIO	Biology
BUS	Business
CAD	Computer Aided Drafting
CHM	Chemistry
CIS	Computer Information Systems
CLS	Cultural Studies
COM	Communication
CON	Construction
CRJ	Criminal Justice
CRR	Collision Repair/Refinishing
CSC	Computer Science

DEA	Dental Assistant
DEN	Dental
DHY	Dental Hygiene
DLT	Dental Lab Technology
DRA	Film and Theatre
DRF	Drafting
DSL	Diesel
ECE	Early Childhood Education
ECN	Economics
EDU	Education
EGR	Engineering
EGT	Engineering Technology
ELE	Electrical Technology
ELT	Electronics
EMS	Emergency Medical Services
END	Electroneurodiagnostic
ENG	English Composition
ENV	Environmental Science
ESI	Intensive English Second Lang.
EXS	Exercise Science
FIN	Finance
FIR	Fire Science
FLC	Foreign Language-Chinese
FLF	Foreign Language-French
FLS	Foreign Language-Spanish
GLS	Global Studies
GRA	Graphic Communications
HCM	Hospitality, Culinary, Management
HCR	Heating & Air Conditioning
HIS	History
HSC	Health Sciences
HSV	Human Services
HUM	Humanities
IND	Industrial Technology
INT	Interior Design
LIT	Literature
MAP	Medical Assistant
MAT	Mathematics
MDT	Mobile Development Technology
MFG	Manufacturing
MGT	Management
MIL	Military
MKT	Marketing
MLT	Med Lab Tech
MMS	Mass Media Studies
MUA	Music - Applied
MUS	Music - General
NET	Computer Networking
OTA	Occupational Therapy Assistant
PEA	Physical Education Activity
PEC	Coaching Officiating
PEH	General Physical Ed. & Health
PEV	Intercollegiate Physical Ed.
PHI	Philosophy
PHR	Pharmacy Tech
PHS	Physical Science
PHY	Physics
PLU	Plumbing
PNN	Practical Nursing
POL	Political Science
PRL	Paralegal
PSY	Psychology
PTA	Physical Therapist Assistant
PWL	Powerline
RCP	Respiratory Therapist
RDG	Reading
REL	Religion
SCI	Science

SDV	Student Development
SER	Sustainable Energy Resources
SOC	Sociology
SPC	Speech
SUR	Surgical Technology
UTL	Utilities
VIN	Viticulture
WAT	Water Environmental Tech
WBL	Work-Based Learning
WEL	Welding
WTT	Wind Energy & Turbine Tech

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-152 Financial Accounting (4)
Introduces the basic concepts and procedures of accounting including the accounting cycle, merchandise 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: A

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 (Accounting majors minimum C-); Arts & Sciences Elective Code: A

ACC-191 Financial Analysis (3.00)
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: A

ACC-222 Cost Accounting (4)
Relates the principles and methods of analyzing accounting data for planning and control, product costing and decision-making. Emphasizes job order, process and standard cost accounting systems, budgeting and cost-volume-profit analysis. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-138 or MAT-140 or MAT-157, minimum grade C- in ACC-152 and 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 section of the balance sheet. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-138 or MAT-140 or MAT-157, minimum grade C- in both ACC-152 and ACC-156; Arts & Sciences Elective Code: A

ACC-232 Intermediate Accounting II (4)
Emphasizes corporate financial accounting using accounting theory with a practical procedural focus. Provides in-depth coverage of corporate accounting and reporting requirements concerning equity investments, bond issuance, leases, deferred taxes, pensions, and post-retirement benefits, as well as all facets of shareholders' equity. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-138 or MAT-140 or MAT-157, 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. Emphasizes individual and small business taxation with an introduction to partnerships. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-076, minimum grade C- in ACC-152; Arts & Sciences Elective Code: A

ACC-313 Accounting Applications (4)
Compares 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. Integrates use of a commercial accounting package. Credits: 4, Hours: (4/0/0/0), Prereq: CSC-116, minimum C- in 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 to develop models for data analysis, creation of what-if scenarios, automated computations, sorting and grouping data, and graphically viewing data. Includes planning, building, testing, documenting worksheets, functions, charts, solver, data management, multiple worksheets, data tables through integration with applications and macros. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-707, CSC-116, minimum C- in ACC-152 and ACC-156; Arts & Sciences Elective Code: B

ACC-491 Accounting Capstone (3)
Covers accounting concepts introduced in earlier coursework. Demonstrates how the various components of an accounting system work together. Emphasizes project-based evaluation and analysis of accounting reports. Credits: 3, Hours: (3/0/0/0), Prereq: minimum C- in ACC-152, ACC-156, ACC-222, ACC-231, ACC-265, and ACC-313; Coreq: ACC-232, 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: Permission 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-015 Basic Keyboarding (1)
Teaches proper keyboarding technique and how to touch type the alphabetic keyboard. The final exam covers proper keyboarding technique and the use of the keyboard. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: D

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-052; Arts & Sciences Elective Code: B

ADM-142 Desktop Publishing (3)
Teaches creation of professional-quality documents, such as one-page bulletins or short newsletters, using desktop publishing software. Integrates text, graphic and image files previously created with a variety of application software. Credits: 3, Hours: (2/2/0/0), 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: ADM-157 or ENG-105; Arts & Sciences Elective Code: B

ADM-157 Business English (3)
Provides improvement for English language skills. Studies the principles of English grammar, punctuation and style. Emphasizes correct grammar usage, spelling, vocabulary and proofreading/editing skills for the office professional. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

ADM-163 Office Concepts and Procedures (3)
Provides an understanding of the concepts, terminology, skills and procedures needed for employment in an office. Covers topics including telephone and teleconference procedures and techniques, travel arrangements, scheduling meetings, mail and shipping services, ethics and professionalism, office supplies and other basic office information. Credits: 3, Hours: (3/0/0/0), Coreq: BCA-136; 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: B

ADM-187 Administrative Management Capstone (1)
Focuses on assembling artifacts highlighting individual learning while attending college. Creates electronic and paper portfolios showcasing competency levels for each program outcome. Builds employment conversation skills. Incorporates learned skills and e-portfolio into the final exam presentation. Credits: 1, Hours: (1/0/0/0), Prereq: ADM-164; Arts & Sciences Elective Code: B

ADM-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

ADN: Associate Degree Nursing

ADN-171 Concepts of Nursing I (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, interdisciplinary collaboration and professionalism throughout the course. Credits: 5, Hours: (4.6/.8/0/0), Prereq: PNN-229, PNN-282, PNN-446, PNN-723; Arts & Sciences Elective Code: B

ADN-176 Advanced Concepts in Mental Health Across the Continuum (4)
Builds on the concepts of previous nursing courses, with an emphasis on the care of high risk mental health patients. Focuses on the provision of ethical/legal, safe, quality, evidence-based patient centered care of the patient with alterations in mental health. Emphasizes health promotion, prevention and condition management of common alterations seen in mental health patients. Provides students the opportunity to apply concepts and demonstrate skills and care for patients in a supervised laboratory, simulation, and/or clinical setting. Emphasizes patient safety, application of the nursing process, and development of physical and communication skills. Credits: 4, Hours: (3/0/3/0), Prereq: PNN-229, PNN-282, PNN-446, PNN-723, SPC-101, minimum C in BIO-186 and SOC-110; 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 associated 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: (3.75/.5/0/0), Prereq:

ADN-171, ADN-740; Coreq: ADN-760; Arts & Sciences Elective Code: B

ADN-183 Advanced Concepts in Obstetric and Pediatric Nursing (4)

Builds on the concepts of previous nursing courses, with an emphasis on the care of high risk obstetric and pediatric patients. Focuses on the provision of ethical/legal, safe, quality, evidence-based patient and family-centered care of the patient with alterations in women and children's health. Emphasizes health promotion, prevention and condition management of common alterations seen in high risk pediatric and obstetric patients. Provides students with the opportunity to apply concepts and demonstrate skills in a supervised laboratory, simulation, and/or clinical setting. Emphasizes patient safety and application of the nursing process. Credits: 4, Hours: (3/1/0/0), Prereq: ADN-171, ADN-176, ADN-740; 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, interdisciplinary collaboration, professionalism, cultural sensitivity, use of informatics and evidence based practice to promote clinical reasoning and safe practice. The student is required to successfully complete the lab portion of this course before progressing to clinical. Credits: 3, Hours: (0/0/9/0), Prereq: PNN-229, PNN-723; Arts & Sciences Elective Code: B

ADN-760 Advanced Concepts of Nursing Clinical (4)

Focuses on the advanced nursing care of patients, 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: 4, Hours: (0/0/12/0), Prereq: ADN-171, ADN-740; Arts & Sciences Elective Code: B

ADN-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. Requires approval of supervising professor and dean. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

AGA: AG-Agronomy

AGA-114 Principles of Agronomy (3)

Provides a foundation course in agronomy. Applies crop, soil, and environmental sciences in understanding agricultural systems in the world. Introduces concepts of plant, soil, tillage, pest, environmental, and sustainable aspects of crop production. Includes hands-on learning experiences. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGA-154 Fundamentals of Soil Science (3)

Introduces physical, chemical, and other biological properties of soils, their formation, classification, and distribution. Uses soil survey and other information sources in balancing agronomic, economic, and environmental concerns in soil management. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

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: B

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-216 Row Crop and Forage Production (4)

Studies and compares different types of tillage methods, seed varieties, fertilizer program, diseases and chemical application, as well as weed control and new harvest methods used in modern row crop and forage production. Credits: 4, Hours: (3/2/0/0), 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: (2/2/0/0), Arts & Sciences Elective Code: B

AGA-219 Field Crop Harvesting Lab (2)

Focuses on how to harvest and store grain, and forage crops in agricultural systems. Includes the basics of combine safety, set up, adjustment, operation, and calibration of mechanical and data logging systems. Students operate the combine simulator to learn these basic principles. Credits: 2, Hours: (0/4/0/0), Coreq: AGA-217; 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-948 Special Projects (1-3)

Includes an agreed-to 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 agribusiness. 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-252 Ag Industry Business Management (3)

Focuses on the agricultural industry and providing inputs to farm producers and processing farm commodities. Covers how agribusinesses, such as cooperatives, and the agribusiness industry are structured. Issues unique to managers in the agribusiness sector are emphasized. Looks at budgeting, financing, facilities management, logistics, teamwork and how to be successful as a manager. Credits: 3, Hours: (3/0/0/0), Prereq: AGB-466 and either AGB-470, ACC-152 or ACC-156; Arts & Sciences Elective Code: B

AGB-235 Introduction to Agriculture Markets (3)

Presents basic concepts and economics principles related to markets for agricultural inputs and products. Reviews current marketing problems faced by farms and agribusinesses, farm and retail price behavior, structure of markets, food marketing channels, food quality and food safety, and the role of agriculture in the general economy. Analyzes the implications of consumer preferences at the farm level. Introduces hedging, futures, and other risk management tools. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGB-323 Agricultural Procedures and Safety (1)

Focuses on the development, implementation and assessment of appropriate actions in a variety of agricultural settings. Covers the theory and application of modern agricultural safety movement in the United States. Emphasizes the reduction of unnecessary risks in agriculture. Credits:

1, Hours: (0/2/0/0), Arts & Sciences Elective Code: B

AGB-330 Farm Business Management (3)
Applies business and economic principles of decision making and problem solving in the management of a farm business. Covers cash flow, partial, enterprise, and whole farm budgeting. Reviews information systems for farm accounting, analysis, and control. Examines obtaining and managing land, capital, and labor resources. Provides alternatives for farm business organization and risk management. Credits: 3, Hours: (2/2/0/0), Prereq: AGB-470 or ACC-152; Arts & Sciences Elective Code: B

AGB-331 Entrepreneurship in Agriculture (3.00)
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)
Teaches principles of selling with application to agricultural and food related businesses. Reviews attitudes, value systems, and behavioral patterns that relate to agricultural sales. Examines marketing, selling strategies, preparing for sales calls, making sales presentations, handling objections, and closing sales. Analyzes the buying or purchasing process. Evaluates the agri-selling profession. Credits: 3, Hours: (2/2/0/0), Prereq: none; Coreq: none; Arts & Sciences Elective Code: B; Comments:

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), Prereq: AGC-130, MAT-102, MAT-120, MAT-157, or MAT-607; Arts & Sciences Elective Code: B

AGB-470 Farm Records, Accounts, Analysis (3)
Provides knowledge of methods for keeping farm records and accounts for farm management, credit and tax purposes. Students complete a record keeping project and prepare a balance sheet, income statement, statement of cash flows, and cash flow budget. Uses cash accounting procedures along with a farm accounting computer program. Credits: 3, Hours: (2/2/0/0), Prereq: AGC-103 or CSC-116; Arts & Sciences Elective Code: B

AGC: AG-Comprehensive

AGC-103 Ag Computers (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-116 Professionalism in Agriculture (1)
Develops academic and professional skillsets in preparation for a career in agriculture. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

AGC-123 Applied Agricultural Concepts (1)
Provides students with the background and fundamental skills to be employed in the Ag industry. Credits: 1, Hours: (1/0/0/0), 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-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

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)
Introduces the students to the field of turfgrass science. Applies principles and practices involved in successful maintenance of turfgrass areas. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

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 segmental paving systems, segmental retaining walls, basic wood construction for landscape use, landscape lighting and water feature construction. Covers 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: (2/0/0/0), 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-162 Landscape Construction Lecture (2)
Introduces students to the construction of segmental paving systems, segmental retaining walls, basic wood construction for landscape use, landscape lighting and water feature construction. Covers bid procedures and the calculations necessary to order materials per specifications. Offers a hybrid format. Provides face-to-face lectures, online lectures and face-to-face labs. Requires access to Kirkwood's online course content via the E-Learning platform on a regular basis. Credits: 2, Hours: (2/0/0/0), Coreq: AGH-164; Arts & Sciences Elective Code: B

AGH-164 Landscape Construction Lab (1)
Integrates the lab component with the Landscape Construction lectures. Demonstrates construction of interlocking concrete paving systems, segmental retaining walls, wood construction for landscape use, landscape lighting and water feature construction. Credits: 1, Hours: (0/2/0/0), Coreq: AGH-162; Arts & Sciences Elective Code: B

AGH-166 Turfgrass and Landscape Irrigation (3)
Assists students in developing career skills for many areas of irrigation and water management. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGH-167 Introduction to Landscape Computer Design (4)
Introduces software used in landscape, nursery, and garden centers with an emphasis on design, marketing, inventory control, customer relations, sales, and presentation. Builds landscape design skills. Teaches computer design software to improve design efficiency and graphic communication. Credits: 4, Hours: (2/4/0/0), Arts & Sciences Elective Code: B

AGH-168 Hardscape Design (2)
Introduces how to create a hardscape area involving sizing, material selection, pricing, and design and site layout. Uses landscape design software to create and construct a design. Requires completion of Hardscape Installation Techniques. Credits: 2, Hours: (1/2/0/0), Coreq: AGH-304; 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: (2/0/0/0), Prereq: AGH-102; Arts & Sciences Elective Code: B

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 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)
Provides an introduction to horticulture covering the basic knowledge and skills associated with growth and development of plants including fruits, vegetables, turfgrass, and ornamentals. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGH-233 Plant Propagation I (3)
Introduces students to techniques used in reproducing plants through sexual and asexual methods. Seedlings, vegetative cuttings, grafts and buddings are practiced in the laboratory. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B; Comments: Second-year student

AGH-236 Plant Material Maintenance (3)
Studies pruning, fertilizing, staking and other maintenance practices utilized in tree and shrub care. Emphasizes 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 forming factors, 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 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 land-scape 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. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGH-264 Hydroponic Production (3)
Examines the urban horticulture practices of hydroponics and aquaponics in a controlled environment. Focuses on the establishment of correct growing environments, plant selection and nutrition, growing techniques, common pests and diseases, harvesting, and marketing crops. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGH-275 Commercial Plant Production (3.00)
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-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-283 Pesticide Application Certification (2)
Reviews materials and testing procedures used to certify pesticide applicators. Concentrates on core testing. Teaches mixing, loading, and common application techniques used in the industry. Credits: 2, Hours: (2/0/0/0), 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; Comments: Second-year student.

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-303 Sustainable Site Management (3)
Covers the latest topics in environmentally-sound landscape practices. Introduces green building, on-site water management strategies and habitat preservation. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGH-304 Hardscape Installation (4)
Elevates students beyond basic hardscape installation. Studies contemporary design and installation trends. Provides hands-on experience with the latest construction materials. Also provides activities and demonstration with the use of laser instruments for project site measurements and project layout. Includes opportunities for professional certifications in product installation. Credits: 4, Hours: (2/4/0/0), 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-445 Turfgrass Management and Administration (3)
Examines the management and administration practices of the turfgrass industry. Includes budgeting, turfgrass facilities organization, crew motivation and management, business plan proposals, project management, managing meetings, dealing with conflict, and managing an increasingly diverse work force. Credits: 3, Hours: (3/0/0/0), Prereq: AGH-112; Arts & Sciences Elective Code: B

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-465 Turf and Landscape Capstone (3)
Focuses on three components in the turf and landscape industry - career, management, and operations. Examines career path opportunities. Reviews the business and economic principles applied to decision-making and problem-solving in managing a business. Identifies the unique business activities including golf course, sports turf, landscape, greenhouse, and lawn care businesses. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGH-490 Turfgrass Capstone (3)
Provides second-year turfgrass students the opportunity to investigate a topic of special interest toward their education. Election of topic must be approved by the faculty. Requires use of information from prior classes as they progress through their project. Credits: 3, Hours: (3/0/0/0), Prereq: AGH-112; 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, Hours: (1-3/0/0/0), Arts & Sciences Elective Code: B

AGM: AG-Mechanics

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-334 Advanced Ag Electronics (2)
Introduces diagnosis, operation and repair of electrical systems in precision farming equipment. Covers machinery construction and diagnostic wiring harnesses. Includes identifying guidance and application control components on machinery. Utilizes multimeters and fault codes to diagnose electrical system malfunctions. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

AGM-403 Combine Operation & Adjustment (2)
Introduces combine operation and safety. Includes hands-on, in-the-field machine operation and adjustment. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

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)
Includes 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)
Teaches diesel and gas-powered engine diagnosis and overhaul from a hands-on perspective. Integrates actual farm equipment repair with minimal instructor supervision. Emphasizes extensive engine testing, troubleshooting, repairing, inspecting and assembling. Credits: 13, Hours: (3/20/0/0), Prereq: AGM-124, AGM-334, 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-140 Native Plants (3)
Identifies plant materials existing in natural woodlands, roadsides and prairies. Special emphasis is placed on prairie forbs. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B; Comments: Second-year student

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-223 Aquatic Wildlife (3)
Studies the identification of fish, amphibians and reptiles native to Iowa. Emphasis is placed on habitat requirements and management concerns. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B; Comments: Second-year student

AGN-226 Mammalian Wildlife (3)
Provides training in identification and management of upper Midwest mammals. Environmental requirements and relationships are stressed. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B; Comments: Second-year student

AGN-235 Park and Recreation Administration (3)
Examines the organization and administration of park systems and recreational programs. Current issues in park management are covered. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B; Comments: Must be a second-year student

AGN-240 Natural Resources Interpretation (3)
This course develops skills in all facets of interpretation. Nature walks, public presentations, displays, news releases and photography are incorporated into interpretive exercises. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B; Comments: Second-year student

AGN-244 Wildlife Management (3)
Students learn proper wildlife management through carefully planned and maintained reserves, preserves and refuges. Management techniques presented include those for game, non-game and aquatic animals. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B; Comments: Second-year student

AGN-248 Natural Resources Appreciation (3)
Surveys the nonliving natural resources of Iowa. 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-280 Introduction to Forestry (3)
Examines the application of silvicultural practices to the management of rural and urban forest resources in Iowa. Includes basic tree structure and function, forest communities in Iowa, the identification of forest pests, forest mensuration, and the development of a management plan. 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

AGP: AG-Precision Ag

AGP-143 Fundamentals of Electricity for GPS (1)
Introduces basic electricity fundamentals, such as voltage, amperage and resistance, with an emphasis on Ohm's Law and its practical application. Covers operation and understanding of a digital volt/ohm meter, and series and parallel circuits. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: B

AGP-333 Precision Farming Systems (3)
Provides an overview of precision farming concepts and the tools of precision farming (GPS, GIS and VRT). Introduces the use of each of these tools within the processes of a precision farming system. Provides hands-on activities in the use of these tools. Discusses economic and environ-

mental benefits. Credits: 3, Hours: (1/4/0/0), 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: (2/2/0/0), 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 multitemporal analysis are also discussed. Credits: 3, Hours: (2/2/0/0), Prereq: AGP-405; Arts & Sciences Elective Code: B

AGP-435 Advanced Precision Farming: Software 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-437 Precision Ag Hardware (Machinery Servicing & Retrofitting) (1)
Prepares the student to use various precision farming hardware components. Requires students to read and understand technical manuals for the updating and retrofitting of agricultural machinery with new technology and monitoring systems. Focuses on preparing a planter assembly for field operation in the spring by installing necessary technology upgrades, and control and guidance systems. Credits: 1, Hours: (0/2/0/0), Prereq: AGP-333; Arts & Sciences Elective Code: B

AGP-438 Precision Ag Hardware Machinery Servicing (2)
Emphasizes various precision farming hardware components. Incorporates technical manuals for the updating and retrofitting of agricultural machinery with new technology and monitoring systems. Offers hands-on planter assembly and updating for planting season field operation, and tractor preparation upgrades for the control and guidance systems. Credits: 2, Hours: (1/2/0/0), 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)
Introduces students to the various species and breeds of domestic animals and to create an understanding of the principles of food animal production, product marketing, and issues confronting the animal industry. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

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: B

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 laboratory livestock and may include off-campus assignments. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AGS-319 Animal Nutrition (3)
Examines the nutritional principles, digestive systems, composition, and nutritional characteristics of common feedstuffs, ration formulation, and recommended animal feeding programs. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

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-356 Livestock Behavior and Welfare (3)
Studies applications of basic animal behavior principles to ensure optimum performance and well being. Examines the effects of environment, stress, disease, and nutrition on animal physiology and performance. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGS-357 Livestock Behavior and Welfare Lab (2)
Meets concurrently with Livestock Behavior and Welfare. Examines the effects of environment, stress, disease, and nutrition on animal physiology and performance. Credits: 2, Hours: (0/6/0/0), Coreq: AGS-356; 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: B

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: B

AGS-500 Beef Industry and Feedlot Management (3)
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: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGS-501 Stockmanship, Bunk Management and Cattle Processing Lab (2)
Meets concurrently with Beef Industry Feedlot Management. Works with Kirkwood cattle and custom-fed cattle to practice low stress cattle handling, effective bunk management, and proper receiving and processing. Credits: 2, Hours: (0/4/0/0), Coreq: AGS-500; Arts & Sciences Elective Code: B

AGS-502 Beef/Cow Calf Production (2)
Participates in calving of the Kirkwood Community College herd. Deals with proper nutrition, health, solving obstetrics problems, and preparation of cow's return to estrus. Also includes records, identification, and pasture management. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

AGS-503 Cow Calf Lab (1)
Meets concurrently with Beef Cow/Calf Production. Observes and assists with calving the Kirkwood Community College cow herd. Practices baby calf health and management along with preparation of the cow herd for rebreeding. Plans and implements early lactation nutrition for the cow herd. Credits: 1, Hours: (0/2/0/0), Coreq: AGS-502; Arts & Sciences Elective Code: B

AGS-512 Beef Breeding/Reproduction/Nutrition (3)
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. Deals with health, heritability, and nutritional problems. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGS-513 Reproduction and Nutrition Lab (2)
Meets concurrently with Beef Breeding/Reproduction/Nutrition. Develops reproductive strategies and management plans along with practicing principles to enhance reproductive efficiency. Develops and implements nutritional programs for beef cattle herds. Credits: 2, Hours: (0/4/0/0), Coreq: AGS-512; Arts & Sciences Elective Code: B

AGS-516 Beef Science Management (2)
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 multiple trait selection. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

AGS-517 Livestock Merchandising Lab (1)
Meets concurrently with Beef Science Management. Collects and analyzes beef cattle data for management and marketing use. Prepares cattle for sales and exhibition. Includes genomic, identification, phenotypic evaluation, and preparation for photography and videos. Credits: 1, Hours: (0/2/0/0), Coreq: AGS-516; Arts & Sciences Elective Code: B

AGS-531 Swine Reproduction and Management (3)
Recognizes swine reproductive characteristics and reproductive functions of swine breeding stock, and identifies type and confirmation necessary for economic production. Deals with breeds, breeding programs, breeding systems, including A.I., and appropriate management techniques. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGS-532 Swine Reproduction and Management Lab (2)
Meets concurrently with Swine Reproduction and Management. Teaches breeding systems, including heat detection, AI methods, and current industry breeding practices. Explains equation for proper collection and extension, as well as methods for processing and packaging. Credits: 2, Hours: (0/4/0/0), Coreq: AGS-531; Arts & Sciences Elective Code: B

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

AGV: AG-Vet-Tech

AGV-101 Veterinary Assisting (3)
Teaches basic clinical skills expected of a veterinary assistant. Includes 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), Prereq: AGV-105, AGV-153, AGV-158; 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-116 Introduction to the Veterinary Technology Program (1)
Provides students with an overview of the Veterinary Technician Program including program policies, the profession's legal and ethical considerations, and requirements for taking state and national credentialing examinations. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

AGV-117 Professionalism for Veterinary Technicians (1)
Focuses on professionalism and soft skills for veterinary technicians. Develops written and oral business communications. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

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 physiological 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 Mathematics for Veterinary Technicians (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 (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, anesthesiology, 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, anesthesiology, 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 Technician 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 acquired in Veterinary Clinical Pathology II. Additional units include urinalysis, electrocardiography, 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-190 Animal Welfare and Shelter Management (4)
Develops the skills necessary for day-to day management of an animal housing facility. Examines development of infectious disease control policies, and cleaning and disinfection protocols. Focuses on the daily operation of an animal

housing facility to include population management, cleaning and disinfection, disease and infection control within a facility, animal housing, exercise and space needs, enrichment, temperament 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 handling, 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 understanding 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 animal 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 identification and characteristics, behavior traits, humane handling techniques and appropriate housing for cattle, horses, sheep, swine and camelids. 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. Presents restraint techniques, administration of selected euthanasia agents, as well as proper handling, record keeping and storage of euthanasia agents. Develops techniques for recognizing 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: (.5/1/0/0), Arts & Sciences Elective Code: B; Comments: Enrollment limited to Humane 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 wildlife, 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 justice 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 investigations. Credits: 3, Hours: (3/0/0/0), Arts & Sciences 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: minimum C in 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, scissoring and finishing the groom. Credits: 3, Hours: (1/4/0/0), Prereq: minimum C in 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: minimum C in AGV-203; Arts & Sciences Elective Code: B

AGV-206 Canine Behavior & Handling (3)
Introduces the observation and understanding of canine behavior and safe handling techniques for the pet groomer. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGV-210 Introduction to Shelter Medicine (3)
Introduces diseases, treatment and disease prevention for animals housed in shelter situations. Includes discussion of common surgical procedures. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

AGV-214 Small Animal Medicine I (3)
Discusses diseases affecting small animals with emphasis on etiology, clinical symptoms, treatment and prevention. Credits: 3, Hours: (3/0/0/0), Prereq: AGV-127; Arts & Sciences Elective Code: B

AGV-215 Small Animal Medicine II (3)
Continues Small Animal Medicine I. Discusses diseases affecting small animals with emphasis on etiology, clinical symptoms, treatment and prevention. Emphasizes metabolic diseases, diseases of the cardiovascular, digestive, and urogenital system. Credits: 3, Hours: (3/0/0/0), Prereq: AGV-127, AGV-214; Arts & Sciences Elective Code: B

AGV-216 Avian, Exotics, and Small Mammals (2)
Introduces laboratory animals used in research and avian, reptiles, and small mammals. Teaches practical care with selected animals. Credits: 2, Hours: (2/0/0/0), Prereq: AGV-162, AGV-168; Arts & Sciences Elective Code: B

AGV-217 Diagnostic Technologies (2)
Introduces technology commonly used in veterinary practices to diagnose and treat animals. Emphasizes imaging technologies and proper positioning for quality results. Covers therapeutic and other technologies. Credits: 2, Hours: (1/1/0/0), Prereq: AGV-162, AGV-214, AGV-215; Arts & Sciences Elective Code: B

AGV-221 Professionalism for Pet Groomers (1)
Focuses on professionalism and soft skills necessary for pet groomers. Reviews successful communication techniques required by a retail grooming business. Credits: 1, Hours: (1/0/0/0), 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 hospitalized patients, admitting and discharging patients, 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. Credits: 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 comparative, 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-

its: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

ANT-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

APP: Apparel Merchandising

APP-120 Apparel Visual Merchandising (3)
Analyzes types of visual display construction, the relationship of display to the total promotional program, elements and principles of display design, construction materials, and merchandise selection. Performs field analyses and comparisons of visual displays and methods used by local retailers. Produces visual merchandising documents for the retail environment. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

APP-130 Principles of Fashion Merchandising (3)
Examines the apparel and textiles industry. Explores careers, terminology, fashion product life cycles, and industry practices. Provides instruction on how to develop portfolio artifacts for a student's chosen career. Participates in discussions with industry speakers. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

APP-140 Fashion History (3)
Examines historic dress from ancient times to present day and its relationship to contemporary fashion trends. Covers influencing factors connected to the context of dress. Explores diverse sources for historic dress to build research skills applicable for future careers. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

APP-160 Sewn Product Analysis (3)
Evaluates a variety of apparel and textile products. Investigates the product development processes, sourcing, and manufacturing practices. Teaches the principles and methods of garment assembly by focusing on materials and specifications relative to quality, performance, cost, and price. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

APP-170 Fashion Trends and Consumer Analysis (3)
Examines diverse markets and analyzes multiple factors related to dress in various societies. Investigates the influences and motivations of consumers' dress practices that impact the apparel and textiles industry. Explores research methods used to investigate consumer preferences and lifestyles. Researches current fashion trends to predict future directions in the industry. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

APP-210 Apparel Textiles (3)
Investigates diverse categories of fibers and analyzes the basic fiber processes and properties, yarn processing, fabric construction methods, and various fabric finishes. Examines textile qualities relating to factors of fiber properties and serviceability. Examines textile properties, characteristics, and various end uses of textiles. Experiments with identification methods. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

APP-215 Sustainability in the Apparel and Textiles Industry (3)
Addresses the key concepts of sustainability impacting the apparel and textiles industry. Investigates current issues within the industry and analyzes their potential impact on the future. Examines problem-solving and project-based solutions for addressing issues within the industry. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

APP-220 Fashion Show Procedures (3)
Plans and executes the diverse components of a fashion show. Recruits and selects models and student designers. Partners with local retailers and designers to select and coordinate merchandise as well as other local resources. Creates a budget, raises funds, and markets the show. Culminates in a fashion show hosted and produced by the students for the local community. Credits: 3, Hours: (1/4/0/0), Prereq: APP-120, APP-130, APP-160, APP-210, APP-240; Arts & Sciences Elective Code: B

APP-240 Fashion Design (3)
Provides instruction on how to illustrate figures and products for diverse target markets utilizing a variety of artistic mediums. Develops fashion plates and focused apparel collections. Creates a digital portfolio in alignment with industry practices. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

APP-270 Fashion Buying (3)
Examines the buying process utilized in the apparel and textiles supply chain. Completes projects to practice applications of merchandise planning and control. Introduces retail technology and computer applications for buying practices. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

APP-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: B; Comments: Requires approval of supervising professor and dean

APP-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

ARC: Architectural

ARC-185 Architectural Photoshop Techniques (1)
Uses the capabilities of Photoshop to create architectural renderings. Focuses on understanding processes and developing techniques to enhance presentations. Credits: 1, Hours: (1/0/0/0), Prereq: minimum C in ARC-195 or INT-126; Arts & Sciences Elective Code: B

ARC-204 Design Studio - Residential (5)
Simulates an architectural (residential) design firm through real-life projects, employer/employee expectations, client additions/revisions and deadlines. Focuses on 3D CAD (Computer Aided Drafting) skills using Autodesk Revit software. Develops skills with file management, organization of architectural information, attention to detail, concept drawings, converting preliminary concept drawings into presentation drawings, construction documents and renderings. Emphasizes both teamwork, peer evaluation and general problem solving. Credits: 5, Hours: (1/8/0/0), Prereq: CAD-201; Arts & Sciences Elective Code: B

ARC-205 Design Studio-Residential (6)
Simulates an architectural (residential) design firm through real-life projects, employer/employee expectations, client additions/revisions and deadlines. Focuses on 3D CAD (Computer Aided Drafting) skills using Autodesk Revit software. Develops skills with file management, organization of architectural information, attention to detail, concept drawings, converting preliminary concept drawings into presentation drawings, construction documents and renderings. Emphasizes both teamwork, peer evaluation and general problem solving. Credits: 6, Hours: (2/8/0/0), Prereq: CAD-201; Arts & Sciences Elective Code: B

ARC-206 Design Studio - Commercial (5)
Utilizes CAD to develop a set of working drawings for a commercial project located on the college campus. Focuses on correct computer usage, code research, blueprint redline and revision, and appropriate graphic representation. Emphasizes teamwork. Credits: 5, Hours: (1/8/0/0), Prereq: CAD-201; Arts & Sciences Elective Code: B

ARC-207 Design Studio-Commercial (6)
Simulates the workflow of a design professional that must create, present, and ultimately document an original solution to a construction-related scenario. Researches and analyzes a hypothetical client and a real-world site to find meaningful design possibilities. Creates presentation-type drawings and renderings to convince that client to proceed with those possibilities. Documents a design solution for construction. Credits: 6, Hours: (2/8/0/0), Prereq: CAD-201; Arts & Sciences Elective Code: B

ARC-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

ARC-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

ARC-932 Internship (2)
Provides practical experience in an architectural or construction work environment. Includes employer/supervisor evaluations and instructor visits/interview. Credits: 2, Hours: (0/0/0/128), Prereq: CAD-201, CAD-204; Arts & Sciences Elective Code: B

ART: Art

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: (3/0/0/0), 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. Once passed, this course may be repeated one time. Credits: 3, Hours: (2/2/0/0), 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. Once passed, this course may be repeated one time. Credits: 3, Hours: (2/2/0/0), Prereq: 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: (2/2/0/0), Prereq: ART-133; Arts & Sciences Elective Code: A

ART-143 Painting (3)
Provides the beginning student experience in handling a variety of painting material to foster growth in visual, scientific, conceptual and aesthetic responses. Explores painting from the Renaissance to the current era through examination of paintings and scholarly periodicals. Focuses on student proficiency through observational painting from the model, the still life, and interior and/or exterior spaces, perspective, light structure/chiaroscuro, positive negative spatial relationships, color theory and relationships, handling of materials, and abstraction. Develops artistic vocabulary and critical and conceptual thinking habits through participation in mandatory group critiques. Deepens student introspection through creation of a cohesive portfolio, body of work or artifact for final presentation. Once passed, this course may be repeated one time. 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. Once passed, this course may be repeated one time. 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. Once passed, this course may be repeated one time. 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. Once passed, this course may be repeated one time. 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 creation 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. Once passed, this course may be repeated one time. Credits: 3, Hours: (2/2/0/0), Prereq: ART-301; Arts & Sciences Elective Code: A

ART-163 Sculpture (3)
Introduces techniques and concepts of sculpture using materials such as plaster, clay, wire, glass, and other applied materials. Historical references of objects, artists, and movements will be discussed alongside modern sculpture references. Once passed, this course may be repeated one time. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

ART-164 Sculpture II (3)
Continues the instruction and exploration of techniques and concepts as well as historical and contemporary lessons taught in Sculpture ART-163. Similar materials will be used in-class. A higher expectation is held for students to develop their technical skills, material knowledge, and conceptual ideas. 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. Once passed, this course may be repeated one time. Credits: 3, Hours: (2/2/0/0), Prereq: ART-164; Arts & Sciences Elective Code: A

ART-173 Ceramics (3)
Introduces ceramic making techniques through hand building and the potter's wheel. Traditional and modern processes will be instructed. Historical references of ceramic objects, artists, and movements will be discussed alongside modern ceramic references. Once passed, this course may be repeated one time. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

ART-174 Ceramics II (3)
Continues the instruction of hand-built and wheel-thrown techniques demonstrated in Ceramics ART-173. Similar materials and processes will be available to complete assignments. A higher expectation is held for students to advance their technical skills, material knowledge, and conceptual ideas. Credits: 3, Hours: (2/2/0/0), Prereq: ART-173; Arts & Sciences Elective Code: A

ART-175 Ceramics III (3)
Further develops an individual's skill, material knowledge, and personal interest of ceramic art. Assignments, lectures, and demonstrations will be organized similarly to prior sections. Ceramic studio operations such as mixing glazes and loading kilns will be introduced. Independent work time in the studio is expected to be a more rigorous commitment than in previous sections. 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. Once passed, this course may be repeated one time. 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. Once passed, this course may be repeated one time. 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 presenta-

tions, lecture and discussion. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

ART-220 Ceramics IV (3)
Instruction and guidance is provided for students to refine their developed skills, broaden their knowledge of ceramic art, and further their experience in ceramic studio operations. Assignments are organized for students to produce self-directed work within guidelines set by Instructor. Expectations of a student's independent work ethic is of a high caliber. Credits: 3, Hours: (2/2/0/0), Prereq: ART-175; Arts & Sciences Elective Code: A

ART-223 Advanced Photography (3)
Improves proficiency with digital SLR cameras, computer applications and printing. Introduces commercial studio lighting techniques for product and portraiture. Builds on techniques and aesthetic values in visual communication using a combination of digital, traditional and alternative photographic practices. Once passed, this course may be repeated one time. Credits: 3, Hours: (2/2/0/0), Prereq: ART-184 or ART-186; Arts & Sciences Elective Code: A

ART-224 Commercial Studio Lighting Table Top and Portrait (3)
Studies the use of commercial studio lighting techniques and skills in photography as a way to communicate or make art. Includes table top or product lighting, portrait lighting and special events photography. Credits: 3, Hours: (2/2/0/0), Prereq: ART-184 or 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. Once passed, this course may be repeated one time. 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. Once passed, this course may be repeated one time. 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. Once passed, this course may be repeated one time. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

ART-430 Glass-Fusing, Slumping and Casting (3)
Introduces glass fusing, slumping, pate de verre, stencil, inclusions, torch working, pattern bars, casting and cold-working techniques and concepts. Involves group and individual demonstrations, discussions and critiques. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

ART-431 Glas-Fusing, Slumping, and Casting II Casting (3)
Explores advanced contemporary and traditional warm glass working techniques and concepts, through lectures, demonstrations, discussions, practice and critiques. Includes flat fusing, slumping, torch working and solid cast forms. Once passed, this course may be repeated one time. 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 hollow forms, solid forms, functional and non-functional objects using hot glass. Once passed, this course may be repeated one time. 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 manipulation, annealer pick ups, advanced sculpting, and making cane using hot glass. Once passed, this course may be repeated one time. Credits: 3, Hours: (2/2/0/0), Prereq: ART-440; Arts & Sciences Elective Code: A

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; Comments: Requires approval of supervising professor and dean

ART-928 Independent Study (1-3)
Allows the student to do readings, papers, research 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

ART-945 Digital Arts Capstone (3)
Focuses on advanced concepts that examine the business of digital arts - including web design, motion media, commercial photography, graphic design and marketing ethics, and project management. Includes internship/job shadow requirements. Provides the option of a semester abroad for a student to take transferable courses with a portfolio and job shadow/internship possibility in partner institutions of IUT Lumieriere in Lyon, France or the University of Abertay in Scotland, UK. The choice of institution is dependent on the student's focus in the media arts. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

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: 4, Hours: (4/0/0/0), Prereq: ASL-141; Arts & Sciences Elective Code: A

ASL-245 American Sign Language III (4)
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. Credits: 4, Hours: (4/0/0/0), Prereq: ASL-171; Arts & Sciences Elective Code: A

ASL-281 American Sign Language IV (4)
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. Credits: 4, Hours: (4/0/0/0), Prereq: ASL-245; Arts & Sciences Elective Code: A

ASL-928 Independent Study (1-3)
Allows the student to do readings, papers, research /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), Arts & Sciences Elective Code: B

ATR-105 Industrial Robotics (3)
Covers the tasks and procedures that an operator, technician, engineer or programmer needs to set up and program a Fanuc Robotics ArcTool software package. Credits: 3, Hours: (1/4/0/0), Prereq: WEL-244; Arts & Sciences Elective Code: B

ATR-126 Advanced Maintenance Technologies (2)
Teaches fundamentals of shaft alignment, predictive, and preventative maintenance at the intermediate level. Integrates hands-on shaft alignment with dial indicators and laser align-

ment. Includes training in technologies used for predictive maintenance in the workplace, e.g., thermal imaging, vibration analysis, and trend analysis. Utilizes labs to reinforce concepts and theory covered in lecture and online material. Credits: 2, Hours: (1/2/0/0), Prereq: ATR-300; Arts & Sciences Elective Code: B

ATR-134 Robot Machine Integration (3)
Focuses on integrating a robot system with many different industry applications, including welding and CNC environments. Introduces integration of PLCs with a robot system. Credits: 3, Hours: (1/4/0/0), Prereq: ATR-105; Coreq: ATR-136; Arts & Sciences Elective Code: B

ATR-135 Advanced Manufacturing and Robotics Technologies Capstone (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-136, ATR-134, MFG-394; Arts & Sciences Elective Code: B

ATR-136 Programmable Logic Controllers for Manufacturing (4)
Covers installing, programing and troubleshooting PLC systems as they are used in the manufacturing industry. Credits: 4, Hours: (2/4/0/0), Prereq: ELE-364; Arts & Sciences Elective Code: B

ATR-201 Automation and Instrumentation Capstone (4)
Explores manufacturing- and process-automation control systems while applying abilities, techniques and knowledge learned throughout program. Develops a control system from conception to completion. Credits: 4, Hours: (2/4/0/0), Prereq: ATR-325, ATR-327; Arts & Sciences Elective Code: B

ATR-254 PLC Integration (4)
Provides an introduction to intermediate PLC software and the concepts associated with system integration. Credits: 4, Hours: (2/4/0/0), Prereq: ATR-136; Arts & Sciences Elective Code: B

ATR-303 Mechanical Power Transmission (4)
Examines power transmission installation for a variety of mechanical systems. Includes torque and tensioning, couplings, chain drives, pulley drives, bearings, gear drives, motor leveling, and alignment of systems. Credits: 4, Hours: (1/6/0/0), Arts & Sciences Elective Code: B

ATR-309 Controls Capstone (3)
Integrates the concepts covered in the Industrial Control courses into project-based lab activities. Focuses on utilizing skills acquired to design solutions for specific situations. After approval, students assemble, test and evaluate their designs. Credits: 3, Hours: (1/4/0/0), Prereq: ATR-310; Arts & Sciences Elective Code: B

ATR-310 Industrial Controls (5)
Introduces industrial control theory and applications. Covers AC and DC power sources, circuit protection devices, switching devices, pilot lights, schematic symbols, motor contactors, motor overloads, motor circuit breakers, sensors, and the use of schematics and wiring diagrams. Considers application, installation, and troubleshooting of control components. Students design, draw, wire, and troubleshoot circuits. Theory and

classroom study are reinforced with practical lab exercises. Credits: 5, Hours: (2/6/0/0), Prereq: ELE-364; Arts & Sciences Elective Code: B

ATR-316 Instrumentation & Control Devices (2)
Provides an introduction to various types of instrumentation and control devices. Concepts including commissioning, practical application, integration and troubleshooting are explored and emphasized through lecture, reading and hands-on labs. Credits: 2, Hours: (1/2/0/0), Prereq: ATR-136; Arts & Sciences Elective Code: B

ATR-319 Process Control I (4)
Provides an introduction to various types of process control schemes, integrated PID control, and loop tuning methods. Concepts including practical application, best practices, system optimization, and troubleshooting are explored and emphasized through lecture, reading and hands-on labs. Credits: 4, Hours: (2/4/0/0), Prereq: ATR-316; Arts & Sciences Elective Code: B

ATR-320 PLC Programming and Control II (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: ELT-128; Arts & Sciences Elective Code: B

ATR-323 Mechatronics I (2)
Introduces the concept of mechatronics-based systems. Explores component commissioning, cell and system level programming, and troubleshooting through lecture, reading and hands-on labs. Credits: 2, Hours: (1/2/0/0), Prereq: ATR-322; Arts & Sciences Elective Code: B

ATR-327 Process Control II (4)
Provides an introduction to distributed control systems and system level commissioning and control. Explores practical application, best practices, system optimization, and troubleshooting through lecture, reading and hands-on labs. Credits: 4, Hours: (2/4/0/0), Prereq: ATR-319; Arts & Sciences Elective Code: B

AUT: Automotive Technology

AUT-100 Maintenance and Light Repair (4)
Emphasizes student knowledge of the skills necessary to successfully perform common maintenance and light repair tasks in engine systems, automatic transmission/transaxle, manual drive train and axles, suspension and steering, brakes, electrical, and heating and air conditioning. Credits: 4, Hours: (1/6/0/0), Arts & Sciences Elective Code: B

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. Emphasizes routine maintenance procedures in the care of tires, batteries, lighting, belts, hoses, filters and cooling systems through classroom and hands-on activities. Presents career information on career pathways, employers, goal

setting, skills inventory, student club information and personal plan. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

AUT-164 Automotive Engine Repair (4)
Introduces internal combustion engine fundamentals. Covers engine operation, servicing, diagnosis and overhaul. Teaches engine disassembly, making precision measurements and engine reassembly. Emphasizes theories in practical, hands-on applications in classroom and lab exercises. Credits: 4, Hours: (1/6/0/0), Prereq: AUT-104, AUT-611; Arts & Sciences Elective Code: B

AUT-204 Automotive Automatic Transmissions and Transaxles (4)
Introduces automatic transmission hydraulic and electronic shift control fundamentals. Covers automatic transmission operation, inspection, servicing, diagnosis, and overhaul. Remove and replace an automatic transmission or transaxle. Disassemble, inspect, overhaul, and reassemble automatic transmissions. Includes powerflow through several planetary gearset designs. Covers late model transmission inspection, service, programing, and electronic fault diagnosis. Reinforces theories in practical, hands-on classroom and lab exercises. Credits: 4, Hours: (1/6/0/0), Prereq: AUT-311; Arts & Sciences Elective Code: B

AUT-221 Hybrid Electric Vehicle Fundamentals (4)
Introduces the fundamentals of hybrid electric vehicles. Explores the high- and low-voltage systems, inverters, HEV batteries, safety procedures, hybrid maintenance, and diagnosis. Reinforces theories in practical, hands-on classroom and lab exercises. Credits: 4, Hours: (2/4/0/0), Prereq: AUT-654, Automotive Arc Flash; Arts & Sciences Elective Code: B

AUT-308 Automotive Manual Drive Train and Axles I (2)
Introduces manual drivetrain fundamentals. Includes manual drivetrain operation and servicing. Focuses on theories in practical, hands-on applications in both the classroom and lab exercises. Credits: 2, Hours: (1/2/0/0), Prereq: AUT-104, AUT-611; Arts & Sciences Elective Code: B

AUT-309 Automotive Manual Drive Train and Axles II (2)
Introduces manual drivetrain fundamentals. Includes manual drivetrain diagnosis and overhaul. Teaches disassembly, making precision measurements and reassembly of a manual transmission, transaxle, and differential and transfer case. Focuses on theories in practical, hands-on applications in both the classroom and lab exercises. Credits: 2, Hours: (1/2/0/0), Prereq: AUT-308; Arts & Sciences Elective Code: B

AUT-310 Computerized Engine Controls I (2)
Introduces engine performance fundamentals. Focuses on identifying components, servicing fuel and ignition systems. Includes introduction to OBD II and NC3 scanner certification. Reinforces theories in practical, hands-on classroom and lab exercises. Credits: 2, Hours: (1/2/0/0), Prereq: AUT-104, AUT-611; Arts & Sciences Elective Code: B

AUT-311 Computerized Engine Controls II (3)
Introduces input sensors, ignition, fuel, and emission systems. Focuses on operational theory and testing using state-of-the-art diagnostic equipment and techniques. Reinforces theories in practical, hands-on classroom and lab exercises. Credits: 3, Hours: (1/4/0/0), Prereq: AUT-310; Arts & Sciences Elective Code: B

AUT-312 Computerized Engine Controls III (4)
Diagnose several ignition, fuel, and emission system faults, including tailpipe emission failures. Focuses on engine performance and emission system diagnostics using state-of-the-art diagnostic equipment and techniques. Reinforces theories in practical, hands-on classroom and lab exercises. Credits: 4, Hours: (1/6/0/0), Prereq: AUT-311; Arts & Sciences Elective Code: B

AUT-402 Automotive Suspension and Steering (2)
Introduces chassis fundamentals, including tire and wheel service. Focuses on front and rear chassis system principles and components. Remove and replace steering and suspension components. Perform wheel alignment procedures. Reinforces theories in a practical hands-on application through lab activities. Credits: 2, Hours: (1/2/0/0), Prereq: AUT-104, AUT-611; Arts & Sciences Elective Code: B

AUT-406 Advanced Automotive Suspension and Steering (2)
Diagnose chassis systems faults, including electric power steering (EPS), vehicle dynamics, and handling complaints. Reinforces theories in practical, hands-on classroom and lab exercises. Credits: 2, Hours: (1/2/0/0), Prereq: AUT-402; Arts & Sciences Elective Code: B

AUT-502 Automotive Brake Systems (2)
Introduces automotive brake hydraulic system fundamentals. Covers brake system operation and servicing. Instructs how to machine rotors and drums and inspect disc/drum brakes. Reinforces theories in practical, hands-on classroom and lab exercises. Credits: 2, Hours: (1/2/0/0), Prereq: AUT-104, AUT-611; Arts & Sciences Elective Code: B

AUT-536 Advanced Automotive Brake Systems (2)
Diagnose brake system electrical problems on advanced braking systems, including antilock, electronic stability control and hybrid braking systems. Reinforces theories in practical, hands-on classroom and lab exercises. Credits: 2, Hours: (1/2/0/0), Prereq: AUT-502; Arts & Sciences Elective Code: B

AUT-603 Basic Automotive Electricity (3)
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. Covers diagnosis of electrical circuits with and without multiplex network control. Includes certification as power users of the Snap-On 525D multi-meter. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

AUT-614 Automotive Electrical I (3)
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 automotive electrical wiring diagrams to diagnose electrical circuits. Credits: 3, Hours: (1/4/0/0), 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: (1/4/0/0), Prereq: AUT-655, either MAT-715 or MAT-076, Automotive Arc Flash; Arts & Sciences Elective Code: B

AUT-654 Automotive Advanced Electrical (4)
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 faults. Includes NC3 oscilloscope and component tester certification. Reinforces theories in practical, hands-on classroom and lab exercises. Credits: 4, Hours: (1/6/0/0), Prereq: AUT-611; 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: (.5/9/0/0), Prereq: AUT-611; Arts & Sciences Elective Code: B

AUT-658 Automotive Electrical II (3)
Covers automotive diagnosis, repair and service of electrical and electronic components found on current vehicles. Reinforces theories in practical, hands-on lab exercises. Credits: 3, Hours: (1/4/0/0), Prereq: AUT-614; Arts & Sciences Elective Code: B

AUT-680 Automotive Electrical III (3)
Covers automotive electrical systems with an emphasis on network controlled systems, including CAN, LIN and MOST. Builds diagnostic skills through extensive use of scan tools, oscilloscopes and multi-meter for body electrical circuit faults. Reinforces theories in practical, hands-on classroom and lab exercises. Credits: 3, Hours: (1/4/0/0), Prereq: AUT-658; Arts & Sciences Elective Code: B

AUT-702 Automotive Heating and Air Conditioning (2)
Introduces HVAC fundamentals. Focuses on refrigerant identification, recovery/recycling, evacuation, recharging, and leak testing skills. Covers identifying components, operational theory, and servicing HVAC systems. Includes EPA 609 Technician Certification. Reinforces theories in practical, hands-on classroom and lab exercises. Credits: 2, Hours: (1/2/0/0), Prereq: AUT-104, AUT-611; Arts & Sciences Elective Code: B

AUT-708 Advanced Automotive Heating and Air Conditioning (2)
Remove and install evaporator/heater core assemblies. Focuses on diagnosis of HVAC systems, including automatic temperature controls. Reinforces theories in practical, hands-on classroom and lab exercises. Credits: 2, Hours: (1/2/0/0), Prereq: AUT-702; 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-611, MAT-715, and AUT-888 or AUT-100; Arts & Sciences Elective Code: B

AUT-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: B; 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: Permission of instructor, dean

AUT-932 Internship (2)
Builds applied skills through employment, providing practical, on-the-job training at businesses related to instructional programs. 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-136 Advanced Word Processing (3)
Begins with a review of basic business 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: B

BCA-152 Comprehensive Spreadsheets (3)
Teaches creation of efficient spreadsheet models of common and complex business problems. Integrates critical thinking and analysis to find effective solutions to real-life business situations. Includes creation of charts using statistical analysis tools; how to locate and manage data with

reference functions; how to organize data for complex analysis; and how to apply problem-solving solutions to technical issues. Credits: 3, Hours: (2/2/0/0), Coreq: BCA-136; Arts & Sciences Elective Code: B

BCA-167 Comprehensive Databases (3)
Teaches how to edit and manage databases created using Microsoft Access, and write SQL statements for applications code. Integrates critical thinking and analysis to find effective solutions to real-life business situations. Credits: 3, Hours: (2/2/0/0), Prereq: BCA-136 or CSC-116; Arts & Sciences Elective Code: B

BCA-179 Emerging Technology Trends (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, cams), 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 and skills in 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-212 Introduction to Computer Business Applications (3)
Uses a Windows environment to teach hardware and software as business productivity tools. Includes a hands-on introduction to computer applications vital to business and industry. Covers how to use an operating system, file and folder management, email and online calendar use, and Internet applications. Focuses on software business applications including personal information management, productivity, collaboration, and flowcharting software. 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. Demonstrates proficiency at the core level of the MOS (Microsoft Office Specialist) certification. Credits: 3, Hours: (2/2/0/0), Prereq: CSC-116; 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), 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-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)
Includes genetics, cell biology, cellular metabolism, cell division, evolution, ecology, plant and animal reproduction, and biodiversity. Covers current topics in life science. Offers laboratory through investigations, discussion, written expression and readings. Beginning-level course for liberal arts students. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

BIO-112 General Biology I (4)
Serves as an introductory course for biology, science and health science majors. Covers principles of cellular biology, elementary biochemistry, energy functions, cell division, DNA/RNA, genetics, and evolution theory. Credits: 4, Hours: (3/2/0/0), Prereq: BIO-104 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)
Serves as an introductory course for biology, science and health science majors. Covers principles of organismal biology, ecology, the evolution and diversity of the Bacteria, Archaea, Protista, Fungi, Plantae and Animalia, followed by a comprehensive study of ecology. Includes 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), Arts & Sciences Elective Code: A; Comments: This course is intended for STEM majors. One year of high school Biology and Chemistry is strongly recommended.

BIO-131 Genetics and Society (3)
Provides a fundamental knowledge of genes, genomes, and how they are regulated to affect the function of an organism. Explores patterns of inheritance, and how genetic information can be used to determine genealogy, evolution, and in forensics. Reviews tools needed to critically explore the ethics of how modern genetic techniques will have an impact on us personally and as a society. Teaches the science of genes, genomes, heredity, evolution, crop production, genetics of cancer, genes as medicine, and the ethical considerations of gene manipulation. This is a non-science majors course. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

BIO-151 Nutrition (3)
Demonstrates the relationship between sound nutrition and good health. Explores 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

BIO-154 Human Biology (3)
Examines how human form and function work together to maintain homeostatic balance, and how dysfunctions can lead to disease processes. Explores fundamental biological principles as they apply to the human body. Intended for liberal arts students.Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

BIO-161 Basic Anatomy and Physiology (3)
Presents an overview of human form and function through lecture and laboratory. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

BIO-168 Human Anatomy and Physiology I (4)
Introduces the structure and function of the human body. Emphasizes organization at the cellular and tissue level, and selected organ systems. Reinforces concepts through laboratory activities in computer simulations, dissection, and/or human specimens. Credits: 4, Hours: (3/2/0/0), Arts & Sciences Elective Code: A; Comments: 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

BIO-173 Human Anatomy and Physiology II (4)
Continues the study of human organ systems. Reinforces concepts through laboratory activities in computer simulations, dissection, and/or human specimens. Credits: 4, Hours: (3/2/0/0), Prereq: BIO-168; Arts & Sciences Elective Code: A

BIO-186 Microbiology (4)
Surveys bacteria, viruses and fungi through their growth characteristics, morphology and pathogenicity. Introduces immunology and explores epidemiology and diagnosis of pathogenic bacteria. Emphasizes culturing, identification, aseptic technique and basic immunological assays in the laboratory. Credits: 4, Hours: (3/2/0/0), Arts & Sciences Elective Code: A; Comments: 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

BIO-195 Human Evolution (3)

Explores biological evolution of the human species, including primate comparisons and prehistoric culture. Examines the development of evolutionary theory, natural selection, principles of inheritance, mechanisms of evolution, human biological diversity and adaptation, the behavioral and ecological diversity of nonhuman primates, and the human fossil and archaeological records. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

BIO-208 Agricultural Biology and Chemistry (3)

Provides a basic understanding of the biological and chemical concepts and processes necessary for the study of agricultural crop and livestock production, and their end-use products. Applies these concepts to practical agricultural situations. Credits: 3, Hours: (2/2/0/0), 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. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

BIO-928 Independent Study (1)

Allows for a special concentration of study under the guidance of a faculty member. Requires an independent study contract. May be taken more than once. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

BUS: Business

BUS-101 Orientation to Business Professionalism (1.00)

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: B

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-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)

Covers business concepts introduced in earlier coursework. Focuses on the skills, knowledge, qualities, and attributes required to be a business professional. Emphasizes project-based evaluation and analysis of business scenarios. Credits: 1, Hours: (1/0/0/0), Prereq: ACC-152; 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: B

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: B

CAD: Computer Aided Drafting

CAD-110 Introduction to Parametric Solid Modeling (2)

Covers basic operations for creating drawings and assemblies. Uses a software platform called Solidworks. Allows for some self-paced work, but students are required to complete instructor-led demonstrations and additional exercises outside the text. Credits: 2, Hours: (1/2/0/0), Prereq: CSC-116 or IND-156; Arts & Sciences Elective Code: B

CAD-140 Parametric Solid Modeling I (3)

Extends the skills with Solidworks covered in Intro to Parametric Modeling. Focuses on Solidworks advanced features of the software useful to the design/manufacturing workplace. Covers advanced topics in assembly modeling, sheet metal modeling, 3-D drawing annotations, Weldments, Introductory FEA (Finite Element Analysis) and Solidworks electric as time allows. Credits: 3, Hours: (2/2/0/0), Prereq: CAD-110; Arts & Sciences Elective Code: B

CAD-141 Parametric Solid Modeling II (3)

Introduces the fundamentals of drafting, such as graphic language and vocabulary, orthographic projection, drawing layouts, section views, title blocks and dimensioning. Familiarizes students with the tools and techniques of the trade. Covers the basic concepts of creating engineering drawings that are submitted to be manufactured. Credits: 3, Hours: (2/2/0/0), Prereq: IND-156 or CSC-116; Arts & Sciences Elective Code: B

CAD-147 Parametric Solid Modeling III (3)

Extends the skills with ProE covered in PSMII. Focuses on ProE's sheet metal module and some of the other advanced features of the software useful to the design/manufacturing workplace. Covers advanced topics in modeling in assembly mode, PDM (Product Data Management), Sheet Metal modeling, Editing References, Mechanisms, 3-D drawing annotations, Behavioral Modeling, and Introductory FEA (Finite Element Analysis), as time allows. Credits: 3, Hours: (2/2/0/0), Prereq: CAD-141; Arts & Sciences Elective Code: B

CAD-168 Introduction to 3D Printing (2)

Introduces students to the historical factors that have helped shape manufacturing over centuries. Covers the current and emerging 3D printing applications and describes advantages and limitations of each technology. Evaluates real-life scenarios. Includes hands-on components of this

class. Requires that students download and print a model, as well as create a 3D model and then make a .stl file and print it. Credits: 2, Hours: (1/2/0/0), Prereq: CAD-110; Arts & Sciences Elective Code: B

CAD-201 Introduction to Building Information Modeling (3)
Introduces the basic principles and skills to use 3D CAD (BIM) software for the creation of architectural construction documents. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

CAD-237 Geometric Dimensioning and Tolerancing (3)
Introduces the special symbols used on mechanical drawings. Geometric dimensioning and tolerancing is a means of specifying engineering design and drawing requirements with respect to actual function and relationship of part features. It is a technique that ensures the most economical and effective production of these features for fabrication and inspection. Credits: 3, Hours: (3/0/0/0), Prereq: DRF-141, or both MFG-120 and MFG-130; Arts & Sciences Elective Code: B

CAD-300 AutoCAD for Applied Engineering (2)
Provides instruction in entry-level computer-aided design (CAD) skills. Covers basic commands, CAD hardware and applications, and complete 2-D drawings with AutoCAD. Requires keyboard familiarity. Allows for some self-paced work. Credits: 2, Hours: (1/2/0/0), Prereq: CSC-116 or IND-115; Arts & Sciences Elective Code: B; Comments: Drafting, mathematics or practical blueprint reading experience required

CAD-301 Inventor for Applied Engineering (2)
Provides parametric 3-D solid modeling experience using industry-standard software. Covers modeling operations including creating extrusions, cuts, holes, and revolutions. Basic operations for creating drawings and assemblies are also covered. The software platform utilized shall be Inventor. The curriculum allows for some self-paced work, but students are required to complete instructor led demonstrations and additional exercises outside the text. Credits: 2, Hours: (1/2/0/0), Prereq: CSC-116; Arts & Sciences Elective Code: B

CAD-805 CAD Projects (1.00-3.00)
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-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

CAD-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

CHM: Chemistry

CHM-110 Introduction to Chemistry (3)
Explores atoms, molecules, and how chemical reactions behave by practicing scientific measurements and using fundamental natural laws. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-052; Arts & Sciences Elective Code: A; Comments: The lab is optional.

CHM-111 Introduction to Chemistry Lab (1)
Accompanies CHM-110 as a laboratory. Credits: 1, Hours: (0/2/0/0), Coreq: CHM-110; Arts & Sciences Elective Code: A

CHM-132 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 interrelationships involved. Credits: 4, Hours: (3/2/0/0), Prereq: CHM-110 or CHM-165; Arts & Sciences Elective Code: A

CHM-165 General Chemistry I (4)
Studies the basic principles of inorganic chemistry with emphasis on such concepts as measurements and problem solving, chemical reactions and equations, stoichiometry, atomic structure and nuclear models, periodicity, chemical bonding, kinetic molecular theory and gas laws, and the structure and properties of matter. Credits: 4, Hours: (3/2/0/0), Prereq: MAT-102 or MAT-708; Arts & Sciences Elective Code: A; Comments: CHM-110 or one year high school chemistry highly recommended

CHM-175 General Chemistry II (4)
Continues General Chemistry I. Studies colligative properties along with thermodynamics and kinetics, chemical equilibrium, electrochemistry, acids, bases and complex ions. 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. Emphasizes nomenclature, stereoisomerism, chemical bonding, reaction mechanisms, the characterization of hydrocarbons, alkyl halides and alcohols. Teaches appropriate organic chemistry separation, isolation and synthetic techniques through laboratory experiments. 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. May be taken more than once. 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)
Allows for a special concentration of study under the guidance of a faculty member. Requires an independent study contract. May be taken more than once. Credits: 1-1.5, Hours: (0/2-3/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

CIS: Computer Information Systems

CIS-103 IT Career Exploration (1)
Explores technical careers in various information technology industries through a series of hands-on modules containing activities similar to those performed by IT professionals. Reviews different career clusters to learn about job titles, college requirements, growth potential, and salaries connected to each career. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

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 with 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: (2/2/0/0), 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), Prereq: CSC-116; Arts & Sciences Elective Code: B

CIS-135 Microcomputer Operating Systems (3)
Introduces and familiarizes students with a variety of operating systems in both the graphic user interface (GUI) and command line interfaces (CLI). Includes Windows, macOS, and Linux. Reviews the strengths of each system, including general system management and software support. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

CIS-171 Java (3)
Introduces Java programming language focusing on the syntax of the language and the object-oriented model upon which it is based. Teaches students to code, test, and debug simple Java applications, creating their own classes as well as using classes in the API. Demonstrates the concepts of encapsulation, inheritance, information/implementation hiding, state retention, messages, classes, and polymorphism. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C- in CIS-121; Arts & Sciences Elective Code: B

CIS-175 Java II (3)
Continues Java. Covers advanced GUI, exception handling, multithreading, multimedia, files and streams, networking, and data structures. Credits: 3, Hours: (2/2/0/0), Prereq: MAT-102 or

MAT-708, minimum C- in CIS-171 or CIS-172 or CSC-142, and in CIS-335, CIS-307 or CIS-332; Arts & Sciences Elective Code: B

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 development of web interfaces for desktop and mobile devices. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C- in CIS-175 or 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-249 Web Languages (3)
Introduces concepts and methods for implementing advanced web languages used in web programming to produce dynamic websites. Focuses on the following languages: advanced HTML 5 and CSS3, JS Frameworks, SASS or LESS, and introduces Angular JS and jQuery techniques. Credits: 3, Hours: (2/2/0/0), Prereq: CIS-207; Arts & Sciences Elective Code: B

CIS-280 Client Side Scripting (3)
Offers in-depth practical Web client script programming. Emphasizes JavaScript and DOM scripting. Explores the use and modification of open-source scripts and script libraries. Credits: 3, Hours: (2/2/0/0), Prereq: CIS-207, and either CIS-121 or CIS-126 or CIS-128; Arts & Sciences Elective Code: B

CIS-290 Web Content and E-Commerce Systems (3)
Introduces the infrastructure, components and management tools necessary for a successful content-driven website that includes e-commerce solutions. Examines techniques for successful content driven and e-commerce Web sites. Explores a variety of open-source web platforms based on Apache/PHP/MySQL technology. Identifies how to deploy, configure and style these systems to meet a variety of business and client needs. Includes the basic concepts, tools and techniques of Web analytics, search engine optimization, payment systems, content management, security, and legal and privacy issues. Includes laboratory experiences with shopping cart, content management systems, tracking and analytics. Credits: 3, Hours: (2/2/0/0), Prereq: MKT-110; Arts & Sciences Elective Code: B

CIS-326 Business Intelligence Tools (3)
Reviews different business intelligence tools and teaches how to use these tools. Discusses how to apply the tools to move data, search the data for invalid values, and ready the data for display to users in standard formats. Emphasizes understanding of the correct applications and how to use tools by multiple vendors. Credits: 3, Hours: (2/2/0/0), Prereq: CIS-335; Arts & Sciences Elective Code: B

CIS-327 Applied Analytics and Reporting (3)
Covers the basic tasks used in a reporting career. Focuses on interpreting requests in business terminology for data, generating repeatable and ad hoc reports, identifying questionable data, and basic data cleanup. Teaches how to describe reporting activities to both a technical and non-technical audience. Credits: 3, Hours: (2/2/0/0), Prereq: CIS-335; 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), Prereq: CIS-121 or CIS-126 or CIS-128, ; Coreq: CIS-335 or CIS-332; Arts & Sciences Elective Code: B

CIS-335 Relational Database and SQL (3)
Emphasizes basic concepts and principles of database systems. Introduces database systems and databases, normalization, table creation, and basic system and language support (SQL) for database systems. Focuses on data management and design inquiries to produce information for decision making, data analysis and integration with other software applications. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C- in CIS-121 or CIS-128 or CSC-142; 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), Prereq: CIS-334; Arts & Sciences Elective Code: B

CIS-354 Data Analytics and Reporting Projects (3)
Provides realistic hands-on project experience, building on learned data analytics and reporting skills. Applies strategies and methodologies for database and data warehouse design, implementation, security, and database tuning methods per industry standards in a group setting. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C- in CIS-326 and CIS-327; Arts & Sciences Elective Code: B

CIS-370 Fundamentals of 2D Visualizations and Games (3)
Introduces 2D casual game development using freely available programming libraries as well as handwritten code. Includes fundamental game concepts such as game loops, animation cycles, collision detection, user controls and scoring algorithms. Emphasizes learning games and interactive simulations intended to blend entertainment with education-related goals. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C- in CIS-121; Arts & Sciences Elective Code: B

CIS-371 Developing 3D Simulations and Games (3)
Introduces 3D simulations and game development with the Unity Game Engine and the C# programming language. Introduces asset and game editing tools along with the terminology associated with virtual 3D environments. Includes scripting actions, applying physics, multiplayer issues, and the use of animation and effects. Includes walk-through simulations or training games intended to blend entertainment with business-related goals. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C- in CIS-121; Arts & Sciences Elective Code: B

CIS-450 PLTW - Computer Science Principles (3)
Develops computational thinking, generates excitement for career paths utilizing computing, and introduces professional tools to foster creativity and collaboration. Develops programming expertise and explores the functionality of the Internet. Offers projects and problem solving associated with computing including application development, visualization of data, cybersecurity and simulation. Credits: 3, Hours: (1/4/0/0), 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), Prereq: minimum C- in CIS-622 and CIS-335; Coreq: CIS-624; Arts & Sciences Elective Code: B

CIS-622 .NET Development I (3)
Introduces the C# programming language and the Microsoft .NET architecture, the Visual Studio IDE and object-oriented programming with .NET. Emphasizes building stand-alone 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), Prereq: minimum C- in CIS-121; Arts & Sciences Elective Code: B

CIS-624 .NET Development II (3)
Extends students' knowledge of the C# programming language and the Microsoft .NET and related tools. Emphasizes the use of SQL and ADO.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), Prereq: minimum C- in CIS-622, and in either CIS-335, CIS-332 or CIS-307; Arts & Sciences Elective Code: B

CIS-626 .NET Development III (3)
Provides a practical introduction to Internet programming with the C# programming language and the Microsoft .NET MVC framework. Emphasizes development of websites and web services with ASP.NET and related tools. Focuses on cre-

ating multi-tier business web 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), Prereq: minimum C- in CIS-624; Arts & Sciences Elective Code: B

CIS-802 Software Development Capstone (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), Prereq: minimum C- in CIS-504 and CIS-624; Coreq: CIS-626; 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

CLS: Cultural Studies

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 Meijl 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-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 communications 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. 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

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 nonverbal cues. Builds competencies and skills relevant to various interpersonal contexts within health care settings. Credits: 3, Hours: (3/0/0/0), 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 communications. 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-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-101 Architectural Plans and Specs (3)
Introduces the idea of scaled and technical drawings, including common graphic conventions. Teaches how to navigate, read, and interpret residential and commercial construction documents, including drawings, specifications, and shop drawings. Compares and contrasts residential and commercial documents. Applies digital

take-off and mark-up processes. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

CON-108 Construction Safety (1)
Provides an introduction to job safety and best practices as they pertain to the construction industry. Achieves a general philosophy of safety awareness through the study of specific hazards and case studies. Navigates OSHA regulations and personal obligations within the construction industry. Receives the OSHA 10 Construction and Adult First Aid with CPR certifications upon completion of this course. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

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-126 Building Construction Systems II (3)
Continues the study of materials, methods, and terminology used in modern construction. Focuses on general knowledge of a broad range of exterior and interior finish systems, mechanical, electrical and plumbing systems - including their coordination with other construction systems. Credits: 3, Hours: (3/0/0/0), Prereq: CON-311; Arts & Sciences Elective Code: B

CON-134 Building Foundations 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-142 Carpentry Fundamentals III (3)
Introduces the terminology and methods used in modern residential and commercial construction systems. Offers hands-on instruction in insulation and building envelope systems, exterior finishes including roofing, window and exterior door installation, siding, and cornice construction. Uses project-based lab exercises to emphasize proper technique and component recognition. Identifies proper and safe tool and equipment use. Outlines the soft skills necessary for success in the construction industry. Credits: 3, Hours: (1.5/3/0/0), Prereq: CON-212; Arts & Sciences Elective Code: B

CON-143 Carpentry Fundamentals IV (3)
Introduces the terminology and methods used in modern residential and commercial construction systems. Offers hands-on instruction in light gauge interior wall systems, gypsum wall board installation and finishing, finish flooring, and interior door and millwork installation. Uses project-based lab exercises to emphasize proper technique and component recognition. Identifies proper and safe tool and equipment use. Identifies the soft skills necessary for success in the construction industry. Credits: 3, Hours: (1.5/3/0/0), Prereq: CON-142; Arts & Sciences Elective Code: B

CON-190 Construction Lab (3)
Provides introductory construction lab experience in a project-based environment encompassing teamwork, communication, productivity, and

Course Descriptions

technical skills required for success in the design and construction industries. Performs tasks associated with light wood frame, heavy timber, plastics, and composite framing systems. Addresses personal and environmental safety requirements. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

CON-211 Carpentry Fundamentals I (3)
Introduces the terminology and methods used in modern residential and commercial construction systems. Offers hands-on instruction in insulation and building envelope systems, exterior finishes including roofing, window and exterior door installation, siding, and cornice construction. Uses project-based lab exercises to emphasize proper technique and component recognition. Identifies proper and safe tool and equipment use. Outlines the soft skills necessary for success in the construction industry. Credits: 3, Hours: (1.5/3/0/0), Arts & Sciences Elective Code: B

CON-212 Carpentry Fundamentals II (3)
Introduces the terminology and methods used in modern residential construction systems and offers hands-on instruction in the framing of floor systems, wall systems, roof systems, and stair construction. Uses project-based lab exercises to emphasize proper technique and component recognition. Identifies proper and safe tool use. Outlines the soft skills necessary for success in the construction industry. Credits: 3, Hours: (1.5/3/0/0), Prereq: CON-190 or CON-211; Arts & Sciences Elective Code: B

CON-237 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-239 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-257 Pre-Construction Services (3)
Studies the preconstruction phase of a building construction project by focusing on conceptual cost estimating, schedule analysis, and constructability reviews. Provides skills in the coordination of organizing, planning, controlling and monitoring resources, procedures and protocols related to residential and commercial projects. Credits: 3, Hours: (3/0/0/0), 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-311 Building Construction Systems I (3)
Introduces the materials, methods and terminology used in modern construction. Focuses on general knowledge of a broad range of building materials and framing systems, and their coordination with other construction systems. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B; Comments: A classroom-based discussion course that includes field trips to construction sites

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: 2, Hours: (2/0/0/0), Prereq: CON-311; Arts & Sciences Elective Code: B

CON-313 Structures and Mechanical/Electrical/Plumbing Systems (3)
Provides a fundamental knowledge of mechanical, electrical, and plumbing systems. Analyzes HVAC, lighting, plumbing, fire and security systems regarding their impact on building design, space planning, construction cost, and sustainable design. Credits: 3, Hours: (3/0/0/0), 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. Discusses sustainable design issues such as climate, environment, durability, air and moisture transfer. Teaches traditional building methods as well as newer technologies of construction. Offers knowledge and resources beneficial to future certifications in many related industry credentials. Credits: 3, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

CON-321 Residential Estimating (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: B

CON-322 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: (3/0/0/0), Arts & Sciences Elective Code: B

CON-324 Advanced Construction Estimating (3)
Introduces the basic principles and skills needed to develop a complete estimate for commercial construction projects through use of spreadsheets and interactive estimating software. Credits: 3, Hours: (3/0/0/0), Prereq: CON-322; Arts & Sciences Elective Code: B

CON-328 Construction Documentation (3)
Facilitates analysis and use of construction documents, including drawings and specifications. Provides an overview of procedural, legal, contractual, and regulatory issues that govern those documents. Teaches the value of, and difference between, documents at various stages of the design and construction processes. Prepares examples of contract documentation. Contrasts roles and responsibilities within the delivery process. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

CON-330 Construction Capstone (3)
Demonstrates knowledge and skills acquired throughout the construction management program of study. Simulates construction project management processes on a commercial and/or residential project including a student presentation of their comprehensive construction project binder. Addresses project cost estimating, planning and scheduling, project control processes, construction safety, and risk management. Credits: 3, Hours: (2/2/0/0), Coreq: CON-324, MGT-101, MGT-130; Arts & Sciences Elective Code: B

CON-331 Construction Materials Science (3)
Provides an overview of various performance criteria that must be solved in order to design a structure. Emphasizes material science, site design/survey, and structural characteristics. Formulates solutions within a set of tolerances for a variety of design situations and mathematically justifies those solutions. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

CON-400 Construction Services, Project Close-Out and Commissioning (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 Architectural Modeling (3)
Utilizes 3D modeling software in order to explore and recreate common building units, assemblies, and materials; examine typical and best-practice building assemblies; articulate common regulations and standards that limit building design and construction; create massing diagrams of various building configurations. Solidifies plan reading skills. 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

CON-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

CON-932 Internship (1-6)
Provides full-time work in an approved, construction-related position that includes instructor visitations/evaluations and employer evaluations of performance. Provides 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: Criminal Justice

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-111 Police 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-136 Correctional Law (3)
Explores current statutory and case law pertinent to correctional concepts, facilities and related topics. Examines major legal issues: incarceration, probation, parole, restitution, pardon, restoration of rights and related topics. Students identify and discuss legal issues which directly affect correctional systems and personnel. Credits: 3, Hours: (3/0/0/0), Prereq: CRJ-100; Arts & Sciences Elective Code: A

CRJ-141 Criminal Investigation (3)
Presents the basic principles of investigation, both public and private, including: examination of the scene, collecting physical evidence, interrogations and interviews, sketching a scene, report writing, and basic photography. Special methods of investigating certain crimes are explored, and the function of the crime laboratory discussed. Credits: 3, Hours: (3/0/0/0), Prereq: CRJ-100; Arts & Sciences Elective Code: A

CRJ-200 Criminology (3)
Surveys the nature, causes and extent of crime and delinquency; major consideration is given to various explanations from numerous disciplines. Credits: 3, Hours: (3/0/0/0), Prereq: CRJ-100; Arts & Sciences Elective Code: A

CRJ-201 Juvenile Delinquency (3)
Analyzes the various components of delinquency: home, school, peer group and community structure. Explores the role of therapeutic and detention centers and the juvenile court, as well as approaches to prevention and treatment. Credits: 3, Hours: (3/0/0/0), Prereq: CRJ-100, and either SOC-110 or SOC-115; Arts & Sciences Elective Code: A

CRJ-202 Cultural Awareness for Criminal Justice Practitioners (3)
Expands the student's awareness of both cognitive knowledge and skills necessary to interact effectively with and serve culturally diverse populations. Emphasizes attitudes, competencies, and behavioral issues in interracial and cross-cultural contacts between criminal justice practitioners and a diverse citizenry. Sociological frameworks allow for examination of diversity with respect to race, ethnicity, gender, sexual orientation, poverty, religion, age, disability and language minorities. Credits: 3, Hours: (3/0/0/0), Prereq: CRJ-100, and either SOC-110 or SOC-115; Arts & Sciences Elective Code: A

CRJ-220 Community-Based Corrections (3)
Studies the principles and practice of corrections as applied in the community setting. Includes examination of theories of corrections that apply to the correctional practices of parole and probation. Also explores alternative treatment programs utilized in community halfway houses, alternative jails and outpatient facilities. Credits: 3, Hours: (3/0/0/0), Prereq: CRJ-100; Arts & Sciences Elective Code: A

CRJ-232 Community-Oriented Policing and Problem Solving (3)
Utilizes community-oriented policing philosophy and problem-oriented policing methods. Emphasizes active research into crime patterns, to explain them in terms of environmental influences and develop strategies to prevent and/or control crime problems. Credits: 3, Hours: (3/0/0/0), Prereq: CRJ-100; Arts & Sciences Elective Code: A

CRJ-237 Criminal & Constitutional Law (3)
Reviews historical development of constitutional law, philosophy of law, and the current impact on law enforcement officials. Examines the judicial process to better understand the societal and political influences that impact current day constitutional decisions. Explains elements of common offenses, procedural safeguards in the criminal process, and protections afforded to an individual. Credits: 3, Hours: (3/0/0/0), Prereq: CRJ-100; Arts & Sciences Elective Code: A

CRJ-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

CRJ-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

CRJ-932 Internship (1-6)
Provides placement in a criminal justice agency in a student capacity. Work experience in an agency under supervision of professionals in the field permits students to learn what career opportunities are offered. Credits: 1, Hours: (0/0/0/4), Prereq: CRJ-100; Arts & Sciences Elective Code: B

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 refinish 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)
Expands on previous material covered in Metalworking and Refinishing I. Reviews prior knowledge and procedures and emphasizes recycled part use, servicing movable and stationary glass and hardware, and noise vibration and harshness (NVH) materials. Introduces restraint systems, and identifying and servicing simple electrical system components. Knowledge will be applied to repairing various projects and live vehicles. Credits: 4, Hours: (0.5/7/0/0), Prereq: CRR-820; Arts & Sciences Elective Code: B

CRR-344 Metalworking III (4)
Expands previous material covered in Metalworking and Refinishing I, and Metalworking II. Emphasizes diagnosing and documenting vehicle structural damage. Establishes use of frame straightening equipment to restore vehicle dimensions. Introduces structural measuring, advanced high strength steels used in unitized structures, and replacing weld-on cosmetic and structural panels on various projects and live vehicles. Encourages students to improve speed

and quality of repairs. Credits: 4, Hours: (1/6/0/0), Prereq: CRR-342; Arts & Sciences Elective Code: B

CRR-545 Body Straightening/Painting and Restoration (7)
Introduces vehicle damage estimating and typical mechanical concerns related to repairing collision damage. Emphasizes increased work quality and speed in the lab setting, working on vehicle projects. Focuses on repairing minor vehicle damage from start to finish with minimal input from instructors. Provides practical application with an emphasis on industry standards of appearance, completion of work on time schedules, and material costs. Fine-tunes previously taught skills and sequences a repair plan while improving speed and work efficiency on a production basis. Students are given an opportunity to complete a project of their choice not to exceed two weeks in duration. Credits: 7, Hours: (1/12/0/0), Prereq: CRR-344; Arts & Sciences Elective Code: B

CRR-820 Metalworking and Refinishing Practices (3)
Reviews knowledge gained in Intro to Metalworking & Refinishing I and II to various projects. Emphasizes using proper welding equipment and techniques, metal straightening theory, and restoring sheet metal upset. Focuses on selecting and applying the proper types of fillers, undercoat and topcoat materials. Covers surface preparation and refinish applications, paint application problems, and finish defects and cures. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

CRR-830 Metalworking and Refinishing I (3)
Expands on previous material covered in Intro to Metalworking and Refinishing I and II, and Metalworking and Refinishing Practices. Reviews knowledge and procedures already learned with an emphasis on identifying vehicle clips, and fasteners, interior trim components and exterior bolt-on panel removal, and replacement and alignment procedures. Introduces plastic and composite repair and adhesive bonding. Demonstrates advanced masking and blendable paint match techniques. Emphasizes refinishing equipment maintenance. Applies knowledge to repairing of various components and live vehicles. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

CRR-833 Refinishing II (3)
Expands on previous material covered in Metalworking and Refinishing I. Emphasizes identifying and preparing plastic panels for refinishing, repairing and refinishing fiberglass surfaces, and mixing and applying flexible refinish materials. Introduces corrosion resistant material restoration, vehicle final detailing, and application of decals, appliqués and stripes. Credits: 3, Hours: (0.5/5/0/0), Prereq: CRR-830; Arts & Sciences Elective Code: B

CRR-837 Refinishing III (3)
Expands on previous material covered in Metalworking and Refinishing I, and Refinishing II. Emphasizes diagnosing and documenting vehicle finish damage. Introduces color theory, adjusting color, tinting and blending coatings, application of tri-stage paint systems, Waterborne paint systems, and mixing and application of custom refinish materials. 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: (2/2/0/0), Arts & Sciences Elective Code: A

CSC-116 Information Computing (3)
This course presents the basic concepts of information systems and computer literacy. The course incorporates theory as well as hands-on practice, which focuses on spreadsheets and database management systems (DBMS). Credits: 3, Hours: (2/2/0/0), 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. 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. Emphasizes data structures and practice in their specification, design, implementation and use. Includes 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 CIS-175 or CIS-176; Arts & Sciences Elective Code: A

CSC-160 Software Design and Development (4)
Builds on the foundation of basic programming skills acquired in CSC-142. Emphasizes the design and development of software systems. Includes user interface programming, graphics and multimedia, networking and concurrency. Provides experience developing software over an extended time period through long-term projects. 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. Covers mapping of statements and constructs in a high-level language onto sequences of machine instructions, as well as the internal representation of simple data types and structures. Offers programming practice with an assembly language to provide practical application of concepts presented in class. Credits: 4, Hours: (4/0/0/0), Prereq: CSC-142; Arts & Sciences Elective Code: A

CSC-900 NSF ECSEL Seminar (1)
Investigates skills and responsibilities in Electrical, Computer and Software Engineering careers. Includes development of a student 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

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. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

DEA: Dental Assistant

DEA-285 Oral Pathology for Dental Assisting (1)
Introduces the general principles of pathology. Emphasizes 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. Focuses on terminology, with descriptions of oral lesions and their treatment. Credits: 1, Hours: (1/0/0/0), Prereq: DEN-120; Coreq: 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 (3.5)
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), Arts & Sciences Elective Code: B

DEA-518 Dental Assisting II (1.5)
Learn principles of dental assisting with focus on intra-oral skill obtainment, sterilization processes and pharmacology. Credits: 1.5, Hours: (1/1/0/0), Prereq: DEA-517; 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-120, DEA-130, 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, HSC-107, HSC-210; Coreq: DEN-200; Arts & Sciences Elective Code: B

DEA-581 Dental Assisting Clinic II (4.5)
Requires students to comprehensively apply the skills of dental assisting in the private dental office setting. Credits: 4.5, Hours: (1/0/10.5/0), Prereq: DEN-200; Coreq: DEA-580; 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-701 Dental Office Procedures (1)
Introduces 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, jurisprudence and ethical conduct. Credits: 1, Hours: (1/0/0/0), Prereq: DEN-100, DEN-120; Arts & Sciences Elective Code: B

DEA-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

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), 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: (1.5/0/0/0), 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), Arts & Sciences Elective Code: B

DEN-220 Dental Nutrition (1)
Studies the role of diet upon oral structures and application of the role of dietary analysis to the treatment plan of a dental patient. Emphasizes analysis of the complete diet and preventive recommendations. Credits: 1, Hours: (1/0/0/0), Prereq: DEN-120 and either DEN-110 or BIO-168; Arts & Sciences Elective Code: B

DEN-300 Dental Radiography (3)
Teaches principles and techniques of dental radiography. Offers practical experience on manikins and selected patients. Credits: 3, Hours: (2/2/0/0), Prereq: DEN-100, and either DEN-110 or BIO-168; Coreq: 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)
Introduces general principles of pathology for dental hygienists with emphasis on specifics of oral pathology. Builds upon and applies biomedical science knowledge to the diagnosis and treatment of oral and maxillofacial diseases. Focuses on terminology. 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: (.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

DHY-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

DLT: Dental Lab Technology

DLT-152 DLT Oral Anatomy (1)
Explores 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)
Introduces the student to terms and anatomy of the oral cavity including a detailed study of crown and root morphology of both primary and permanent dentition. Credits: 2, Hours: (0/4/0/0), Arts & Sciences Elective Code: B

DLT-250 Foundation of Dental Technology (3)
Orients the student to dental technology including infection control, equipment operation, and health and safety. Applies numerous physio-chemical principles to the study and manipulations of basic dental materials. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

DLT-251 Introduction to Dentures (5)
Introduces the fabrication of complete dentures including procedures, equipment and materials required for replacing natural dentition, and the associated structures of the maxilla and mandible. Includes complete denture repairing, relining, and rebasing. Credits: 5, Hours: (2/6/0/0), Coreq: DEN-120, DLT-152, DLT-156, DLT-250; 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; 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 Prosthodontics (5)
Covers advanced fabrication of ceramics and crown/bridge prosthesis to include, but not limited to, multiple unit bridges, press, scanning, post and core using various porcelain systems to match natural dentition. Credits: 5, Hours: (2/6/0/0), Prereq: DLT-253, DLT-254, DLT-353, DLT-354, DLT-456; Arts & Sciences Elective Code: B

DLT-351 Removable Dental Prosthodontics (5)
Emphasizes advanced fabrication of complete denture prosthesis, partial prosthesis, and orthodontic appliance. Includes articulation of teeth in balanced occlusion, immediate dentures, removable partial dentures, Bionator, Fankel or similar orthodontic appliance, implants and attachments, characterization and techniques, identification in denture bases, and various types

of acrylics. 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. 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-354 Digital Dentistry (3)
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 final prostheses. Credits: 3, Hours: (1.5/3/0/0), Prereq: minimum C- in DLT-254 and DLT-445; Coreq: DLT-456; Arts & Sciences Elective Code: B

DLT-445 Orthodontics (3)
Identifies malocclusion classifications and incorporates the study of orthodontic materials, use of equipment, and fabrication. 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)
Examines comprehensive application of complete and partial fixed prosthesis. Includes, but not limited to, stress-breaker, telescopic, and full porcelain units. Emphasizes porcelain application techniques through the use of modifications of porcelain systems to better match natural dentition. Offers practical experiences through specific patient treatment. Credits: 12, Hours: (2/4/24/0), Prereq: DLT-350; Arts & Sciences Elective Code: B

DLT-452 Adv Removable Dental Prosthodontics (12)
Examines comprehensive application of complete prosthesis, partial prosthesis, and orthodontic applications. Including over-dentures, advanced orthodontic appliance fabrication, bio-mechanical design principles of removable prosthesis and orthodontic appliances, lingualized occlusion, specific denture, partial denture, and orthodontic concepts, stress equalizers, quality and productivity improvement and work authorization interpretation. Selects two of the three removable specialties (full dentures, partial dentures, orthodontics) for their emphasis in advanced studies. Offers practical experiences 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 prosthesis to include framework design considerations,

porcelain characteristics and limitations. Includes the equipment and materials required to replace natural dentition. Credits: 5, Hours: (2/6/0/0), Prereq: DLT-254; Arts & Sciences Elective Code: B

DLT-565 Occlusion (2)
Provides in-depth study of the principles of occlusion and their application to fabrication of dental prosthesis. Credits: 2, Hours: (1/2/0/0), Prereq: DEN-120, DLT-152; Arts & Sciences Elective Code: B

DLT-851 DLT Clinic I (1)
Provide insight into the clinical application to the dental patient, in relation to the laboratory processes presented during instruction. Credits: 1, Hours: (0/0/3/0), Prereq: DLT-251, DLT-253, DLT-254, DLT-353, DLT-354, DLT-456, HSC-107; Arts & Sciences Elective Code: B

DLT-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: B; Comments: Requires approval of supervising professor and dean

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-scene 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 production 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 language, concept and process for designing scenery and costumes in the theatre. Includes analysis, research, sketching, rendering and model-making. Credits: 3, Hours: (2/2/0/0), 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-928 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 graphic language and vocabulary, orthographic projection, drawing layouts, section views, title blocks and dimensioning. Familiarizes students with the tools and techniques of the trade. Covers creating engineering drawings that are submitted to be manufactured. 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, multiview 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)
Allows students to gain an understanding of drawing mechanical parts used in design. Covers detail drawing, bill of material, weight calculations, weld symbols, assembly drawings, exploded assembly drawings, structural, threads and fasteners, dimensioning and tolerancing. Credits: 3, Hours: (2/2/0/0), Prereq: CAD-300, DRF-141; Coreq: CAD-140; Arts & Sciences Elective Code: B

DRF-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: B; Comments: Requires approval of supervising professor and dean

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), Prereq: DSL-143; 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: (1/2/0/0), 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 engines. 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 tractor 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)
Provides a historical and philosophical foundation within 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-105 Technology for Early Childhood (1)
Introduces appropriate use of technology in early childhood professional practice, including a focus on approaches for instructional use with young children. Introduces students to development of a personal eportfolio and discusses appropriate use of technology, including assistive technology, in early childhood classrooms. Credits: 1, Hours: (1/0/0/0), Coreq: ECE-103 or ECE-158; Arts & Sciences Elective Code: B

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. Utilizes evidence-based, developmentally appropriate practices in the context of culture, language and abilities. Emphasizes developmental stages and appropriate learning opportunities, interactions and environments to support each child in the areas of literature, dramatic play, art, music, and fine and gross motor play. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A; Comments: Participation in this course requires successful completion of a background check. A fee is associated with this process.

ECE-159 Early Childhood Curriculum II (3)
Focuses on the development, implementation and assessment of appropriate environments and curricula for young children ages three through eight. Utilizes evidence-based, developmentally appropriate practices in the context of children's culture, language and abilities. Emphasizes child developmental stages and development of appropriate learning opportunities, interactions and environments to support each child in the areas of emergent literacy, math, science, technology and social studies. Credits: 3, Hours: (3/0/0/0), Prereq: ECE-158; 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. Utilizes developmentally appropriate evidence-based practices including responsive caregiving, routines as curriculum, collaborative relationships with culturally, linguistically and ability diverse children and families, with 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; Comments: Participation in this course requires successful completion of a background check. A fee is associated with this process.

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)
Offers supervised experience in selected early childhood settings serving ages birth through eight years. Includes integration of theory and developmentally appropriate evidence-based practice. Provides an understanding of 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: (.75/0/6.75/0), 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, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

ECE-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

ECE-930 Administrative Practicum (1)
Provides experience in a community-based setting designed to build on key competencies needed for early childhood program administration, management, and leadership. Credits: 1, Hours: (0/0/3/0), Arts & Sciences Elective Code: B

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 theory, 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 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

EDU: Education

EDU-110 Exploring Teaching (3)
Introduces the rewards, challenges, roles and responsibilities of beginning teachers and paraeducators. Develops generic teaching skills applicable from preschool through high school. Utilizes microteaching to simulate actual teaching situations, and discusses common teaching problems through case studies. Offers hands-on services in a K-12 classroom, or observes and interviews of a K-12 teacher. Meets part of the requirement for the Iowa Paraeducator Generalist Certification. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

EDU-119 Behavior Management (3)
Develops research-based, effective, and respectful skills of prevention, observation, data collection, diagnosis, and change of the behavior of students in K-12 classrooms. Develops strategies for helping others manage their own behavior. Meets part of the requirement for the Iowa Paraeducator Generalist Certification. 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. Teaches strategies for instructing diverse groups of learners and adapting curriculum and materials. Includes an overview of the special education system and the evolving relationship with regular education. Discusses issues related to adults with disabilities. 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-210 Foundations of Education (3)
Examines American education from historical, philosophical, and sociological perspectives. Discusses challenges and issues in education in the context of school organization, politics, funding, curriculum, professionalism, legal issues, and effective school and teacher characteristics. 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. Participants work collaboratively and individually to develop projects. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

EDU-258 Autism Spectrum Disorder Support (3)
Develops skills of observation, understanding and management of students with Autism Spectrum Disorders (ASD). Develops strategies for helping students with ASD manage behavior and develop social and communication skills. Meets Iowa paraeducator certification requirements for Autism Spectrum Disorders Area of Concentration. 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: (0/0/3-9/0), 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. Integrates 100 hours per semester at a school working under the supervision of a teacher. Choices include preschool, elementary and secondary settings. Includes a seminar. Credits: 3, Hours: (1/0/6/0), Prereq: EDU-110, PSY-111, and either PSY-121 or ECE-170; Arts & Sciences Elective Code: A; Comments: Minimum GPA of 2.5 required. Participation in this course requires successful completion of a background check process. A fee is associated with this process.

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 members. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor, dean.

EGR: Engineering

EGR-100 Engineering Orientation (1)
Introduces professional development as it relates to engineering. Explores various engineering disciplines and career paths. Covers the scientific and engineering method, engineering design process, problem solving, ethics, and the teaching and learning process. Incorporates both visual and oral communication. Offers opportunities to build an E-Portfolio of reflection through activities and skills surveys. 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-167 Engineering II (4)
Develops skills in solving engineering problems using the C-programming language. Applies programming and numerical techniques directly 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 vector algebra, forces, couples, equivalent-force, couple system, 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-280 Dynamics (3)
Emphasizes vector calculus, Newton's laws, kinetics and kinematics of particle motion, many-particles systems, and rigid bodies and applications. Credits: 3, Hours: (3/0/0/0), Prereq: EGR-180, MAT-216; Arts & Sciences Elective Code: A

EGR-285 Introduction to Electrical Science (4)
Covers DC and AC circuits, Ohm's law, Kirchoff's voltage and current laws. Provides 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: MAT-216; Arts & Sciences Elective Code: A

EGR-290 Thermodynamics (3)
Includes basic elements of classical thermodynamics, first and second law, reversibility, irreversibility, Carnot cycle, properties of pure substance, closed and open simple systems and one dimension steady-state and transient flow systems, and engineering applications. Credits: 3, Hours: (3/0/0/0), Prereq: CHM-165, MAT-216; Arts & Sciences Elective Code: A

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: Permissions of instructor and dean

EGT: Engineering Technology

EGT-124 Strength of Materials (4)
Presents design and analysis of bars, beams, trusses, shafts, connectors, columns, and other structural members under various loadings. Covers stress, strain, deflection and geometric dimensions of various mechanical components. Includes thin walled pressure vessels, Poison effect, thermal stresses, combined loads, eccentric loads, statically indeterminate loads, buckling loads and Mohr's Circle of Stress. Utilizes Excel software and laboratory activities. 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, analyses and design of planar mechanisms, stressing graphical techniques with CAD software. Focuses on position, velocity (relative and instant center methods) and acceleration for a variety of mechanisms, typically containing 4-bar or slider/crank linkages. Emphasizes modeling of mechanisms using computer software with design and analysis applications as time allows. Credits: 4, Hours: (2/4/0/0), Prereq: EGT-125; Coreq: CAD-141; Arts & Sciences Elective Code: B

EGT-136 Dynamics (4)
Uses problem solving to deepen student's understanding of the geometry of motion (kinematics) and the forces that create it (kinetics). Solves problems involving planar motion of both particles and rigid bodies. Analyzes the kinetics of planar motion will using Newton's Second Law, Work/Energy, and Impulse/Momentum methods. Uses PC based software as an analysis and visualization tool. Credits: 4, Hours: (3/2/0/0), Prereq: EGT-125; Arts & Sciences Elective Code: B

EGT-148 Hydraulics and Basic Circuits (3)
Introduces the use of hydraulic pumps and systems, and basic electronic circuit design, including analysis techniques for both. Emphasizes using Kirchhoff's Laws and Ohms Law to analyze circuits. Covers pumping, controlling, measuring flows, designing and analyzing hydraulic systems. Focuses on distinguishing between types of valves, pumps, hose and connection arrangements, flow patterns, as well as basic circuit parts, such as resistors, capacitors, switches and inductors. Introduces basic terminology and schematic drawing symbols for both hydraulics and circuit elements. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

EGT-185 Design Project (3)
Offers students the opportunity to use their creativity in designing specific products. Begins with a basic concept and progresses through analytic stage involving calculations and solid modeling. Includes solid modeling, final assembly and detail drawings and bill of materials. Credits: 3, Hours: (2/2/0/0), Prereq: CAD-140, CAD-141, MFG-202; Arts & Sciences Elective Code: B

EGT-195 Machine Design (3)
Focuses on problem solving involving size, shape and material requirements of machine parts. Applies various loading conditions to the machine components. Focuses on analyzing plates, shafts, weldments, fasteners, springs, wire rope and bearings. Credits: 3, Hours: (2.5/1/0/0), Prereq: EGT-124; Arts & Sciences Elective Code: B

EGT-400 PLTW - Introduction to Engineering Design (3)
Examines the engineering design process through application of math, science and engineering standards to hands-on projects. Students design solutions to problems using 3D modeling software and create an engineering notebook.

Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

EGT-410 PLTW - Principles of Engineering (3)
Explores engineering topics including mechanisms, the strength of structures and materials, and automation. Develops problem solving, research and design skills and strategies for design process documentation, collaboration and presentation. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

EGT-420 PLTW - Digital Electronics (3)
Provides a foundation in electrical engineering, electronics and circuit design. Covers combinational and sequential logic, and circuit design tools including logic gates, integrated circuits and programmable logic devices. 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)
Explores the design and construction of residential and commercial building projects. Investigates careers in the design and construction industry. Introduces concepts involved in building design and construction including land use, codes, utilities and services, sustainable design, building components and systems, structural design, storm water management, and cost estimation. Integrates STEM (Science, Technology, Engineering, Math) principles and teaches Revit, an Autodesk 3D design software for course projects. 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-364 Basic Electrical Circuits (4)
Focuses on basic safety and foundational principles for electrical trades. Covers basic electrical soldering techniques, electrical theory, terminology, symbols, abbreviations, calculations, and electrical meter usage. Introduces magnetic induction, transformer theory, and magnetic relays. Reinforces theory and classroom study with practical lab exercises. Credits: 4, Hours: (1/6/0/0), Arts & Sciences Elective Code: B

ELE-365 Industrial Wiring (3)
Covers industrial methods and practices used to install and maintain electrical distribution systems, busway, cable tray, conduit, panel boards, circuit protection, branch circuits, support methods, and NEC application. Credits: 3, Hours: (2/2/0/0), 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: (.5/1/0/0), Prereq: ELT-105; Arts & Sciences Elective Code: B

ELT-511 Extreme Internet Technology Troubleshooting (3)
Introduces the theory of troubleshooting GPON and VSDL as an optical FTTH access technology. Includes troubleshooting of OLT, ONT, EDFA, optical combiners and optical splitters. Provides laboratory troubleshooting sessions in layers 1-3, alarms and LED status. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-455; Coreq: ELT-510; 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-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-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-364; 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-279 Electronic Practices (4)
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 utilizes lab equipment to measure and troubleshoot circuits. Credits: 4, Hours: (3/2/0/0), 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-309 Digital Circuits (3)
Presents the analysis and design of digital circuits. Introduces Boolean algebra as a tool in working with basic gates, flip-flops, counters, shift registers, adders, timers and busses. Provides laboratory and computer-simulation exercises. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

ELT-341 Electric Circuits II (5)
Adapts DC circuit analysis techniques to the AC realm. Examines fundamental concepts of passive filters and frequency response. Includes computer simulations and laboratory sessions for further concept investigation. Credits: 5, Hours: (4/2/0/0), Prereq: ELT-345; Arts & Sciences Elective Code: B

ELT-345 Electric Circuits I (5)
Studies the fundamental DC concepts including current, voltage, polarity, energy and power. Describes the methods of analysis of DC electric circuits. Includes resistive-inductive and resistive capacitive circuits and introduces the fundamental concepts of AC electricity. Incorporates computer simulations and laboratory sessions for further investigation of concepts. Credits: 5, Hours: (4/2/0/0), Arts & Sciences Elective Code: B

ELT-350 Communications Systems I (7)
Offers the theoretical background with complementary laboratory exercises 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. Includes the application of the phase-locked loop, and propagation of electromagnetic waves in guided media and free space. Incorporates the building and measuring of active filters; balanced, FM, and AM modulators and demodulators. Credits: 7, Hours: (5/4/0/0), Prereq: ELT-341, ELT-518; Arts & Sciences Elective Code: B

ELT-396 Communications Electronics (4)
Offers 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. Includes system block diagrams, operation and application of the phase-locked loop, and propagation of electromagnetic waves in guided media and free space. Credits: 4, Hours: (4/0/0/0), Prereq: ELT-341, ELT-518; Coreq: ELT-398; Arts & Sciences Elective Code: B

ELT-398 Communications Systems I (3)
Covers projects related to building and measuring active filters. Includes the design, build and test of balance, and FM and AM modulators and semodulators. Offers 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), Coreq: 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, maintenance and documentation of the Local Loop including Digital Loop Carriers. Covers procedures for hand held and remote test units for pre-line qualification and testing. Includes both residential and business customer circuits. Learning activities include laboratory sessions, line qualification, line testing and troubleshooting techniques. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-443; Arts & Sciences Elective Code: B

ELT-408 Structured Cabling System (3)
Introduces structured cabling concepts of installation, testing and certifying. Covers types of cabling including UTP, STP, coaxial and fiber optics. Includes horizontal, backbone, work area and closet cabling. Utilizes TIA/EIA cabling standards and requirements. Includes laboratory sessions on wire schemes and IDP terminations. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

ELT-428 Telephony Circuits II (3)
Continues Telephony Circuits I with analysis of voice, data and video circuits. Includes the North American Digital Hierarchy and Sonet Digital Hierarchy signal levels and testing procedures. Covers the laws and proper procedures for cable locating and identification. Includes laboratory sessions, digital circuit testing, testing access and cable locating. Focuses on basic understanding of telephony circuits as they relate to the telecommunications industry. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-460; Arts & Sciences Elective Code: B

ELT-443 Multiplexing I (3)
Studies the theory and applications of time division, frequency division, statistical division and wave division multiplexing. Identifies different types of equipment, cables and configurations. Covers M13 multiplexers and Digital Subscriber Line Access Multiplexers. Includes laboratory sessions, digital circuit testing, provisioning, configuration and design. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-455; Arts & Sciences Elective Code: B

ELT-455 Transmission Circuits I (3)
Covers basic theory, practical knowledge and instruction for provisioning, testing and maintaining optical communication transmission systems. Includes ring technologies, timing, communications channels and alarm verification. Covers protection schemes, circuit configuration and remote loopbacks. Focuses on laboratory sessions in circuit design, circuit provisioning and testing. 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-510 Extreme Internet Technology (3)
Introduces theory of GPON and VSDL as an optical FTTH access technology. Includes OLT, ONT, EDFA, optical combiners and optical splitters. Provides laboratory sessions in installation, cabling and provisioning. Credits: 3, Hours: (2/2/0/0), Prereq: ELT-455; Coreq: ELT-511; Arts & Sciences Elective Code: B

ELT-514 Active Devices I: Transistor Amplifiers (7)
Presents an analytical approach with laboratory and computer-simulation exercises related to the design and troubleshooting of transistor amplifier. Includes bipolar junction transistors, FETs, small signal amplifiers, power amplifiers, amplifier frequency responses, and amplifier transient responses. Introduces operational amplifiers. Credits: 7, Hours: (5/4/0/0), Prereq: ELT-345; Arts & Sciences Elective Code: B

ELT-518 Active Devices II: Operational Amplifiers (3)
Presents an analytical approach through laboratory and computer-simulation exercises regarding the design and troubleshooting of operational amplifier circuits. Examines four basic types of negative feedback. Includes voltage amplifiers, comparator, analog-to-digital conversion, wave shaping, active filters, and printed circuit design. 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-618 Microprocessors I (5)
Studies counters, shift registers, memory, data storage, digital signal processing, and microprocessors. Learning activities include computer simulations and extensive laboratory sessions

with PLDs (programmable logic devices). Credits: 5, Hours: (4/2/0/0), Prereq: ELT-309; Arts & Sciences Elective Code: B

ELT-621 Microprocessors II (4)
Introduces software engineering through a combination of C programming language, robotics, microcontrollers, and version control software. Incorporates writing programs in C. Credits: 4, Hours: (3/2/0/0), Arts & Sciences Elective Code: B

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)
Practices system design through teamwork. Emphasizes designing, building, troubleshooting, and testing a complex electronic system as specified and approved by the design team's customer. Credits: 4, Hours: (3/2/0/0), Prereq: ELT-396, ELT-398; 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 (6)
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-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

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

ELT-931 Telecommunications Internship (2)
Provides student credit for on-the-job training in an approved business establishment. Credits: 2, Hours: (0/0/0/8), Arts & Sciences Elective Code: B

EMS: Emergency Medical Services

EMS-255 Emergency Medical Technician I (4)
Provides emergency medical care information at an Emergency Medical Technician (EMT) level as outlined by the National Emergency Medical Services Education standards. Introduces basic emergency care concepts in a preparatory module, including fundamental knowledge of the EMS system, safety/well-being of the EMT and medical/legal and ethical issues to the provision of emergency care. Requires HIPAA, Infection Control and Mandatory Reporting for child/adult training for health care providers. Offers American Heart Association Basic Life Support certification with successful completion. Credits: 4, Hours: (4/0/0/0), Arts & Sciences Elective Code: B

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 cardiac 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-255, EMS-350, EMS-365; Arts & Sciences Elective Code: B; Comments: Current certification in CPR for health care providers and active EMT certification are required

EMS-350 Emergency Medical Technician II (3.5)
Continues EMS-255. Introduces shock and resuscitation, patient assessment, care and transportation of the acutely ill trauma patient, special patient populations and EMS operations. Focuses on Geriatric Education for EMS (GEMS), Hazmat Awareness and Incident Command. Requires demonstration of proficiency for skills within the scope of practice for patients of all ages. Credits: 3.5, Hours: (3/1/0/0), Coreq: EMS-255, EMS-365; Arts & Sciences Elective Code: B

EMS-365 Emergency Medical Technician II Clinical (1)
Provides emergency medical assessment, care and transportation of acutely ill or injured patients of all ages. Develops proficiency in previously learned skills for direct patient care in selected clinical settings. Requires participation in and documentation of patient contacts and field experience approved by the medical director and the EMS program director. Requires demonstration of competency in skills for patients of all ages within the scope of practice. Credits: 1, Hours: (0/0/3/0), Coreq: EMS-255, EMS-350; Arts & Sciences Elective Code: B

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-255,

EMS-350, EMS-365; 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-168, MAT-772; 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-173, 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: 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. 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 kinematics 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)
Lecture 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-652; 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. Demonstrates instrumentation in the classroom and hands-on experience in the laboratory. Credits: 2.5, Hours: (1/3/0/0), Coreq: BIO-168; 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; 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; Arts & Sciences Elective Code: B

END-405 Neurodiagnostic Procedures (2)
Introduces other neurodiagnostic procedures performed in the EEG laboratory setting. Provides practical application and evaluation of neurodiagnostic procedures. Credits: 2, Hours: (1/2/0/0), Prereq: END-810; 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. Includes record review with physicians and correlative seminars. Credits: 6, Hours: (1/0/15/0), Prereq: END-310, END-330; 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. Includes record review with physicians and correlative seminars. Credits: 7.5, Hours: (1/0/19.5/0), Prereq: END-810; 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-405, END-830; 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-405, END-830; Arts & Sciences Elective Code: B

END-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

ENG: English Composition

ENG-011 Core Writing (1)
Supports success in ENG-101 through group and individualized instruction. Develops college-level reading and writing skills. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: D

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), 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-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-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-109 Integrated Composition (1-3)
Supports success in ENG-105 through group and individualized instruction. Develops college-level reading and writing skills. Credit hours vary depending on placement scores. Credits: 1-3, Hours: (0/2-6/0/0), Prereq: ENG-013; Coreq: ENG-105; 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-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: (3/0/0/0), 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: (3/0/0/0), 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: (3/0/0/0), Prereq: ENG-105, ENG-120; Arts & Sciences Elective Code: A

ENG-235 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: (3/0/0/0), 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: (3/0/0/0), 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: (3/0/0/0), 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: (3/0/0/0), 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: (3/0/0/0), 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: (2/2/0/0), Prereq: ENG-275; Arts & Sciences Elective Code: A

ENG-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 student meets 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

ENG-928 Independent Study (1-3)
Provides opportunity for independent writing projects under the guidance of a faculty member. Credits: 1-3, Hours: (1-3/0/0/0), Prereq: ENG-105, ENG-221; Arts & Sciences Elective Code: A; Comments: Permission of instructor.

ENV: Environmental Science

ENV-115 Environmental Science (3)
Explores major environmental issues including biotechnology, climate change, fossil fuel use, human population growth, land utilization, pollution, resource management, soil degradation, and toxicology. Teaches concepts from a variety of the sciences. Practices synthesizing environmental concepts, analyzing facts, and forming hypotheses. Credits: 3, Hours: (3/0/0/0), 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. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

ENV-928 Independent Study (1)
Allows for a special concentration of study under the guidance of a faculty member. Requires an independent study contract. May be taken more than once. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

ESI: Intensive English Second Language

ESI-002 L1 ELA Reading and Writing Skills (6)
Begins English reading and vocabulary development for beginner English learners. Builds writing skills at the sentence and short paragraph level, using foundational English grammar constructs. Credits: 6, Hours: (6/0/0/0), Arts & Sciences Elective Code: D

ESI-003 L1 ELA Listening and Speaking (6)
Builds a strong foundation of oral proficiency for beginner English learners. Develops basic listening comprehension, fluency, accuracy, and strategies for negotiating meaning through spontaneous communication. Credits: 6, Hours: (6/0/0/0), Arts & Sciences Elective Code: D

ESI-006 L1 ELA Reading & Vocabulary (3.00)
Begins the study of English reading and vocabulary development for non-native speakers who have few English skills. Emphasizes reading skills in informal settings. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: D

ESI-007 L1 ELA Listening and Conversation (3)
Begins the study of conversation and listening skills in English for non-native speakers who have little to no English. Emphasizes communicative speaking and negotiative listening in informal language settings. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: D

ESI-010 L1 Phonetics and Pronunciation (3)
Begins the study of English segmentals and intonation for non-native speakers who have few English skills. Emphasizes the use of phonetic alphabet. Focuses on using segmentals and intonation, in informal language settings. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: D

ESI-011 L1 ELA Grammar (4.00)
Begins the study of the basics of English grammar for non-native speakers of English with few English skills. Focuses on using English grammar fluently in writing, reading and speaking. Credits: 4, Hours: (4/0/0/0), 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 sentential 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: (2/0/0/0), Arts & Sciences Elective Code: D

ESI-016 L2 ELA Writing (2.00)
Provides practice in the basic formation of English sentences, paragraphs and reports for non-native speakers of English at the beginning level. Provides practice in structure, and in using English vocabulary in writing. Credits: 2, Hours: (2/0/0/0), Prereq: ESI-014; Arts & Sciences Elective Code: D

ESI-018 L2 ELA Grammar (4.00)
Provides beginning level 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: (4/0/0/0), 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: (3/0/0/0), Prereq: ESI-007; Arts & Sciences Elective Code: D

ESI-021 L2 ELA Phonetics and Pronunciation (3.00)
Provides practice in English segmentals and intonation of the English language for non-native speakers at the beginning level. Focuses 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-024 L2 ELA Reading and Writing Skills (6)
Builds English reading and vocabulary development for emerging English learners. Builds writing skills at the paragraph level, using clear and accurate basic grammar constructs. Credits: 6, Hours: (6/0/0/0), Prereq: ESI-002, or both ESI-006 and ESI-014; Arts & Sciences Elective Code: D

ESI-027 L2 ELA Listening and Speaking (6)
Builds a strong foundation of oral proficiency for emerging English learners. Develops listening comprehension, fluency, accuracy, and strategies for negotiating meaning through spontaneous communication. Credits: 6, Hours: (6/0/0/0), Prereq: ESI-003, or both ESI-007 and ESI-010; 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. Focuses 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 for non-native speakers of English. 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-072 Fundamentals of English Grammar (3)
Reviews English grammatical structure and examines advanced grammatical patterns for 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. Credits: 3, Hours: (3/0/0/0), Prereq: ESI-064; 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 for non-native speakers of English 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-120 Human Anatomy and Physiology for Exercise Science (3)
Covers structure and function of the human body as each pertains to the skeletal, muscular, cardiovascular and respiratory systems. Stresses cellular metabolism and neuromuscular function as each applies to human movement. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

EXS-180 Fitness Programming and Design (3)
Provides students with a basic understanding of laboratory and field assessment techniques used in exercise physiology, fitness/wellness facilities, and to a minor extent, clinical situations. Emphasizes fitness assessment and exercise program design principles for cardiovascular fitness, muscular strength and endurance, body composition, balance and flexibility. Credits: 3, Hours: (3/0/0/0), Prereq: minimum C- in EXS-120 or BIO-168; Arts & Sciences Elective Code: A

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. Credits: 4, Hours: (3/2/0/0), Prereq: minimum C- in EXS-120 or both BIO-168 and BIO-173, minimum C- in EXS-180 and PEH-170; Arts & Sciences Elective Code: A

EXS-285 Personal Trainer Capstone (3)
Solidifies in-depth knowledge and preparation for nationally certified personal trainers. Focuses on the components of personal training including behavior modification, client screening and the business of personal training. Successful completion of this course provides the necessary knowledge to apply for the NASM personal trainer, NSCA personal trainer and ACSM personal trainer certification exams. Credits: 3, Hours: (3/0/0/0), Prereq: minimum C- in EXS-120 or BIO-168/BIO-173, and in BIO-151, EXS-180, EXS-280 and PEH-170; Arts & Sciences Elective Code: A

EXS-932 Internship (2)
Provides practical experience in a fitness center/sports training environment. Includes employer/supervisor evaluations and instructor visits/interview. Credits: 2, Hours: (0/0/0/8),

Prereq: Minimum C- in EXS-120 or both BIO-168 and BIO-173, in BIO-151 or PEH-191, in PEH-170, and in EXS-180; Arts & Sciences Elective Code: A

FIN: Finance

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: B

FIN-130 Principles of Finance (3)
Examines the tools and techniques used in the world of finance. Introduces basic financial concepts including time value of money, asset valuation, risk analysis and return on investment. Emphasizes evaluation and decision-making techniques pertaining to financial management in various business situations. Credits: 3, Hours: (3/0/0/0), Prereq: ACC-152, ADM-133; Arts & Sciences Elective Code: A

FIN-300 Topics in Financial Services (3)
Covers sales, marketing and service for FS, leadership and professionalism, insurance and risk management, personal finance and financial products and services. Integrates lecture, case study analysis, scenarios, individual and group project work, and industry professional tours and/or presentations. Credits: 3, Hours: (3/0/0/0), Prereq: MKT-140, minimum C- in FIN-110 & FIN-121, either ADM-133 or MAT-102 or MAT-708; Arts & Sciences Elective Code: B

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. Instructional 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 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-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 on P/F (Pass/Fail) basis. Credits: 2, Hours: (1/2/0/0), 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), Prereq: 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-199 Firefighter I (8)
Prepares potential firefighters for the state administered Firefighter I certification exam. Includes basic firefighting tactics, fire behavior, safety, forcible entry, hose handling, ladders, protective clothing, SCBA rescue, ventilation, PPE and additional topics. Requires passing the Firefighter I exam through the Iowa Fire Service Training Bureau to become certified. Credits: 8, Hours: (6/4/0/0), 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 testing to obtain Firefighter II certification based on NFPA 1001, 2002 edition. Credits: 3, Hours: (2.5/1/0/0), Prereq: FIR-199; Arts & Sciences Elective Code: B

FIR-213 Principles of Emergency Services (3)
Studies fire service nomenclature, career opportunities in fire protection, organization and function 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. Emphasizes teaching principles applicable to in-service fire and rescue service skills training. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

FIR-330 Fire Service Company Officer (3.00)
Studies the company officer's role in the fire department. Examines topics including effective communications, organization and management, resource management, leadership, safety, fire prevention and investigation, and pre-planning. Meets NFPA 1021, Fire Officer I, 2003 edition. Includes lecture with activities and exercises designed to reinforce the topic. Requires completion of written assignments throughout the course that are designed to meet the requirements of Fire Officer I. Credits: 3, Hours: (3/0/0/0), Prereq: FIR-199; Arts & Sciences Elective Code: B

FIR-400 Emergency Safety and 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

FIR-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

FIR-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

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), Prereq: FLC-141; 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), Prereq: 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: FLF-142; Arts & Sciences Elective Code: A

FLF-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: FLF-241; Arts & Sciences Elective Code: A

FLF-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

FLF-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, aural/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 (3)
Introduces and develops elemental conversational skills in the Spanish language. The emphasis is in acquiring fundamental oral proficiency in Spanish in work situations. Includes activities that promote essential Spanish grammar tailored for the industry, and basic understanding of Latin American culture. Credits: 3, Hours: (3/0/0/0), 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 conversations 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 Hispanic 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-242; 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

FLS-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

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 cultures specifically as they relate to organizations, social justice issues and ethics. Develops leadership, personal responsibility, communication, conflict resolution and negotiation skills. Credits: 1-3, Hours: (0/2-6/0/0), Arts & Sciences Elective Code: B

GLS-120 Education Experience Abroad (1-3)
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: 1-3, Hours: (1-3/0/0/0), 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. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

GRA-127 Illustrator I (3)
Introduces Adobe Illustrator and its application in graphic communication. Includes Adobe Illustrator tools as they apply to object- (vector) based files, filters and layers. Teaches basic drawing and tracing techniques, and creating line art and logos. Addresses how to simplify art work through stylizing. Explores creative use of type. Incorporates how to set up color reproduction, how to save and manage files, and how these files interact with page layout and paint (raster) programs. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

GRA-128 Illustrator II (3)
Explores vector drawing tools as they apply to object-based files using Adobe Illustrator. Includes advanced drawing techniques, creation of medium to high quality art, and how to simplify artwork through stylizing. Teaches color set up for reproduction, saving and management of files, and how files interact with page layout and paint (raster) programs. Credits: 3, Hours: (2/2/0/0), Prereq: GRA-127, GRA-101; Arts & Sciences Elective Code: B

GRA-131 Digital Layout (3)
Provides working knowledge of InDesign and its use in creating effective page layouts combining graphics and type. Includes 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. Covers single- and spot-color printed material. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

GRA-132 Digital Layout II (3)
Expands knowledge of 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-101, GRA-131; Arts & Sciences Elective Code: B

GRA-140 Digital Imaging (3)
Introduces Photoshop. Covers 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 duo-tones; and creative application of Photoshop. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

GRA-141 Digital Imaging II (3)
Introduces color correction theory and practices, image enhancements using third-party plug-ins, effective use of layers, paths, adding type to images, and color correction controls to create visually effective images. Emphasizes properly preparing images for printing and publishing. Explores use of Photoshop for Web page design. Credits: 3, Hours: (2/2/0/0), Prereq: GRA-101, GRA-140; Arts & Sciences Elective Code: B

GRA-151 Web Design (3)
Introduces, explores and expands web design skills and knowledge base of Fundamentals of Web Programming. Incorporates design solutions via social and business models based on client need. Focuses on layout, wire framing, graphics selection and fonts using core graphic design principles. Teaches responsive design and web editing applications. Introduces Adobe Muse and Dreamweaver. Includes presentation for client approval. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C- in CIS-207, GRA-127, GRA-131 and GRA-140; Arts & Sciences Elective Code: B

GRA-152 Web Design II (4.50)
Provides website design through resources such as Bootstrap and Word Press to add multiple types of content for the web. Covers form building and utilizing Java Script on Web pages. Includes development of a website. Credits: 4.5, Hours: (3/3/0/0), Prereq: minimum C- in CIS-207, GRA-127, GRA-132, GRA-140, GRA-151 and GRA-195; 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: minimum C- in GRA-128, GRA-132, GRA-141, GRA-151, GRA-195; Arts & Sciences Elective Code: B

GRA-157 Web Design II (3)
Provides instruction on how to design a Web page using DHTML and other resources to incorporate motion and inter activity. Includes building forms and utilizing Java Script on Web pages. Students will design all elements of their final website. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C- in CIS-207, GRA-128, GRA-132, GRA-141, GRA-151 and GRA-195; Arts & Sciences Elective Code: B

GRA-191 Graphic Communication Applications (3)
Provides realistic hands-on experience about pre- and post-production project issues for both print and Web. Emphasizes managing multiple projects and deadlines, and working with other people - partly through a storefront scenario. Students work with actual clients in a team-based (company) operation, present collaborative 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: 3, Hours: (2/2/0/0), Prereq: minimum C- in CIS-207, GRA-128, GRA-132, GRA-141, and 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), Prereq: minimum C- in GRA-128, GRA-151 and GRA-195; 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. Stresses bakery procedures, scaling techniques, weighing, measuring, use and care of equipment, sanitation and safety, work simplification, costing and the production of high quality baked products. Credits: 3, Hours: (1/4/0/0), Prereq: HCM-109; Coreq: 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: (1/4/0/0), Prereq: HCM-117, HCM-125, HCM-126; Arts & Sciences Elective Code: B

HCM-123 International Pastries (3)
Provides additional theory and lab experience in preparing pastries representative of cultural traditions of the world. Stresses bakery procedures, 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-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, safety, 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: (.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: (.5/2/0/0), Prereq: HCM-100, HCM-138; 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-207 Menu Planning (1.5)
Studies the principles of menu marketing and management. Focuses on writing and analyzing menus for various population groups, types of food service facilities and service styles. Credits: 1.5, Hours: (1.5/0/0/0), Prereq: HCM-138; 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-260, HCM-279, HCM-354; Arts & Sciences Elective Code: A

HCM-231 Nutrition (2)
Reviews basic nutritional concepts in relation to current health concerns and the food service industry. Practices recipe and menu modification to improve nutrition. Prepares students for the national certification test by the National Restaurant Association Educational Foundation. Credits: 2, Hours: (2/0/0/0), 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. Practices skills in a clinical lab experience supervised by the purchasing manager of The Hotel at Kirkwood Center. Credits: 2, Hours: (1.5/0/1.5/0), 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, 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 uses. Provides instruction in 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 relative 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/lec) (1.5)
Introduces basic cold food preparation and presentation, including sandwiches, salads, salad dressings and simple cold appetizers. Emphasiz-

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es 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; 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. Instructs students in 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-288 Introduction to Hospitality II (1)
Explores the hospitality / foodservice industry with emphasis on a variety of industry segments and influences including fine dining, independent operations, health services, institutional operations. Provides career planning, career development and goal setting, and portfolio development. Credits: 1, Hours: (1/0/0/0), Prereq: HCM-321; Arts & Sciences Elective Code: B

HCM-289 Wedding Cake Decorating (2)
Provides theory and experience in designing and preparing traditional and contemporary multi-layered wedding cakes. Studies current trends related to wedding cake production. Credits: 2, Hours: (0/4/0/0), Prereq: HCM-125; Arts & Sciences Elective Code: B

HCM-310 Hospitality Law (3)
Reviews legal subjects relevant to the hospitality industry. Emphasizes 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-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), 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-329 Advanced Garde Manger (3)
Studies advanced techniques in cold food preparation and presentation techniques. Emphasizes chaudfroid, aspics, pates, galantines, ballotines, 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-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. Explores front-of the-house management skills as students demonstrate to 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 coursework within the Culinary Arts program. Explores back-of-the-house management skills through demonstration to plan, produce and successfully execute catering events of The Hotel at Kirkwood Center. 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-207, HCM-358, HCM-932; Arts & Sciences Elective Code: B

HCM-349 Advanced Baking and Pastry (2)
Provides expanded theory and extended application of baking and pastry skills fundamental to industry. Includes further identification and use of specialized ingredients, exposure to traditional and contemporary preparation and production techniques, and critical evaluation of high quality baked, pastry, sugar, and chocolate items. Credits: 2, Hours: (0/2/0/0), Prereq: HCM-123; Arts & Sciences Elective Code: B

HCM-351 Advanced Cake Decorating (2)
Provides advanced skills in the art of cake decorating, including fondant icing and its use in the baking industry; designing tiered and multi-leveled cakes; and making decorations and floral arrangements with gum paste. Credits: 2, Hours: (0/4/0/0), Prereq: HCM-125; Arts & Sciences Elective Code: B; Comments: Equipment needed.

HCM-354 Service Techniques (2)
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: 2, Hours: (1/0/3/0), Prereq: HCM-100; Arts & Sciences Elective Code: B

HCM-356 Beverage Fundamentals (3)
Identifies characteristics of alcoholic beverage classifications including wine, beer and spirits, and also non-alcoholic beverages that includes tea and coffee. Introduces essentials of beverage service including beverage classifications, characteristics, tasting and pairings with food. Examines fermentation, brewing, distillation, coffee roasting, espresso beverage production. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

HCM-358 Applied Culinary Skills (1)
Synthesizes existing culinary skills through application of cooking techniques using a diverse range of ingredients. Provides students with opportunity to integrate theoretical knowledge with practical application to plan, produce, and critically evaluate dishes in accordance with industry standards. Credits: 1, Hours: (0/2/0/0), Prereq: HCM-381; Coreq: HCM-932; Arts & Sciences Elective Code: B

HCM-381 International Cuisine (4.5)
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. Requires work produced individually, independent of others in class. Emphasizes critical thinking skills as students evaluate their completed dishes. Reinforces proper kitchen procedures, care and use of equipment, sanitation, safety, cost control and efficient work methods. Credits: 4.5, Hours: (1.5/6/0/0), Prereq: HCM-140; Arts & Sciences Elective Code: B

HCM-405 Culinary Competition (3)
Provides skills and techniques for food preparation in culinary competitions based on American Culinary Federation competencies. Focuses on food production time management, protein fabrication, plate presentation and knife skills. Offers preparation for participation in culinary competitions to demonstrate refined practical skills. Credits: 3, Hours: (0/6/0/0), Prereq: HCM-181; Arts & Sciences Elective Code: B

HCM-530 Culinary Capstone (1)
Integrates the skills, knowledge, professional qualities and attributes required by the industry. Integrates creation of a multi-course menu to demonstrate proficiency in 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-329, HCM-342, either HCM-207 or HCM-227; Arts & Sciences Elective Code: B

HCM-597 Front Office and Revenue Management (4)
Presents a systematic approach to front office procedures and revenue management 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 guest services duties throughout the front office. Revenue management and guest services content prepares the student for an internship experience. 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-934, HCM-935; 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. Introduces each of the seven traditional disciplines: general management, hotel sales, financial control, rooms operations, food and beverage operations, human resources, and physical plant maintenance. Emphasizes business ethics and effective communication. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

HCM-601 Housekeeping and Environmental Services (3)
Provides principles and practical experiences of housekeeping management and its related functions of property-wide environmental services and laundry operations. Emphasizes direct day-to-day operations, from big-picture management issues such as inventory and human resources, to technical details for cleaning and maintenance of hospitality operational areas. Learn first-hand the duties of these various housekeeping functions. 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. 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, Catering and Event Management (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. Reviews event management and further explores the discipline of revenue management to determine the applicability of revenue maximization strategies and their operational aspects. Experiences a professional sales, catering and event management department first-hand by working with The Hotel at Kirkwood Center's Sales and Catering staff. Credits: 3, Hours: (2/0/3/0), Prereq: MKT-110 or HCM-615, HCM-934, HCM-935; 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 at Kirkwood Center's Manager on Duty (MOD) program. Performs MOD shifts during evenings, weekends and overnights. Credits: 3, Hours: (2/0/3/0), Prereq: HCM-934, HCM-935; Arts & Sciences Elective Code: B

HCM-615 Hospitality Marketing (3)
Explores the process to plan and execute the conception of pricing, promotion, and distribution of ideas, goods and services. Creates hospitality-oriented exchanges to satisfy individual and organizational objectives. Teaches strategies for integrating a social media plan into the traditional marketing plan. Focuses on effective social media platforms to drive business and for beneficial responses to customer needs within hospitality. Credits: 3, Hours: (3/0/0/0), Prereq: HCM-296, HCM-597; Arts & Sciences Elective Code: B

HCM-616 Hospitality Professionalism (1)
Develops and recognizes leadership and teamwork utilizing a student professional organization, American Hotel and Lodging Association (AHLA). Involves students in club leadership and officer positions, industry trade shows and field trips. Offers community service projects to demonstrate social responsibility. Emphasizes experiential learning activities. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

HCM-618 Food and Beverage Operations (3)
Focuses on the management of food and beverage operations in hospitality establishments. Includes restaurant, banquets, room service, and beverage operations, menu planning, and stewarding. Facilitates internships in hospitality operations. Credits: 3, Hours: (3/0/0/0), Prereq: HCM-600, HCM-601; 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-930 Internship Seminar (3)
Gains valuable hospitality industry experience through application and theory pertaining to personal and cohort experiences from within the student internship process. Focuses on creating student/mentor internship goals, cohort collaboration with other Hospitality Management interns, and reflective learning and assessment of student internship experience. Credits: 3, Hours: (3/0/0/0), Prereq: HCM-597, HCM-618; Coreq: HCM-933; 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: .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 Internship (1-4)
Provides an opportunity to receive experience through on-the-job-training within the hospitality industry. Maximizes industry exposure and training depth through learning experiences structured by the program coordinator and training sponsor. Credits: 1-4, Hours: (0/0/0/4-16), Prereq: HCM-597, HCM-618; Coreq: HCM-930; Arts & Sciences Elective Code: B

HCM-934 Internship Seminar II (2)
Builds practical internship supervisory experiences through exposure to operational management theory pertaining to personnel, guest services, and financial management from an operational perspective. Includes cohort collaboration with other Hospitality Management interns, and reflective learning and assessment of student internship experience. Credits: 2, Hours: (2/0/0/0), Prereq: HCM-930, HCM-933; Coreq: HCM-935; Arts & Sciences Elective Code: B

HCM-935 Internship II (1)
Provides an opportunity to receive supervisory experience through on-the-job-supervisor training at The Hotel at Kirkwood Center. Maximizes exposure and training depth through learning experiences structured with hospitality operations. Internship opportunities include such operational areas as Front Office, Housekeeping and Laundry, and Food and Beverage operations. Additional arrangements may be made to encompass other areas within The Hotel at Kirkwood Center. Credits: 1, Hours: (0/0/0/4), 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)
Includes proper techniques for joining pipes. Covers proper techniques for making a solder joint, brazed joint and threaded joint. Alternative techniques include flare, crimp and compression. Credits: 3, Hours: (2/2/0/0), Prereq: HCR-605; 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

HCR-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: B; Comments: Requires approval of supervising professor and dean

HCR-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

HCR-932 Internship (1-3)
Focuses on providing the student practical experience in an HVAC related work environment. Includes employer/supervisor evaluations and instructor visits/interview. Credits: 1-3, Hours: (0/0/0/4-12), 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 to the Civil War. 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 contact. 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

HSC: Health Sciences

HSC-103 Studies in Health Sciences (1-3)
Provides readings, papers, seminars and basic research or other projects/assignments under the individual guidance of a faculty member. Credits: 1-3, Hours: (1-3/0/0/0), 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-118 Academic Success in Healthcare (1)
Helps students interested in health services fields identify and pursue a major that will lead to employment in the healthcare industry. Identifies students' strengths and interests while exploring options in health-related professions. Defines the pathways to a certificate, diploma, or degree

based on identified strengths and interests. Discusses barriers to personal plan completion. Reinforces academic skills leading to success. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

HSC-160 Healthcare Communication and Comprehension (3)
Simulates clinical and workplace situations for non-native English speakers in health programs. Teaches basic health vocabulary and procedures, and introduces the culture of the health workplace. Improves non-native speakers' comprehension and comprehensibility during clinical experiences. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

HSC-162 Health Support Professional (3.5)
Provides an introduction to key skills needed to be a direct care worker. Includes core, personal activities of daily living, and health monitoring and maintenance. Requires passage of CORE by 70 percent or better to proceed into the HMM (Health Monitoring & Maintenance) and PADL (Personal Activities of Daily Living) modules. Credits: 3.5, Hours: (2/3/0/0), Arts & Sciences Elective Code: B

HSC-168 Nurse Aide (3.5)
Required to meet the training requirements for nurse aides in long-term care facilities. Emphasizes achievement of a basic level of knowledge and demonstration of skills to provide safe and effective resident care. Integrates 30 hours of clinical, outside of normal class times, at a long-term care facility under the supervision of an RN. Requires your own transportation. Credits: 3.5, Hours: (2/1.5/2.25/0), Arts & Sciences Elective Code: B

HSC-189 Introduction to Nursing (4)
Focuses on professional role development of the student nurse. Emphasizes five modules: the nursing profession, health care competencies, health care delivery, skills and care planning. Reviews the nursing profession, history, current trends and future of nursing, influences on the profession, educational tracks, professional nursing organizations, and legal/ethical concerns. Develops basic understanding of health care competencies through implementation of the Institute of Medicine (IOM) and Quality and Safety in Nursing Education (QSEN) competencies. Introduces health care delivery concepts including systems, policy and finance, reform, health care disparities, global health, health promotion, informatics and patient education. Introduces skills including medical terminology, professional writing skills, therapeutic communication and care planning. Credits: 4, Hours: (3/2/0/0), Prereq: minimum C in ENG-105, ENG-106 or ENG-120; either 30 on ALEKS, or 19 on ACT Math, or minimum C in the math course recommended by lower placement score; minimum B- in BIO-168 within last 5 years; program GPA 2.5; program conference within 2 years of attempt to register; less than 15 remaining prerequisite credits including in-progress classes; CNA, LPN or HSP; if not a native English speaker, TOEFL score of 86 or higher; Coreq: none; Arts & Sciences Elective Code: B; Comments: CNA or HSP required. HSC-189 must be taken within two semesters of admission to PN technical.

HSC-205 Exploration of Healthcare Careers (3)
Explores multiple aspects of health care and careers in the health field. Covers the past, present and future of health care. Introduces key career cluster terms and career pathways within each career cluster. Provides career information, including education required for each area, educational costs to attain a degree versus expected career earnings, job descriptions, case studies and skills needed for specific career areas. Results in BLS CPR certification upon successful completion. 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

HSV: Human Services

HSV-109 Introduction to Human Services (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 human services approach, specifically information 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 or HSV-109; 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 or HSV-109; Arts & Sciences Elective Code: A

HSV-130 Interviewing/Interper Relation (3)
Includes an overview of various intervention techniques. Teaches principles of communication, interviewing and conflict resolution. Practices these principles and techniques in role-played, recorded situations. Credits: 3, Hours: (3/0/0/0), Prereq: HSV-109; 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 con-

sumers, 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. Develops skills in identification, planning, assessment, treatment/interventions, and the development of social support systems and community resources. Applies learned knowledge of integrated practice in a discipline-specific project. Credits: 3, Hours: (3/0/0/0), Prereq: HSV-109, or CRJ-100 and either SOC-110 or SOC-115; 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 the Diagnostic and Statistical Manual-5. 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-282, HSV-109, and either HSV-130 or HSV-131; 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 (6)
Provides practical experience in a human services agency for 220 hours. Encourages students to gain deeper insight through a field experience seminar. Objectifies student experience through discussion with other students and the instructor. Credits: 6, Hours: (1/4/9/0), Prereq: minimum C+ in HSV-110, HSV-120, HSV-282, either HSV-101 or HSV-109, and either HSV-130 or HSV-131; Arts & Sciences Elective Code: A; Comments: Completion of Human Service classes. Minimum GPA of 2.5 required to take this course.

HSV-801 Human Services Field Experience (3)
Provides 110 hours of practical experience in a human services agency. Incorporates a field experience seminar. Objectifies experiences through classroom discussion. Credits: 3, Hours: (.75/0/6.75/0), Prereq: minimum C+ in HSV-109; Arts & Sciences Elective Code: A

HSV-813 Alcohol and Drug Counselor Field Experience and Seminar I (6)
Provides 250 hours of practical experience in a substance abuse treatment facility. Encourages deeper insight through a field experience seminar. Objectifies experiences through classroom discussion. Credits: 6, Hours: (1/0/15/0), Prereq: minimum C+ in HSV-110, HSV-120, HSV-282, either HSV-131 or HSV-130, and either HSV-101 or HSV-109; 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)
Provides practical experience in a substance abuse treatment facility for a total of 250 hours. Follows and builds on Alcohol and Drug Counselor Field Experience and Seminar I. Encourages students through weekly seminars to maximize their experience through insight from other students and the instructor. Objectifies student experience through discussion with other students and the instructor via the weekly seminars. Credits: 6, Hours: (1/0/15/0), Prereq: minimum C+ in HSV-110, HSV-120, HSV-282, either HSV-131 or HSV-130, and either HSV-101 or HSV-109; 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-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

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, this 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-116 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. Analyzes the way 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-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-196 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), 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. Applies principles of design and concept development to two- and three- dimensional design projects. Focuses on the process of design regarding space planning and furniture layout projects. Develops design vocabulary relative to interior design. Studies teamwork structures and dynamics. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

INT-128 Historical Interiors and Architecture (3.00)
Provides a complete survey and evaluation of interiors and architecture 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 project delivery methods and media to produce presentation drawings and documents. Focuses on creation of visual and verbal presentation techniques. Demonstrates creative thinking and problem solving. Credits: 3, Hours:

(2/2/0/0), Prereq: INT-126, INT-129; Coreq: INT-201; Arts & Sciences Elective Code: B

INT-185 Architectural Photoshop Techniques (1)
Uses the capabilities of Photoshop to create architectural renderings. Focuses on understanding processes and developing techniques to enhance presentations. Credits: 1, Hours: (1/0/0/0), Prereq: minimum C- in INT-126; Arts & Sciences Elective Code: B

INT-200 Interior Design Studio (3)
Addresses the principles and elements of design, the design process, design documentation and construction documents. Develops creative problem solving skills individually and in teams, utilizing design software through the creation of analytical interior design projects. Credits: 3, Hours: (3/0/0/0), Prereq: ARC-185, INT-201, INT-132, INT-300; Arts & Sciences Elective Code: B

INT-201 CAD REVIT for Interior Design I (3)
Introduces the basic skills, information and concepts, using Revit and AutoCAD, necessary for the interior design field related to computer aided drafting (CAD), and building information modeling (BIM). Credits: 3, Hours: (3/0/0/0), Prereq: CON-101, INT-126, INT-128, 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: (3/2/0/0), Prereq: ARC-185, INT-132, INT-200, INT-201; 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: (3/2/0/0), Prereq: ARC-185, INT-132, INT-200, INT-201; Arts & Sciences Elective Code: B

INT-208 Costing and Estimating Interior Materials and Finishes (3)
Teaches basic principles and techniques for estimating residential and commercial projects, materials, finishes, and surfaces. Incorporates relevant mathematical processes to interior design businesses and practices. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

INT-211 CAD REVIT for Interior Design II (3.00)
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: INT-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: (3/2/0/0), Prereq: minimum grade C- in 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: (3/2/0/0), Prereq: minimum grade C- in INT-207; Arts & Sciences Elective Code: B

INT-218 Professional Practice and Development (3)
Examines the business of interior design, documents, ethics and project management. Explores interior design job opportunities, with a focus on creating professional goals, portfolios, resumes and professional documents. Students perform an internship search during this course. Credits: 3, Hours: (3/0/0/0), Prereq: minimum grade C- in both INT-206 and INT-207; Arts & Sciences Elective Code: B

INT-262 Interior Codes and Building Structures (3)
Teaches current international and local building codes, as well as ADA, barrier-free, and life-safety codes as they relate to interior design and interior environments. Focuses on codes and applications to meet overall health, safety, and welfare standards through design. Credits: 3, Hours: (3/0/0/0), 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-311 Global Perspectives in Interior Design (3.00)
Focuses on hands-on national and global design issues. Explores human factors through exposure to contemporary issues, historical architecture and design, dynamics, and various cultures and economic groups. Requires field study and travel. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

INT-312 Interior Design Topics (1-3)
Examines current topics related to interior design. Includes, but not limited to, interior photography, sustainability, furniture construction and other contemporary topics. Credits: 1-3, Hours: (1-3/0/0/0), Arts & Sciences Elective Code: B

INT-315 Regional Perspectives in Interior Design (1)
Focuses on regional design issues and human factors through exposure to contemporary issues, historical architecture and design, varying dynamics, other cultures, and different economic groups. Encourages collaboration and hands-on teamwork. Field study and travel component required. This course may be taken up to three times for a total of 3 credits. Credits: 1, Hours: (.25/1.5/0/0), 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

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-180 Mythology (3)
Introduces literary versions of diverse cultural traditions from around the globe as expressed in myth, including but not limited to regions of the Middle East, Africa, India, China, the Americas, and Northern Europe. Considers myth in its literary, social, geographical, political, historical, religious, moral and personal contexts. Examines theories of the evolution and analysis of myth, and applies these theories to diverse traditions, including contemporary ones. Compares unique qualities of individual myths and focuses on the enduring human issues present in most mythologies. Credits: 3, Hours: (3/0/0/0), Prereq: ENG-105; 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 hyperpoetry. 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; Comments: Admission to the Advance program

LIT-226 Literary Themes: Literature 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: (1/4/0/0), Coreq: MAP-501; Arts & Sciences Elective Code: B

MAP-125 Introduction to Clinical Procedures (2)
Introduces basic patient care skills including infection control techniques, measuring and recording vital signs, and body mechanics. Provides instruction in electrocardiography including psychological and physical preparation of a patient for an ECG, introducing paper set-up and operation of equipment, mounting of tracings and troubleshooting to obtain acceptable tracings. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

MAP-214 Medical Lab (3)
Provides basic principles and skills in hematology, urinalysis, venipuncture, blood chemical exams, and quality control as applied to the medical office. Credits: 3, Hours: (1.5/3/0/0), Prereq: MAP-123, MAP-125, HSC-107, HSC-115; 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: HSC-107, HSC-115, MAP-123, MAP-125; Arts & Sciences Elective Code: B

MAP-402 Medical Law and Ethics (2)
Focuses on the legal and ethical implications of practice in a medical setting. Includes scope of practice, confidentiality, HIPAA privacy and security requirements, legal terms and elements in the delivery of care, ethical guidelines of practice, and legal documentation requirements. Credits: 2, Hours: (2/0/0/0), Prereq: minimum grade C- in BIO-161; Arts & Sciences Elective Code: B

MAP-403 Basic Medical Office Insurance (2)
Provides a working knowledge of basic medical insurance programs, forms utilized and record-keeping involved in insurance claims. Applies the principles of diagnostic and procedure coding, and an understanding of a variety of insurance plans, including but not limited to Medicare, group, workers compensation and Tricare. Cred-

its: 2, Hours: (2/0/0/0), Coreq: HSC-115; 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), Coreq: MAP-123; 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), 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-125, MAP-214, MAP-312, MAP-501, MAP-513, MAP-402, MAP-403; Arts & Sciences Elective Code: B; Comments: All Medical Assisting technical courses.

MAP-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: B; Comments: Requires approval of supervising professor and dean

MAT: Mathematics

MAT-024 ELA Mathematics Vocabulary and Usage (1)
Prepares non-native English speakers for mathematics coursework. Emphasizes student interaction and discussions regarding terminology typically encountered in math courses. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: D

MAT-043 Integrated Mathematics (2)
Supports success in MAT-115 through group instruction. Develops skills required for success in college-level mathematics, including algebra skills, proportional thinking, and quantitative reasoning. Credits: 2, Hours: (2/0/0/0), Prereq: MAT-052; Coreq: MAT-115; Arts & Sciences Elective Code: D

MAT-052 Pre-Algebra (3.00)
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-076 Preparation for College Mathematics (3)
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), Prereq: MAT-052; Arts & Sciences Elective Code: D

MAT-095 Personal Achievement Math (1)
Provides one-on-one and group supplemental instruction in any pre-college level mathematics course. Must be registered concurrently in a separate mathematics course. 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-707, or MAT-076 through Module 8; Arts & Sciences Elective Code: B

MAT-103 Applied Math for Manufacturing (1)
Provides practical application of math theory to the manufacturing sector. Serves as a technical math course taken in conjunction with emporium math. Introduces trigonometry as it relates to manufacturing, specifically targeting Computer Numeric Controlled Machining and processes that use precision CNC press brakes and manual press brakes. Credits: 1, Hours: (1/0/0/0), Coreq: MAT-232; Arts & Sciences Elective Code: B

MAT-115 Mathematics and Society (3)
Introduces selected areas of mathematics in familiar settings and develops conceptual and problem-solving skills. 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-607 or MAT-707 or MAT-102; Arts & Sciences Elective Code: A

MAT-117 Math for Elementary Teachers (3)
Deepens understanding of the mathematics taught to elementary school children. Emphasizes problem-solving, communication, connections, and reasoning. Includes whole numbers, rational numbers, numeration systems, arithmetic operations, percent, sets, probability, and algebraic reasoning. Primarily for those planning to transfer into an education major at a 4-year institution. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-607 or MAT-707 or MAT-102; 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 preparation for calculus. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-707 or MAT-708 or MAT-102; Arts & Sciences Elective Code: A

MAT-136 Trigonometry and Analytic Geometry (5)
Examines trigonometric functions, graphs, trigonometric identities, applications and equations. Includes polar form of complex numbers, conic sections, polar coordinates, parametric equations, vectors, and three-dimensional geometry. 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. Intended as a calculus track 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-707 or MAT-708 or MAT-102; 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, 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-707 or MAT-708 or MAT-102; 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 means and proportions, and applications to business and other fields. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-607 or MAT-707 or MAT-115 or MAT-155 or MAT-102; 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 data in the context of effective business decision-making. Utilizes computer applications to visualize and analyze data. Covers descriptive statistics, probability, inferential procedures including confidence intervals and hypothesis test-

ing for one and two samples, regression, correlation and chi-square. Covers ANOVA if time allows. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-138 or MAT-140 or MAT-157 or MAT-163; Arts & Sciences Elective Code: A

MAT-163 Quantitative Reasoning for Business (4)
Covers algebra techniques, functions (including exponential and logarithmic), modeling, limits, and a thorough introduction to differential calculus. Focuses on applying quantitative methods to solve problems that arise in management and economic sciences and other related areas. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-102 or MAT-708; Arts & Sciences Elective Code: A

MAT-165 Business Calculus (3)
Emphasizes techniques and applications of differential and integral calculus to business economics. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-138; Arts & Sciences Elective Code: A

MAT-210 Calculus I (4)
Introduction to limits, differentiation, applications of the derivative, the definite and indefinite integral including The Fundamental Theorem of Calculus, and an introduction to differential equations. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-136; Arts & Sciences Elective Code: A

MAT-216 Calculus II (4)
Continues Calculus I. Includes integration, applications of integration used in applied disciplines, differential equations, Taylor series, and calculus in polar coordinates. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-210; Arts & Sciences Elective Code: A

MAT-219 Calculus III (4)
Continues Calculus II. 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. Introduces Laplace transforms that are used to solve differential equations. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-216; Arts & Sciences Elective Code: A

MAT-232 Applied Industrial Math for Technicians (3)
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 binary, geometry, dimensional analysis and algebraic expressions. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-052; Arts & Sciences Elective Code: B

MAT-234 Applied Electrical Math for Technicians (1)
Reviews mathematical principles and fundamentals utilized throughout the Industrial Maintenance, Energy Production and Automation pro-

grams. Covers area, volume, electrical formulas and series, parallel and series parallel circuits. Credits: 1, Hours: (1/0/0/0), Prereq: MAT-052; Arts & Sciences Elective Code: B

MAT-607 Survey of Data (3)
Introduces algebraic and statistical content intended to prepare students for a college-level statistics or liberal arts math course. Includes sampling methods, graphical, tabular, and numerical summaries of data, scatterplots and linear associations, linear models and slope, functions, and working with formulas. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-052 or MAT-772; Arts & Sciences Elective Code: B

MAT-707 Algebra Mastery 1 (3.00)
Continues modules from MAT-076, including linear equations and inequalities, polynomials, factoring, and systems of linear equations and inequalities. 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; 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 percentages. Covers applied geometry as it relates to finding length, area, volume, etc. Incorporates basic right angle trigonometry and provides practice in solving stated problems. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-052 or MAT-715; 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-772; Arts & Sciences Elective Code: B

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 involv-

ing 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 (1)
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 pipefitting 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-772; Arts & Sciences Elective Code: B

MAT-738 Applied Plumbing Math II (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 applications of Boyle's Law. Credits: 1, Hours: (1/0/0/0), Prereq: MAT-737; Arts & Sciences Elective Code: B

MAT-745 Technical Mathematics I (4)
Studies applied math with emphasis on high-skilled calculations. Includes concepts of basic algebra, functions and graphs, trig functions, geometry, quadratic equations, exponents and radicals, systems of equations, and determinants. Credits: 4, Hours: (4/0/0/0), Prereq: MAT-052 or MAT-076 depending on program; 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, formulas, 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-765 Welding Mathematics (3)
Covers basic algebra as it relates to fundamental equations, ratios and proportions, and percentages. Incorporates basic right angle trigonometry and provides for additional practice in solving stated problems. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

MAT-772 Applied Math (3)
Covers basic mathematical skills for students in career and technical fields. Focuses on computing with whole numbers, fractions, decimals, and signed numbers; percents; evaluating formulas; ratio and proportion as a problem-solving tool; the metric system; measurement; basic algebra; and reading tables and graphs. Credits: 3, Hours: (3/0/0/0), 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. May be taken more than once. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

MAT-928 Independent Study (1)
Allows for a special concentration of study under the guidance of a faculty member. Requires an independent study contract. May be taken more than once. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A; Comments: Permission of instructor and dean

MDT: Mobile Development Technology

MDT-340 IOS App Development (3)
Presents IOS development for Apple devices, including the iPhone, iPad and iPod touch using a project-based approach. Introduces Swift and mixed language programming. Includes development using the MVC design pattern within the Cocoa Touch Framework. Projects include user interfaces and touch screen interactions, sensors such as the GPS, Sprite Kit and other common libraries. Credits: 3, Hours: (2/2/0/0), Prereq: minimum grade C- in CIS-171 or CIS-622 or CSC-142; Arts & Sciences Elective Code: B

MDT-350 Android App Development (3)
Building on a foundation of Java programming, this course introduces students to Android development for phone and tablet devices. The course takes a project approach after exploring Android fundamentals including activities, services, providers, receivers, notifications and intents. Development tools include the Android SDK, emulators and the Eclipse IDE. Projects involve graphical user interfaces, touch screen interactions, data storage and sensors using standard libraries and APIs. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C- in CIS-171 or CIS-172 or CSC-142; Arts & Sciences Elective Code: B

MFG: Manufacturing

MFG-103 Applied Metallurgy (3)
Covers the different structures of metals and alloys and the resulting mechanical, electrical and magnetic properties; phase diagrams; kinetics of phase transformation; materials failure; thermal process; materials in engineering design/safety, applications and processing of metal alloys. Aligns with SENSE II, Units 1 through 3. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

MFG-104 Light Machining for Maintenance Trades (3)
Introduces industrial maintenance-specific machining and metal-working technologies and processes. Includes basic part design, layout, replication, and repair emphasized through lecture, reading and hands-on labs. Credits: 3, Hours: (1/4/0/0), Prereq: MAT-232; Arts & Sciences Elective Code: B

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-128 Measurement, Materials, & Safety (nims) (2)
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: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

MFG-129 Job Planning, Benchwork, and Layout (nims) (2)
Introduces the basics of hand tools, understanding drawings, manual machines, and layout. Focuses on interpretation of drawing information, description of basic symbols, and notation and interpretation of basic GD&T feature control frames. 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), 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), Prereq: MFG-120; 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 Tolerance (1)
Presents 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-173 CNC Mill Operator (NIMS) (2)
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: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

MFG-174 CNC Lathe Operator (NIMS) (2)
Introduces basic lathe operations. Covers manual and CNC lathe turning 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: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

MFG-202 Manufacturing Processes (2)
Focuses on producing a part on a CNC mill and lathe. Covers engineering parts to be cost effective as well as well-produced. 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

Course Descriptions

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-736, 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-736, MFG-130, MFG-215; 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-287 Manual Press Brake Operator (NIMS) (3)
Introduces basic press brake operations. Covers manual hydraulic down acting press brake practices, tooling, bending principals and applied mathematics. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. Credits: 3, Hours: (2/2/0/0), Prereq: MFG-259, MFG-286; Arts & Sciences Elective Code: B

MFG-289 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, such as mass production, batch processing and just-in-time processing. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

MFG-292 CNC Lathe Operator (NIMS) (3)
Introduces basic lathe operations. Covers manual and CNC lathe turning 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 trainers 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-332, MFG-334; 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. Aligns with NIMS (National Institute of Metalworking Skills) standards. Credits: 3, Hours: (2/2/0/0), Prereq: MFG-173, MFG-259, MFG-286, CNC students also need 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 and

MFG-292, CNC students also need MFG-299, MFG-324; 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: either MFG-393 or both MFG-128 and MFG-129; Coreq: MFG-287; Arts & Sciences Elective Code: B

MFG-341 CNC Lathe Operations (NIMS) (2)
Continues CNC lathe turning (program and set-up). 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-342 CNC Lathe Operations (NIMS) (2)
Continues CNC lathe turning (program and set-up). 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-173, MFG-259, MFG-286, MFG-297, MFG-332; Coreq: MAT-137; 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-393 Introduction to Machine Shop (4)
Explores basics of machining, raw materials, use of hand tools, safety and maintenance. Includes measurement techniques, materials, safety, machine tool math, quality control, understanding drawings, manual machines and layout. Focuses on interpretation of drawing information, description of basic symbols, and notation and interpretation of basic GD&T(Geometric Dimensioning and Tolerancing) and maintenance. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. Credits: 4, Hours: (2/4/0/0), Arts & Sciences Elective Code: B

MFG-394 CNC Machine Tool Operations (4)
Introduces basic machining operations. Covers manual and CNC milling and turning practices, tooling, machining practices and applied mathematics, and workholding techniques. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. Credits: 4, Hours: (2/4/0/0), Arts & Sciences Elective Code: B

MFG-395 CNC Machine Tool Program and Setup (4)
Introduces basic CNC vertical mill and lathe programming. Focuses on practices pertaining to CNC milling and turning programming language using G&M codes. Emphasizes teamwork, critical thinking and problem solving through hands-on experience and practical applications. Credits: 4, Hours: (2/4/0/0), Prereq: MFG-394; Arts & Sciences Elective Code: B

MFG-396 Alternative Manufacturing Processes (3)
Introduces basic theories and practices of machine operation, shop procedures, material properties and material handling. Covers programming, editing and adjusting parameters. Incorporates hands-on inspections and routine machine maintenance. Credits: 3, Hours: (1/4/0/0), Prereq: CAD-300; 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-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

MFG-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

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 organizational processes. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MGT-112 Business Innovation (3)
Applies creativity and innovation to manage projects in conjunction with STEM mentors from local businesses. Provides an experiential learning environment designed to foster development of entrepreneurial leadership skills through strategic development and execution. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

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: B

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: (2/2/0/0), 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 interdependent 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)
Actively reviews project management processes and studies the Project Management Book of Knowledge (PMBOK) in order to complete the certification for the Project Management Institute's Certified Associate Project Management Exam. Credits: 3, Hours: (3/0/0/0), Prereq: MGT-121; Arts & Sciences Elective Code: B

MGT-161 Agile Project Management With Scrum (3)
Introduces agile project management processes to improve efficiency and flexibility while decreasing time to market. Explores Scrum, an agile practice that develops cross-functional and self-managed teams to produce a viable product that reacts to rapidly changing markets and climates. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

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 - Talent Management and Employee Relations (3)
Focuses on development of hands-on skills and critical thinking abilities necessary in the field of Human Resource Management. Includes the application of tools and techniques in the following HR functions: talent acquisition, total rewards, employee and labor relations, training /and development, and performance management. Credits: 3, Hours: (3/0/0/0), Prereq: MGT-101, minimum C- in CSC-116 and MGT-170; Arts & Sciences Elective Code: B

MGT-179 Human Resource Strategies - Total Rewards, Safety and Labor (3)
Develops hands-on skills and critical thinking abilities necessary in the field of Human Resource Management. Introduces the application of tools and techniques in compensation, benefits, employee safety and workers compensation, and labor relations. Credits: 3, Hours: (3/0/0/0), Prereq: MGT-101, minimum C- in CSC-116 and 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 management, 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 (3.00)
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: B

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), 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: B; 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-104 Army ROTC Leadership & Personal Development (1)
This course introduces cadets to the military personal challenges and competencies 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, officership, and the Army profession. The focus is on developing basic knowledge and comprehension of Army leadership dimensions while gaining a big picture understanding of the ROTC program, its purpose in the Army, and its advantages for the student. No military obligation is associated with participation in the course. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

MIL-105 Army ROTC Introduction to Tactical Leadership (1)
This course introduces students to leadership fundamentals such as setting direction, problem solving, listening, presenting briefs, providing feedback, and using effective writing skills. Students explore dimensions of leadership values, attributes, and competencies in the context of practical, hands-on, and interactive exercises. Instructor mentorship and building relationship among the students through common experience and practical interaction are a critical aspect of the course experience. No military obligation is associated with participation in the course. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

MIL-106 Air Force Heritage and Values I (1)
Introduces students to the United States Air Force (USAF) and Air Force Reserve Officer Training Corps (AFROTC). Reviews structure of the U.S. Air Force, the Air Force's capabilities, career opportunities, benefits, Air Force installations, core values, leadership, team building, and communication skills. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

MIL-111 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 students 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 students plan and conduct all events. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

MIL-113 Air Force Heritage and Values II (1)
Introduces students to the United States Air Force (USAF) and Air Force Reserve Officer Training Corps (AFROTC). Features the evolution of the U.S. Air Force/Air Force history, principles of war/tenets of air power, what the Air Force brings to the joint fight, and a look at the Department of the Air Force and Air Force major commands. Covers leadership concepts regarding ethical decision-making, communication, and professional speaking opportunities. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

MIL-201 The Evolution of USAF Air & Space Power II (1.00)
Continues Evolution I. Presents additional information on the 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 demonstrate the evolution of today's USAF air and space power. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

MIL-203 Team and Leadership Fundamentals I (1)
Teaches the foundations of leadership and team building. Uses team-building activities and class discussion to demonstrate the importance of basic verbal and written communication. Emphasizes skills of listening, followership, and effective problem-solving. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

MIL-204 Army ROTC Innovative Team Leadership (2)
The course explores the dimensions of creative and innovative tactical leadership strategies and styles by examining team dynamics and two historical leadership theories forming the basis of the Army leadership framework (trait and behavior theories). Cadets practice aspects of personal motivation and team building in the context 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, structure, and duties, and basic aspects of land navigation and squad tactics. No military obligation is associated with participation in the course. Credits: 2, Hours: (32/0/0/0), Arts & Sciences Elective Code: A

MIL-205 Army ROTC Tactical Leadership (2)
The course examines the challenges of leading tactical teams in the complex contemporary operating 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 the dynamics of adaptive leadership in the context of military operations. Cadets develop greater self-awareness as they assess their own leadership styles and practice communication and team building skills. No military obligation is associated with participation in the course. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

MIL-206 Team and Leadership Fundamentals II (1)
Teaches leadership and team building concepts. Offers team-building activities and discusses the importance of basic verbal and written communication. Features conflict management, comprehensive airman fitness, and a leadership capstone. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

MIL-211 AFROTC Leadership Lab III (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 students plan and conduct all events. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

MIL-212 AFROTC Leadership Lab IV (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 students plan and conduct all events. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

MKT: Marketing

MKT-110 Principles of Marketing (3)
Studies the process of planning and executing the conception, pricing, promotion and distribution of ideas, goods and services to create the exchanges that satisfy individual and organizational goals. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MKT-130 Social Media in Business (3)
Outlines the fundamentals of social media marketing in business. Addresses strategies for integrating a solid social media 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 communications for various platforms. Credits: 3, Hours: (3/0/0/0), Prereq: MKT-110; Coreq: 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. Students learn about careers in selling, buyer behavior, product knowledge and selling concepts. Emphasis is on problem solving. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

MKT-150 Principles of Advertising (3)
Acquaints students with the philosophy of advertising, historical concepts, and practical applications of advertising at the local and national levels. Includes media and media selection, copywriting, and layout, with an emphasis on product selection for advertising. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

MKT-160 Principles of Retailing (3)
Studies retailing and its functions in a free enterprise 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: 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 competition tool. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

MKT-195 Marketing Management (3)
Examines the marketing process from product conception to production and delivery. Emphasizes marketing plan development, situation analysis, marketing strategies and product management for both new and current products. Utilizes a capstone simulation project to develop and enhance marketing and management skills. Credits: 3, Hours: (3/0/0/0), Prereq: MKT-110; Arts & Sciences Elective Code: B

MKT-350 Customer Service Professional (9)
Explores areas of customer service representative, call center representative, helpdesk support, technical support, financial services support and administrative support professional. Teaches core knowledge and competencies on call center operation including metrics, required skills and terminology. Emphasizes soft skills including listening, speaking, questioning and de-escalating upset customers. Incorporates facilitation, review techniques, role-play and practice. Successful completion of this course will lead to the Customer Service Professional Certificate. Credits: 9, Hours: (4.5/9/0/0), Prereq: COM-723 or ENG-101 or ENG-105, minimum C- in CIS-135; Arts & Sciences Elective Code: B

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: B; 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

MLT: Med Lab Tech

MLT-105 Pathophysiology for the Laboratorian (3)
Presents clinical disorders and diseases commonly tested for in the field of laboratory medicine. Covers pathology, etiology, diagnosis, inter-

actions and interferences, symptoms and prognosis. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

MLT-106 Introduction to Biosafety (1)
Introduces the basic principles and practices of biological safety in the laboratory workplace. Provides understanding of risks present in the laboratory and how to protect oneself from risks. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

MLT-109 Principles of Phlebotomy (3)
Develops advanced skills to perform phlebotomy. Includes demonstrations of and practice collecting blood specimens by venipuncture and capillary methods. Teaches anatomy and physiology of the circulatory system, medical terminology, customer service, methods to facilitate the collection and transportation of other laboratory specimens as well as how to obtain blood specimens. Credits: 3, Hours: (1.5/1/3/0), Arts & Sciences Elective Code: B

MLT-115 Clinical Lab Fundamentals (3)
Addresses the field of laboratory medicine. Teaches basic laboratory mathematics, testing methods, and quality control. Introduces blood collection and the study of common blood cells and blood cell disorders. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

MLT-120 Urinalysis (3)
Studies urine formation and methodology determining the physical, chemical, and microscopic properties of urine in normal and abnormal states. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C in BIO-161, MLT-105, MLT-106, MLT-109, MLT-115, and either COM-222, SPC-101, SPC-112 or SPC-122; Arts & Sciences Elective Code: B

MLT-130 Hematology (3)
Studies hematology, the formed elements of the blood-red blood cells, white blood cells, and platelets. Addresses development and characteristics of cells and platelets, methods of measurement, and abnormalities. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C in BIO-161, MLT-105, MLT-106, MLT-109, MLT-115, and either COM-222, SPC-101, SPC-112 or SPC-122; Arts & Sciences Elective Code: B

MLT-230 Advanced Hematology (3)
Continues Hematology. Includes an in-depth study of various anemias, leukemias, and other hematologic disorders. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C in BIO-186, MLT-120 and MLT-130, and in either COM-222, ENG-105 or ENG-108 or ENG-120, and in either SOC-115 or SOC-200 or SOC-220 or SOC-265; Arts & Sciences Elective Code: B

MLT-233 Hemostasis and Thrombosis (2)
Emphasizes the mechanism by which the body prevents loss of blood from the vascular system. Focuses on chemical responses of blood vessels, platelet activation and biochemical reactions that lead to clot formation and dissolution. Includes tests used to detect coagulation deficiencies and abnormalities. Credits: 2, Hours: (1/2/0/0), Prereq:minimum C in BIO-186, MLT-120 and MLT-130, and in either COM-222, ENG-105 or ENG-108 or ENG-120, and in either SOC-115 or

SOC-200 or SOC-220 or SOC-265; Arts & Sciences Elective Code: B

MLT-245 Clinical Chemistry (5)
Introduces various aspects of clinical chemistry including primary blood and body fluid constituents, their significance in health and disease, and methods utilized in their determinations. Emphasizes competence in general procedures for clinical analysis and the development of pertinent skills of troubleshooting, evaluating data, and interpreting for presence/absence of disease. Credits: 5, Hours: (3/4/0/0), Prereq: minimum C in MLT-230, MLT-233, MLT-270, and in either CHM-110/CHM-111 or in CHM-132; Arts & Sciences Elective Code: B

MLT-255 Clinical Microbiology (5)
Examines the essential principles of bacteriology relative to human disease with emphasis on knowledge regarding the pathogenicity of the microorganisms presented. Emphasizes competence in general procedures such as cultivation, isolation, and identification of organisms. Discusses evaluation/interpretation of laboratory data. Credits: 5, Hours: (3/4/0/0), Prereq: minimum C in MLT-230, MLT-233, MLT-270, and in either CHM-110/CHM-111 or in CHM-132; Arts & Sciences Elective Code: B

MLT-260 Immunohematology (4)
Covers blood grouping, typing, antibody screening and identification, and compatibility testing with an overview of hemolytic disease of the newborn, processing of donor blood, and blood component therapy. Credits: 4, Hours: (2/4/0/0), Prereq: minimum C in MLT-230, MLT-233, MLT-270, and in either CHM-110/CHM-111 or in CHM-132; Arts & Sciences Elective Code: B

MLT-270 Immunology and Serology (2)
Focuses on the reactions of the body's immune system to foreign substances. Emphasizes reactions between antigens and antibodies. Teaches disease detection such as syphilis, infectious mononucleosis, rheumatic fever and others. Credits: 2, Hours: (1/2/0/0), Prereq: minimum C in BIO-186, MLT-120 and MLT-130, and in either COM-222, ENG-105 or ENG-108 or ENG-120, and in either SOC-115 or SOC-200 or SOC-220 or SOC-265; Arts & Sciences Elective Code: B

MLT-283 Clinical Practicum: Urinalysis (1)
Continues Urinalysis. Provides clinical experience in the performance of routine urinalysis. Stresses comparison of methodology covered in Urinalysis. Credits: 1, Hours: (0/0/48/0), Prereq: minimum C in MLT-245, MLT-255, MLT-260 and MLT-290; Arts & Sciences Elective Code: B

MLT-286 Clinical Practicum: Immunology and Serology (1)
Continues Immunology and Serology. Provides clinical experience in the performance of serologic testing. Emphasizes the comparison and contrast of methodology with Immunology and Serology. Credits: 1, Hours: (0/0/3/0), Prereq: minimum C in MLT-245, MLT-255, MLT-260 and MLT-290; Arts & Sciences Elective Code: B

MLT-287 Clinical Practicum: Hematology (4)
Continues Hematology and Advanced Hematology. Provides clinical experience in specimen collection and performance of routine hematology and coagulation tests. Stresses comparison and

contrast with methodologies of Hematology and Advanced Hematology. Provides experience with automation. Credits: 4, Hours: (1/0/9/0), Prereq: minimum C in MLT-245, MLT-255, MLT-260 and MLT-290; Arts & Sciences Elective Code: B

MLT-288 Clinical Practicum: Microbiology (4)
Continues Clinical Microbiology. Provides experience in bacteriologic, mycotic and parasitologic studies in a clinical setting. Examines practices and procedure of Clinical Microbiology as compared and contrasted with clinical practice. Credits: 4, Hours: (1/0/9/0), Prereq: minimum C in MLT-283, MLT-286, MLT-287, MLT-293, MLT-297; Arts & Sciences Elective Code: B

MLT-290 Clinical Seminar and Review (2)
Reviews all MLT subjects. Presents case studies and provides class time for interactive review of didactic materials and preparation for the comprehensive examination. Credits: 2, Hours: (2/0/0/0), Prereq: minimum C in MLT-230, MLT-233, MLT-270, and in either CHM-110/CHM-111 or in CHM-132; Arts & Sciences Elective Code: B

MLT-291 Lab Survey and Review (1)
Reviews all departments of the laboratory toward the end of the clinical practicum. Provides review of didactic materials in preparation for the comprehensive examination. Includes clinic time for review or additional experience in any or all departments of the laboratory. Credits: 1, Hours: (0/0/48/0), Prereq: minimum C in MLT-283, MLT-286, MLT-287, MLT-293 and MLT-297; Arts & Sciences Elective Code: B

MLT-293 Clinical Practicum: Immunohematology (3)
Continues Immunohematology. Provides clinical experience in specimen collection and performance of immunohematologic tests. Stresses comparison and contrast with methodology of Immunohematology. Credits: 3, Hours: (0/0/144/0), Prereq: minimum C in MLT-245, MLT-255, MLT-260 and MLT-290; Arts & Sciences Elective Code: B

MLT-297 Clinical Practicum: Chemistry (3)
Continues Clinical Chemistry. Provides clinical experience in specimen collection and performance of clinical chemistry tests. Compares and contrasts with methodology of Clinical Chemistry. Emphasizes the use of automatic equipment. Credits: 3, Hours: (0/0/144/0), Prereq: minimum C in MLT-245, MLT-255, MLT-260 and MLT-290; Arts & Sciences Elective Code: B

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-105 Audio Production (3)
Introduces audio production in the broadcast and file industry. Presents basic, intermediate, and advanced audio production principles and techniques. Learn how to operate the audio console, microphones, speakers, and sound recording

devices. Add prerecorded music and sound effects utilizing audio editing software. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MMS-111 Video Production I (3)
Introduces basic principles and techniques used in video and film production. Focuses on producing, scriptwriting, directing, shooting, and editing through in-class demonstrations, lectures, and hands-on projects. Completes digital medial projects individually and in groups with an emphasis on storytelling. Enhances the critique process by screening videos in class. Credits: 3, Hours: (3/0/0/0), 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-165 Media History (3)
Teaches the historical development of media in the United States from the earliest forms to the digital age. Explores the role of global media and its effect on culture and diverse audiences. Evaluates media messages using media literacy skills. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MMS-209 Video Production II (3)
Focuses on advanced directing, shooting, and editing techniques used in video and film production. Evaluates a college or community need for a video, plans a script and shooting schedule, maintains a shot sheet, and edits the final product. Reviews styles of digital media professionals. Credits: 3, Hours: (3/0/0/0), Prereq: MMS-111; 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)
Covers proper operation of remote video and audio equipment. Emphasizes script writing and videotape editing. Provides opportunity for final projects to be televised on the campus 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 students 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-241 Public Relations and Marketing (3)
Examines the history and structure of the public relations industry. Analyzes the First Amendment and explores ethical issues. Students prepare a promotional campaign. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

MMS-920 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

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, transposition, 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 repertory. 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 repertory. May be repeated for credit. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

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 the notation of pitch, rhythm, meter, scales, key signatures, intervals, and chords. Intended for students with strong interest in music but with limited or no music reading skills. Credits: 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-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-138 Jazz Improvisation (3)
Introduces 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, rhythmic elements and small combo performance. Recommended for both instrumentalists and vocalists. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

MUS-139 Jazz Improvisation II (3)
Builds on skills learned in Jazz Improvisation with emphasis placed on applying advanced improvisation techniques in small combo performance practice. Once passed, this course may be re-

peated two times. Credits: 3, Hours: (2/2/0/0), Prereq: MUS-138; 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-152 Vocal Ensemble (1)
Provides auditioned members an opportunity to sing a variety of choral styles from traditional to contemporary arrangements. May be repeated for credit. Credits: 1, Hours: (0/0/3/0), 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-207 Introduction to Film Music (3.00)
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-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-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)
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

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: (0/2-4/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising faculty member and dean

NET: Computer Networking

NET-119 Virtualization and Cloud Concepts (2)
Introduces learners to the topics of cloud and virtualization. Teaches the components, types, benefits, and uses of virtualization. Explores the role virtualization plays in the cloud, software-defined datacenter, and the imaging/deployment of computers. Enhances and reinforces understanding of the material covered through low-level laboratory exercises. Credits: 2, Hours: (1/2/0/0), Prereq: minimum C- in NET-130; Arts & Sciences Elective Code: B

NET-130 Computer Concepts (3)
Introduces the operation of computers from a hardware and software perspective. Teaches the basic elements of a computer system and develops troubleshooting skills for advanced courses. Covers system boards, storage drives, memory, power supplies, and software considerations (such as BIOS, drivers and operating systems) necessary to understanding how computers work. Enhances and reinforces understanding of the material covered through low-level laboratory exercises. Offers A+ certification topics for the benefit of those who plan to take the CompTIA exam. Credits: 3, Hours: (2/2/0/0), Prereq: ENG-101, RDG-095; Arts & Sciences Elective Code: B

NET-165 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: minimum C- in NET-130; 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 (3.00)
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: minimum C- in NET-235; Arts & Sciences Elective Code: B

NET-237 CCNA Cisco 3 (3.00)
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-252 Healthcare IT Technician (3)
Introduces the field of healthcare information systems. Includes a comprehensive view of HIT by examining healthcare regulatory requirements and the functions of a healthcare organization, including its medical business operations, IT hardware, software, networking and security. Follows CompTIA Healthcare IT Technician (HIT-001) exam objectives. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C- in NET-174 and NET-235; Arts & Sciences Elective Code: B

NET-323 Windows Network Management (3)
Explains administrative duties for Windows Server 2012. Includes installing, configuring and maintaining client and server operating systems, monitoring performance and supporting users, evaluating different versions of Server 2012, 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-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: MAT-102 or MAT-708, minimum C- in NET-561; 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: minimum C- in NET-235; 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: minimum C- in NET-174; 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: (2/2/0/0), Prereq: MAT-102 or MAT-708, minimum C- in 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 intruder detection. This course begins student preparation for the Security+ exam. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C- in NET-630; Arts & Sciences Elective Code: B

NET-616 VMware VCP (3)
Emphasizes virtual network design and implementation, in an enterprise environment. Includes basic storage area networks, high availability design, virtual system management, virtual switching and virtualization security. Covers the vSphere VMware Certified professional (VCP) exam domains. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C- in 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 configuration, 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), Coreq: NET-600; 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: minimum grade C- in NET-618; Arts & Sciences Elective Code: B

NET-620 VMWare Optimize and Scale (3)
Emphasizes virtual network design and implementation, in an enterprise environment. Includes basic storage area networks, high availability design, virtual system management, virtual switching and virtualization security. Covers the vSphere VMware Certified professional (VCP) exam domains. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C- in NET-616; 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 current 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 impact they have on information technology practices. Credits: 3, Hours: (3/0/0/0), Prereq: either COM-723, ENG-101 or ENG-105, minimum C- in NET-165; 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)
Focuses on hands-on projects related to the computer support specialist role. Improves proficiency in providing personal computer support by troubleshooting real-life scenarios including specification/management considerations while using customer service skills. Includes lab projects with local organizations. Credits: 3, Hours: (2/2/0/0), Prereq: minimum C- in MKT-350; Arts & Sciences Elective Code: B

NET-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

NET-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

OTA: Occupational Therapy Assistant

OTA-101 Foundations of Occupational Therapy (2)
Introduces the philosophical, ethical and theoretical concepts of the current practice of occupational therapy. Provides an overview of the role of the OTR and COTA in the processes of patient evaluation, treatment planning, implementation and discharge. Presents note writing and goal development. Credits: 2, Hours: (2/0/0/0), 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 appraisals, and policies and procedures. Discusses state and professional association regulations and legal/ethical issues. Explores reimbursement systems and their impacts 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-206 Community Health and Special Populations (3)

Provides knowledge and instruction for the intervention, prevention, and maintenance for optimal occupational performance in individuals and populations. Includes clinical observations. Credits: 3, Hours: (3/0/0/0), Prereq: 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 grading and adapting. Presents information on safety in the clinic with basic health skills performance. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

OTA-211 Pathophysiology for the OTA (4)

Presents clinical disorders and diseases commonly treated in the field of occupational therapy. Covers pathology, etiology, diagnosis, signs, symptoms and prognosis. Credits: 4, Hours: (4/0/0/0), Prereq: OTA-101, OTA-207 and either 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-101, OTA-207 and either BIO-161 or BIO-168/173 or BIO-177/180; Arts & Sciences Elective Code: B

OTA-213 Occupational Development (2)

Presents normal physical and psychosocial development processes which affect an individual throughout the lifespan. Emphasis on integration of physical, psychosocial, cognitive, social and cultural aspects of occupational development. Clinic observation experience is included. Credits: 2, Hours: (2/0/0/0), Coreq: OTA-101, OTA-207, PSY-111; Arts & Sciences Elective Code: B

OTA-306 OT Methods II (3)

Presents evaluations and treatment methods for individuals used in occupational therapy. Emphasis on the instruction of compensatory techniques for activities of daily living and independent activities of daily living. Presents treatment-planning skills necessary for clinical reasoning in patient care. Documentation of the treatment process is presented. Credits: 3, Hours: (2/2/0/0), Prereq: OTA-207; Arts & Sciences Elective Code: B

OTA-308 Physical Dysfunction I (4)

Presents theory, evaluation and treatment technique for physical and cognitive occupational dysfunction. Credits: 4, Hours: (3/2/0/0), Prereq: OTA-101, 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 cog-

nitive occupational dysfunction. Credits: 4, Hours: (3/2/0/0), Coreq: OTA-308; Arts & Sciences Elective Code: B

OTA-405 Psychosocial Dysfunction (4)

Presents diagnosis, symptomology and etiology of psychosocial dysfunction. Discusses theory, evaluation, and treatment techniques for individuals and groups with psychosocial impairments. Provides knowledge of OTR and COTA role delineation in psychiatric settings. Credits: 4, Hours: (4/0/0/0), Prereq: OTA-213; Coreq: OTA-211; Arts & Sciences Elective Code: B

OTA-406 OT Methods III (3)

Presents information for clinical skills in the areas of wheelchair selection and positioning. Presents the fabrication of splints, use of orthotics and kinesio-taping. Assisted technology, low vision treatment and physical agent modalities are discussed. Presents treatment options for various pathology groups and specialty treatment programs. Credits: 3, Hours: (2/2/0/0), Prereq: OTA-306; Arts & Sciences Elective Code: B

OTA-409 Professional Development (2)

Explores state and professional association regulations and requirements, licensure and certification exam preparation, OT/OTA role delineation, and job search and references. Seminars focus on best practices and professional preparation. Credits: 2, Hours: (2/0/0/0), Prereq: OTA-850; Coreq: OTA-852, OTA-854; Arts & Sciences Elective Code: B

OTA-411 Geriatric Interventions for the OTA (1.5)

Provides knowledge and skills for assessment and treatment of the geriatric population. Credits: 1.5, Hours: (1.5/0/0/0), Prereq: OTA-213, OTA-306, OTA-309; Arts & Sciences Elective Code: B

OTA-412 Pediatric Interventions for the OTA (3)

Provides knowledge and skills for the assessment, intervention planning and treatment for the unique needs of the pediatric population. Credits: 3, Hours: (3/0/0/0), Prereq: OTA-213, OTA-306; Arts & Sciences Elective Code: B

OTA-850 Occupational Therapy Assistant Fieldwork I-A (1)

Provides fieldwork and seminar experiences to develop observational, interpersonal, and communication abilities. Includes involvement with disabled and non-disabled individuals. Credits: 1, Hours: (0.5/0/1.5/0), Prereq: OTA-213; Coreq: OTA-211, OTA-212, OTA-306; 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: (.5/0/1.5/0), Prereq: OTA-213, OTA-211, OTA-212, OTA-306; Arts & Sciences Elective Code: B

OTA-852 Occupational Therapy Assistant Fieldwork II-A (6)

Provides a supervised Level II fieldwork experience emphasizing physical dysfunction, psycho-

social or specialty practices in occupational therapy. Offers experience to develope expectations of an entry-level occupational therapy assistant. Credits: 6, Hours: (0/0/18/0), Prereq: OTA-851; Coreq: OTA-409, OTA-854; 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)

Provides a supervised Level II fieldwork experience emphasizing physical dysfunction, dysfunction, psychosocial or specialty practices in occupational therapy. Offers experience to develop expectations of an entry-level occupational therapy assistant. Credits: 6, Hours: (0/0/18/0), Coreq: OTA-409, OTA-852; Arts & Sciences Elective Code: B

OTA-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

PEA: Physical Education Activity

PEA-102 Aerobic Fitness I (1)

Focuses on the development of cardiovascular fitness through structured individual and group exercise activities. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

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-154 Racquetball I (1)

Introduces rules, strategies and shots involved in the game of racquetball. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

PEA-162 Speed and Conditioning I (1)

Focuses on the coordination of muscular movements for improved motor skill through structured individual and group exercise activities. 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

PEA-187 Weight Training I (1)

Provides the basics of weight conditioning along with general workout opportunity. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

PEA-287 Weight Training II (1)
Provides further experiences in weight conditioning, such as circuit training and variation in the training regime. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: A

PEC: Coaching Officiating

PEC-111 Techniques and Theory of Coaching (2)
Introduces the philosophical and ethical issues in athletic coaching. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: A

PEC-116 Athletic Development and Human Growth (2)
Explains basic concepts of sports psychology. Focuses on improving human skill, enhancing group effort and understanding the reduction of stress. Encompasses some of the diverse topic areas important to both psychologists in general and those focused 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, treatment procedures and 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. Emphasizes 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-148 Theory of Coaching Basketball (2)
Introduces the coaching profession with specific emphasis on basketball 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

PEH: General Physical Education and Health

PEH-111 Personal Wellness (3)
Emphasizes the importance of personal responsibility in health and wellness. Focuses on personal decision making in cardiovascular fitness, muscular fitness, nutrition and weight control, as well as aging and health. Reinforces improvement and maintaining quality of life through health and healthy decisions. 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 behavioral changes as they relate to exercise and health. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PEH-160 Fundamentals of Health Coaching (3)
Reviews health coaching and its relevance in today's health care industry. Includes information on coaching psychology, insight on weight management psychology, the physiology of obesity, techniques for lifestyle coaching, and the relationship between exercise and nutrition for weight control. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PEH-162 Introduction to Physical Education (3)
Introduces 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-165 Introduction to Complementary and Alternative Medicine (3)
Discusses the most commonly used complementary and alternative medicine modalities in the U.S. Focuses on the five domains of complementary and alternative medicine: alternative medical systems (traditional Chinese medicine, ayurveda, homeopathy, naturopathy), mind-body medicine (techniques designed to facilitate the mind's capacity to affect the physical body's functions in health and illness, such as meditation and yoga), manual therapies (massage, chiropractic), energy-based therapies (biofeedback, acupuncture), and biologically-based therapies (herbal medicine, dietary supplements). Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PEH-170 Principles of Weight Training (3)
Reviews the anatomical and physiological processes of muscle growth and development, and the effects of strength training on those processes. Introduces fundamental principles and techniques of strength training, and applies those principles toward personal fitness development and development of programs for health and performance. Credits: 3, Hours: (3/0/0/0), Prereq: minimum C- in EXS-120 or BIO-168; 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 population activity and general performance enhancement. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PEH-255 Principles of Sports 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-270 Exercise Prescription for Special Populations (3)
Provides practical information on exercise for people with special diseases and disabilities. Discusses each unique condition, effects of the condition on the exercise response, effects of exercise training on the condition, and recommendations for exercise testing and programming. 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: Permission of instructor and dean

PEH-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

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: (.5/1/0/0), 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: (.5/1/0/0), 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: (.5/1/0/0), 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: (.5/1/0/0), 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: (.5/1/0/0), 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: (.5/1/0/0), 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-215 Varsity Baseball II (1)
Designed to give credit for knowledge and skills gained through varsity sports baseball participation during an academic year. Credits: 1, Hours: (.5/1/0/0), 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-221 Varsity Basketball II, Men (1)
Designed to give credit for knowledge and skills gained through varsity sports basketball participation during an academic year. Credits: 1, Hours: (.5/1/0/0), 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-222 Varsity Basketball II, Women (1)
Designed to give credit for knowledge and skills gained through varsity sports basketball participation during an academic year. Credits: 1, Hours: (.5/1/0/0), 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-240 Varsity Golf II (1)
Designed to give credit for knowledge and skills gained through varsity sports golf participation during an academic year. Credits: 1, Hours: (.5/1/0/0), 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-260 Varsity Softball II (1)
Designed to give credit for knowledge and skills gained through varsity sports softball participation during an academic year. Credits: 1, Hours: (.5/1/0/0), Arts & Sciences Elective Code: A; Comments: Students may earn one credit per year for each varsity sport in which they partici-

pate. Students in multiple varsity sports may earn four credits total in Varsity sports participation courses.

PEV-270 Varsity Volleyball II (1)
Designed to give credit for knowledge and skills gained through varsity sports volleyball participation during an academic year. Credits: 1, Hours: (.5/1/0/0), 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.

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, epistomology, 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 development 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, conservativism, 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-154 Pharmacology for Pharmacy Technician I (2)
Provides an understanding of pharmacology terms as well as working knowledge of pharmacologic therapies used to treat common diseases. Teaches the side effects of prescription and non-prescription medications required by a pharmacy technician. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

PHR-156 Pharmacology for Pharmacy Technician II (2)
Builds upon the concepts of PHR-154. Provides understanding and knowledge base of pharmacologic therapies used to treat complex diseases. Teaches the unique knowledge base needed by pharmacy technicians. Credits: 2, Hours: (2/0/0/0), Prereq: PHR-154; Arts & Sciences Elective Code: B

PHR-165 Pharmacy Technician Calculations and Compounding With Lab (4)
Introduces calculations and conversions necessary to prepare doses and medication products. Teaches common sterile and non-sterile compounding techniques. Credits: 4, Hours: (3/2/0/0), Arts & Sciences Elective Code: B

PHR-171 Pharmacy Technician (6.5)
Provides the knowledge and skills necessary for employment as a pharmacy technician in a retail, hospital or clinic pharmacy while 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 the importance of making informed, intelligent decisions. Offers experience alongside a pharmacist to provide medication and other types of health care products to patients. Designed to prepare learners for the National Pharmacy Technician Certification Exam. Credits: 6.5, Hours: (6/1/0/0), Prereq: MAT-102; Coreq: PHR-172; Arts & Sciences Elective Code: B

PHR-172 Pharmacy Technician Clinical (1)
Provides opportunities for observation and supervised participation in hospital and retail pharmacy settings. Credits: 1, Hours: (0/0/3/0), Prereq: PHR-154; Coreq: PHR-175; Arts & Sciences Elective Code: B

PHR-175 Pharmacy Technician Operations and Regulations (4)
Provides operational responsibilities required of the pharmacy technician. Integrates hands-on day-to-day tasks performed in common pharmacy practice settings. Credits: 4, Hours: (3/2/0/0), Prereq: PHR-165; Coreq: PHR-172; Arts & Sciences Elective Code: B

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. Incorporates laboratories and observations. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: A

PHS-170 Physical Geology (3)
Explores how natural forces shape our planet and how geology is tied together through the theory of plate tectonics. Covers common earth materials, history of the Earth, geological resources and geologic hazards. 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. Explores common earth materials, volcanoes, earthquakes, flooding, water pollution, mining, and climate change. 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. Examines 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. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PHS-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: Permission of instructor and dean

PHS-928 Independent Study (1)
Allows for a special concentration of study under the guidance of a faculty member. Requires an independent study contract. May be taken more than once. 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. Provides opportunities for measurements and application of concepts in a lab setting. Credits: 3, Hours: (2/2/0/0), Prereq: MAT-707 or MAT-716 or MAT-102; Arts & Sciences Elective Code: A

PHY-162 College Physics I (4)
Emphasizes introductory physics concepts and methods of scientific reasoning. Introduces the structure and properties of matter, descriptions of motion, Newton's Laws, conservation laws, rotational motion, fluid statics, fluid dynamics and thermodynamics. 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. Includes static and current electricity, electromagnetism, wave motion, optics, atomic and nuclear physics. Integrates applications to the life sciences 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)
Introduces the basic science of applied physics. Teaches motion, Newton's laws, energy and conservation laws, physics of matter, temperature and heat, waves and sound, and optics through lecture, reading, online presentation and reference material, and lab demonstration in class. Credits: 2, Hours: (1/2/0/0), Prereq: MAT-232; Arts & Sciences Elective Code: B

PHY-182 Applied Physics II (3)
Studies mechanical power transmission, energy convertors, fluid power and precision measuring instruments, 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 technology. Includes measurement and vectors, static equilibrium, torque, uniformly accelerated motion, Newton's laws, friction, work, energy and power, and simple machines. Emphasizes problem solving, teamwork and data collection using PC-based data acquisition equipment. Credits: 3, Hours: (2/2/0/0), Prereq: MAT-745 or both MAT-103 and MAT-707, depending on program; Arts & Sciences Elective Code: B

PHY-192 Physics II (3)
Continues Physics I with topics useful to mechanical engineering technology. 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, teamwork and 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. Covers 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 thermo-dynamics, static and current electricity, electro-magnetism, 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), Prereq: MAT-746; Arts & Sciences Elective Code: B

PHY-232 Technical Physics II (3)
Subjects studied include matter, fluids, tempera-ture and heat transfer, properties of gases, wave motion and sound, light, reflection and refraction, color, and modern physics. Concepts are empha-sized through laboratory and lecture. Credits: 3, Hours: (2/2/0/0), Prereq: PHY-230; Arts & Sci-ences Elective Code: B

PHY-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guid-ance 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: Permission of instructor and dean

PLU: Plumbing

PLU-101 Pipefitting for Maintenance Trades (2)
Introduces plumbing definitions, plumbing work-manship, flushometer valves, and drainage fix-ture units. Focuses on plumbing code require-ments that may be encountered within industrial maintenance. Emphasizes pipe joining tech-niques through a number of pipe projects using a variety of materials and assembly methods. Ex-plores concepts of applied math, safety, and pipe fitting techniques in a hands-on lab. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

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 com-plete 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 Uni-form 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, wa-ter distribution systems, natural gas supply pip-ing, venting, and chimney systems in accordance with the Uniform Plumbing Code, state and local amendments. Credits: 8, Hours: (6/4/0/0), Pre-req: 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 fit-tings. At the completion of the course, the stu-dent will be able to identify the common materi-als used in plumbing and gas piping systems, identify and perform common joining methods used on piping materials, and maintain a job log of time spent and materials used for each of the piping assignments. 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 Plumb-ing 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 Plumbing Plan and Print Reading II (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 (3.00)
Covers plumbing and shop safety, plumbing and pipefitting theory, plan and print reading, plumb-ing 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 lab 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 expe-rience 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-228 Foundations of Nursing I (6)
Focuses on the care of older adults with health alterations that require medical interventions. Emphasizes knowledge, competencies and skills needed to provide safe and evidence-based care for the patient with health alterations. Encour-ages students to apply the nursing process as a decision-making framework to assist in develop-ing effective clinical judgment skills. Integrates pathophysiology, pharmacology and nutrition in the selected disease states. Integrates evi-dence-based practice, patient-centered care, safety, cultural sensitivity, interdisciplinary col-laboration and professionalism throughout the course. Provides students with the opportunity to apply course concepts, demonstrate skills, and care for older adult patients in supervised labor-atory and/or simulation experiences. Emphasizes patient safety, application of the nursing process, and development of communication skills within the scope of practice of the PN. Credits: 6, Hours: (5/2/0/0), Prereq: BIO-151, minimum B- in BIO-168, BIO-173 and HSC-189; Coreq: none; Arts & Sciences Elective Code: B

PNN-229 Foundations of Nursing II (4)
Focuses on the care of adult patients with health alterations that require medical and/or surgical intervention. Provides a decision-making frame-work, through the nursing process, to assist stu-dents in developing effective clinical judgment skills. Integrates pathophysiology, pharmacology and nutrition in the selected disease states, with concepts of evidenced-based practice, pa-tient-centered care, safety and professionalism. Credits: 4, Hours: (3.25/1.5/0/0), Prereq: PNN-228, PNN-721, PNN-280, PNN-293; Arts & Sciences Elective Code: B

PNN-280 Pharmacology I (2)
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. Fo-cuses on basic pharmacological calculation con-cepts for safe medication administration. Credits: 2, Hours: (2/0/0/0), Prereq: minimum B- in HSC-189; Arts & Sciences Elective Code: B

PNN-282 Pharmacology II (2)
Provides second semester nursing students en-rolled in the Practical and Associate Degree Nursing programs with additional pharmacologi-cal tools. Builds on pharmacological nursing using the nursing process as the framework in-troduced in Pharmacology I. Discusses actions, interactions, adverse effects, nursing implications for drugs for multiple body systems and differ-ences across the lifespan. Progresses with dos-age calculation through advanced pharmacolog-ical calculations for safe medication administra-tion. Credits: 2, Hours: (2/0/0/0), Prereq: mini-mum B- in PNN-280 and in PNN-293; Arts & Sci-ences Elective Code: B

PNN-293 Health Assessment (3)
Introduces health history taking, physical as-sessment and documentation required for pro-fessional nursing practice. Integrates focused and comprehensive health assessments, utilizing professional behavior, communication and col-

laborative teamwork, with collection and analysis of data, which is essential in planning safe and effective care. Emphasizes 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: 3, Hours: (2.5/1/0/0), Prereq: Minimum B- in HSC-189; Arts & Sciences Elective Code: B

PNN-446 Nursing Care of the Growing Family (4)
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: 4, Hours: (3.75/.5/0/0), Prereq: PNN-228, PNN-721; Arts & Sciences Elective Code: B

PNN-721 Foundations of Nursing Clinical I (2)
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: 2, Hours: (0/0/6/0), Prereq: minimum B- in HSC-189, PNN-293, pass the pass/fail lab component of PNN-228, earn 78% total course percentage in PNN-228 by midterm; Arts & Sciences Elective Code: B

PNN-723 Foundations of Nursing Clinical II (2)
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: 2, Hours: (0/0/6/0), Prereq: PNN-228, PNN-721, pass the pass/fail lab component of PNN-228, earn 79.5% total course point percentage in PNN-229 by midterm; 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 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

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-111 American National Government (3)
Studies American policy based on a close examination of the processes of decision making. Emphasis is placed on voting behavior and citizen interaction within the system. 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-103 Introduction to Law (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 of ethics and regulations of legal professions. Introduces the substantive law and skill areas students will encounter in subsequent legal courses. Examines the relationship between different kinds of legal systems and between social sciences and law. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

PRL-116 Fundamentals of Legal Research and Writing (3)
Focuses on using a law library and internet-based legal resources to solve legal problems including research strategies, analysis and application of law, and communication of research results orally and in written legal memoranda. Presents legal document preparation software, and the ethical duty of honesty and candor. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

PRL-117 Advanced Legal Research and Writing (3)
Provides instruction in internet-based legal resources and explores multiple methods to address complex legal research problems. Explores utilizing research results in appellate briefs and other advocacy legal documents. Instructs students in the use of legal document preparation software and the ethical duty of honesty and candor. Provides instruction on navigating Iowa's judicial website including the electronic filing system (EDMS). Credits: 3, Hours: (3/0/0/0), Prereq: PRL-116; Arts & Sciences Elective Code: B

PRL-121 Investigation for Paralegals (3)
Presents 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 probativeness, sufficiency and admissibility of facts for trial. Explores the Rules of Evidence and their application to the investigation process. Teaches the ethical duty of confidentiality and attorney-client privilege as it relates to investigations. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

PRL-133 Torts (3)
Provides instruction on the principles of tort law. Explores differences between intentional torts, negligence, and strict liability. Emphasizes the use and interpretation of primary and secondary sources of law to understand similarities and differences of torts. Explores and discusses the common use of the contingency fee agreement in tort law. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

PRL-143 Business Organization Law (3)
Provides instruction in the law of legal entities used in conducting business. Explores the similarities and differences between sole proprietorships, partnerships, corporations, limited liability companies, and other types of business organizations. Examines the process necessary for the creation and existence of various business organizations. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

PRL-151 Real Estate Law (3)
Studies the law of real property. Examines common types of real estate transactions and conveyances. Explores the history of the real property system used in the United States. Offers available methods to finance real estate transactions. Explores title examination and title insurance. Teaches the ethical duty of competence. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

PRL-161 Family Law (3)
Introduces the laws of marriage and divorce. Explores the historical context of divorce in the

United States. Addresses the divorce process including child custody, child support, spousal support, property division, and jurisdiction. Explores paternity, adoption, and juvenile matters, and the ethical duty of conflict of interest. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

PRL-166 Estate Planning/Administration (3)
Provides instruction in the methods available for lifetime and testamentary estate planning. Provides instruction in the estate probate process. Examines the role of the Probate Court in the administration of estates. Examines the tax benefits and consequences associated with estate planning. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

PRL-171 Administrative Law (3)
Explores concepts of administration law and procedure at the federal and state levels. Students will learn the paralegal's role in the administrative process. Topics include agency discretion, delegation, agency rule making, agency investigations, formal adjudications and agency accountability. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

PRL-174 Contracts (3)
Teaches the principles of contract law. Explores the required elements necessary for the creation of enforceable contracts and remedies available for breach of contract. Integrates the preparation and interpretation of contracts. Examines provisions of the Uniform Commercial Code relevant to contract law. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

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), Arts & Sciences Elective Code: B

PRL-186 Employment Law Topics (3)
Studies the legal aspects of the employer-employee relationship. Examines federal labor laws, civil rights laws, privacy and harassment laws, and the Americans With Disabilities Act. Examines human resource management issues related to employment. Addresses the role of various administrative agencies in their regulation of employment. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

PRL-192 Criminal Law and Procedure for the Paralegal (3)
Introduces the basic principles of criminal law and criminal procedure. Examines common law and statutory law. Covers the Iowa Rules of Criminal Procedure and examines differences between Iowa and other jurisdictions. Identifies the processes required to prepare a criminal case for trial. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

PRL-193 Constitutional Law (3)
Introduces the underlying political structure of the American judiciary. Explores the political and legal foundations for civil rights and civil liberties. Develops an appreciation for interpreting and applying the Constitution as an expression of our deepest democratic values. Discusses the development of civil rights and liberties under the Bill of Rights, the Fourteenth Amendment, and legislative enactments. Examines the political and legal foundations of privacy and equality in the American political system. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: B

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: B

PRL-932 Internship (3)
Provides an opportunity to use and refine paralegal skills in a work setting with the guidance of legal professionals. Integrates monthly seminars throughout the internship semester to share and gain perspective on experiences. Credits: 3, Hours: (0/0/0/12), Prereq: PRL-101; Arts & Sciences Elective Code: B

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), 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 developmental research methods; genetics; prenatal 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)
Provides an introduction to psychological, biological, cultural and legal aspects of human sexuality. Examines scientific approaches to the study of sexual anatomy and physiology, conception and contraception, sexual health and illness, sexual development across the lifespan, consensual and nonconsensual behavior, gender, sexual orientation, sexual diversity, intimate relationships, and the sexual marketplace. 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 contact. 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)
Provides an overview of the physical therapy profession and the national organization, APTA. Discusses the role of the PTA including legal and ethical practice, as well as evidence-based practice. Explores reaction to disability and considers communication strategies. Discusses the patient care process and the treatment of diverse populations. Includes concepts of learning self and peer assessments and goal setting. Requires three mandatory face-to-face sessions with the remainder of the course work completed online. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

PTA-103 PTA Patient Assessment (2)
Explores the concept of patient assessment, beginning with the patient interview and including a variety of tests and measures that are performed by the physical therapist assistant. Addresses infection control and documentation. Includes discussion, laboratory practice and performance testing for selected tests and measures. Credits: 2, Hours: (1/2/0/0), 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: 3, Hours: (2/2/0/0), Prereq: PTA-103, PTA-120, PTA-140; 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), 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)
Presents 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: BIO-168, BIO-173, PTA-120; 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, and palpation. Introduces basic exercise choices as they relate to results of assessment procedures. Includes laboratory demonstration and practice of each skill. Credits: 3, Hours: (2/2/0/0), Prereq: BIO-168, BIO-173, PTA-103, PTA-110, PTA-120, PTA-150, PTA-196; Arts & Sciences Elective Code: B

PTA-161 PTA Procedures II (3)
Introduces additional assessment skills performed by the PTA. Provides an introduction to therapeutic exercise principles. Covers theory and application of exercise techniques including range of motion, strengthening, flexibility, and aerobic exercise. Includes laboratory demonstration and practice of each skill. Credits: 3, Hours: (2/2/0/0), Prereq: BIO-168, BIO-173, PTA-103, PTA-110, PTA-120, PTA-150, PTA-196; Coreq: PTA-160; Arts & Sciences Elective Code: B

PTA-196 PTA Modalities (4)
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. Discusses mechanisms of pain management and incorporates them into patient interventions. Covers patient preparation and assessment, the healing process, pain assessment, superficial and deep heat, cold, intermittent compression pumps/edema management strategies, therapeutic massage, spinal traction, 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: 4, Hours: (3/2/0/0), Prereq: PTA-120; Arts & Sciences Elective Code: B

PTA-203 PTA Therapeutic Exercise (2)
Introduces therapeutic exercise with a focus on flexibility and strengthening. Reviews muscle function at each joint. Introduces concepts related to exercise choice and progression. Lab will include clinical reasoning, therapeutic exercise instruction and patient/client education using role playing and simulated patient cases. Credits: 2, Hours: (1/2/0/0), Prereq: PTA-120; Arts & Sciences Elective Code: B

PTA-215 Orthopedic Issues (4)
Provides application of clinical problem solving for patients with a variety of orthopedic conditions. Covers therapeutic interventions directed to specific impairments, activity limitations, and participation restrictions as well as precautions, contraindications, and special considerations based on diagnosis. Introduces the concept of following a physician protocol while working within the plan of care developed by the PT. Includes application of course concepts to patient assessment, interventions, progression, and patient and family education. Credits: 4, Hours: (3/2/0/0), Prereq: minimum C in PTA-301; Arts & Sciences Elective Code: B

PTA-232 Rehab for Medical Conditions (4)
Provides application of clinical problem solving for patients with a variety of general medical conditions. Covers therapeutic exercise directed to specific impairments, activity limitations, and participation restrictions as well as special considerations for a variety of medical diagnoses. Includes application of course concepts to patient assessment and interventions, patient progression, and patient and family education. Credits: 4, Hours: (3/2/0/0), Prereq: minimum C in PTA-301; Arts & Sciences Elective Code: B

PTA-241 Neurology for PTA (4)
Provides application of clinical problem solving for patients with a variety of neurological conditions, including pediatric and adult populations. Covers therapeutic interventions directed to specific impairments, activity limitations, and participation restrictions as well as precautions and special considerations based on diagnosis. Includes application of course concepts to patient assessment, interventions, progression, and patient and family education. Credits: 4, Hours: (3/2/0/0), Prereq: minimum C in 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. Reviews rules and regulations governing PTA practice in Iowa, and the licensure application and preparation process. Discusses quality assurance, chart audits, varieties 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. Integrates two mandatory face-to-face sessions with the remainder of the course material covered online. Credits: 2, Hours: (2/0/0/0), Prereq: PTA-215, PTA-232, PTA-241, PTA-301, PTA-302; Coreq: PTA-432; Arts & Sciences Elective Code: B; Comments: Involves a component of independent study as well as classroom activities

PTA-301 PTA Clinic I (2)
Prepares the student for clinical experiences and practice. Covers clinical reasoning, communication, ethical and legal guidelines, risk management, professionalism, supervision requirements, reimbursement and documentation as they relate to clinical practice. Explores the concepts of the PT/PTA and CI/student teams within a clinical setting and the process for student evaluation of clinical performance. Includes application of new concepts and skills learned in previous PTA course work to case studies and simulated patient care in selected clinical settings. Credits: 2, Hours: (.5/0/4.5/0), Prereq: BIO-168, BIO-173, PTA-103, PTA-110, PTA-120, PTA-150, PTA-196; Coreq: PTA-160, PTA-161; Arts & Sciences Elective Code: B

PTA-302 PTA Clinic II (2)
Includes 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 clinical reasoning, communication, ethical and legal guidelines, risk management, professionalism, supervision requirements, evidence based practice, reimbursement, documentation and career development. Credits: 2, Hours: (.5/0/4.5/0), Prereq: PTA-301; Arts & Sciences Elective Code: B

PTA-432 PTA Clinic III (6)
Provides a full-time, off-site clinical experience in which students care for patients under the supervision of a licensed PT or PTA. Develops proficiency in students who apply previously learned concepts and skills to patient interactions and interventions. Expands clinical problem solving and critical thinking skills related to patient care. Credits: 6, Hours: (0/0/18/0), Prereq: minimum C in PTA-215, PTA-232, PTA-241, PTA-301, PTA-302; Coreq: PTA-250; Arts & Sciences Elective Code: B

PTA-433 PTA Clinic IV (6)
Provides a full-time, off-site clinical experience for students to care for patients under the supervision of a licensed PT or PTA. Develops student proficiency in patient treatment interventions and interactions through continued application of previously learned concepts and skills. Prepares students for entry-level practice through advanced clinical problem solving and critical thinking related to patient care. Credits: 6, Hours: (0/0/18/0), Prereq: minimum C in PTA-215, PTA-232, PTA-241, PTA-301, PTA-302, PTA-432; Coreq: PTA-250; Arts & Sciences Elective Code: B

PTA-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

PWL: Powerline

PWL-326 Electrical Distribution Systems (2)
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. 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: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

RCP: Respiratory Therapy

RCP-101 Respiratory Anatomy and Physiology Enrichment (1)
Provides entry level Respiratory Therapist students with the necessary A&P knowledge of the cardiopulmonary system. Emphasizes concepts and systems introduced in BIO-161, enabling students to better recognize, assess, and identify those systems vital to Respiratory Therapy. Credits: 1, Hours: (1/0/0/0), Prereq: minimum C- in BIO-161; Arts & Sciences Elective Code: B

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 assessment, enabling the student to identify and document any abnormalities. Credits: 1, Hours: (0.5/1/0/0), Prereq: minimum C- in BIO-161 or in both BIO-168 and BIO-173; Arts & Sciences Elective Code: B

RCP-212 Introduction to Respiratory Care (3.5)
Provides the theory, equipment operation and application with laboratory exercises in airway management techniques, humidity therapy and physiologic changes associated with patient needs. Credits: 3.5, Hours: (2.5/2/0/0), Prereq: minimum C- in BIO-186 and in either CHM-110 or CHM-165; 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: ENG-105, HSC-107, RCP-212, minimum 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, MAT-102, and minimum C- in HSC-115 and in RCP-101; 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: minimum C- in 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: SPC-101 or SPC-112 or COM-222, minimum C- in RCP-370 and RCP-420; 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: minimum C- in 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 oxymetrix-mixed venous oxygen measurements, pulmonary artery catheters, hemodynamics and clinical application. Credits: 1.5, Hours: (1.5/0/0/0), Prereq: minimum C- in RCP-101, RCP-220, RCP-300, RCP-420, RCP-511, RCP-512, and in either BIO-161 or both BIO-168/BIO-173; 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: minimum C- in RCP-470 and RCP-736; Arts & Sciences Elective Code: B

RCP-511 Respiratory Care II-A (4)
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: 4, Hours: (3/2/0/0), Prereq: minimum C- in RCP-220 and RCP-300; Arts & Sciences Elective Code: B

RCP-512 Respiratory Care II-B (4)
Builds upon concepts introduced in Respiratory Care II-A. 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: 4, Hours: (3/2/0/0), Prereq: minimum C- in RCP-220 and RCP-300 and RCP-511; 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 C- in RCP-370, RCP-511 and RCP-512; 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: (0/1/6/0), Prereq: minimum C- in RCP-212; Arts & Sciences Elective Code: B

RCP-736 Respiratory Care Clinic II (6)
Demonstrates proficiency in RC Clinic I skills and ventilation and arterial blood gas analysis. Provides practice in pediatric respiratory care, hemodynamic monitoring and proficiency in pulmonary function testing. Integrates observation of diagnostic techniques in ECG, cardiac catheterization lab and bronchoscopy lab. Credits: 6, Hours: (.5/0/16.5/0), Prereq: minimum C- in RCP-420, RCP-511, RCP-512 and 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: minimum C- in RCP-736; 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 transcutaneous 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: minimum C- in RCP-370, RCP-511 and RCP-512; Arts & Sciences Elective Code: B

RCP-891 Respiratory Care Applications (2.5)
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, clinical simulation, and boards testing. Case discussions, activities, and understanding of case study managements, will selectively cover the spectrum of cardiopulmonary disorders for neonatal, pediatric, adult, and geriatric, along with outpatient protocols and application for all patients. Credits: 2.5, Hours: (2/1/0/0), Prereq: minimum C- in RCP-380, RCP-470, RCP-610 and RCP-736; Arts & Sciences Elective Code: B

RCP-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: B; Comments: Requires approval of supervising professor and dean

RDG: Reading

RDG-075 Personal Achievement Reading (1)
Develops reading comprehension skills and strategies. Introduces habits used by skilled readers utilizing actual texts from currently en-

rolled classes. Incorporates effective study skills for course quizzes and tests. Practices strategies through a lab environment. Credits: 1, Hours: (0/2/0/0), Arts & Sciences Elective Code: D

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: Also recommended: an ACCUPLACER score of 45 or above, or ACT score of 16 or above. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

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 also given to critical issues within Islam in the modern world. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

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 give 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

SCI: Science

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. Includes basic science 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. Ex-plores 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-136 Field Experiences in Environmental and Natural Sciences (1-3)
Focuses on skills associated with performing fieldwork in Environmental and Natural Sciences. Teaches how to prepare for fieldwork, capture and use field notes, collect and analyze data, and prepare summary reports. Varies in field experience location. Can be taken more than once for credit. Credits: 1-3, Hours: (0/2-6/0/0), Arts & Sciences Elective Code: A

SDV: Student Development

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: (0/2-6/0/0), Arts & Sciences Elective Code: D

SDV-057 Teacher Proficiency Test Preparation (1)
Provide 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 a High School 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: (1/0/0/0), Arts & Sciences Elective Code: D

SDV-093 College Survival Skills (1)
Transitions TRIO Student Support Service eligible students into the post-secondary environment. Covers available support services and campus resources, appropriate social and study skills, and how to adapt to and navigate college. Credits: 1, Hours: (0/2/0/0), 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-105 How College Works (3)
Explores individual strengths, strategies for solidifying personal responsibility, college readiness/academic success strategies, career readiness/vocational goals for students as they identify a college program or major. Emphasizes differences between high school and college expectations. Identifies appropriate career areas. Offers aids in taking and using placement tests for college admission and personal financial management. Credits: 3, Hours: (3/0/0/0), 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-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 habits, communication skills and 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-190 Mental Health First Aid (1)
Prepares students to assist people who may be developing mental health problems or experiencing mental health crises. Builds mental health literacy by encouraging the identification, understanding and response to signs of mental illness.

Creates greater confidence in managing crisis situations, providing help to others, advising people to seek professional help, improving concordance with health professionals about treatments, and decreasing stigmatizing attitudes. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A

SDV-207 Liberal Arts Passport (1)
Introduces a diverse assortment of opportunities within the Liberal Arts field. Offers a learning experience that develops a community on campus, explores potential interests, and engages with multiple forms of scholarship in a given field. Integrates a reflective writing process in the form of short responses to chosen events. Credits: 1, Hours: (1/0/0/0), 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

SER: Sustainable Energy Resources

SER-136 Energy Industry Fundamentals (3)
Aligns with the Energy Industry Fundamentals curriculum developed by the Center for Energy Workforce Development (CEWD). Provides a comprehensive look at the energy industry in the United States. Emphasizes safety, regulatory structures and agencies, electricity transmission and distribution, and an overview of the major sources of electricity generation. Explores hot topics in energy and careers in the industry. Students who complete this course can take an examination to receive the Energy Industry Fundamentals Certificate. Credits: 3, Hours: (2/2/0/0), Arts & Sciences Elective Code: B

SER-210 Photovoltaic Systems I (4)
Introduces solar energy and photovoltaic systems. Teaches solar radiation fundamentals and the relationship of the sun to the earth, safety considerations in solar energy systems, the photovoltaic (PV) effect and PV cell construction, current and voltage characteristics of PV cells, and the use of PV modules and arrays. It additionally covers batteries and battery charging, and the conversion from to DC to AC using inverters and associated equipment. Credits: 4, Hours: (2/4/0/0), Prereq: ELE-364, OSHA-10 Construction, Adult First Aid with CPR; Arts & Sciences Elective Code: B

SER-310 Photovoltaic Systems II (4)
This course is a follow up to SER-210-Photovoltaic Systems I. Covers photovoltaic (PV) installations, site planning, selection and sizing of components and wiring, National Electric Code (NEC) requirements, and the startup and commissioning process. Credits: 4, Hours: (2/4/0/0), Prereq: SER-210; Arts & Sciences Elective Code: B

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-220 Sociology of Aging (3)
Examines the trends of an aging society including demographic, economic and social trends that can meet with far-reaching social consequences affecting the present and future. Acquaints students with the typical aging process, including the social and psychological challenges related to that process. Offers study on national and global issues regarding late life development. 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-284 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. Credits: 3, Hours: (3/0/0/0), Arts & Sciences Elective Code: A

SOC-924 Honors Project (1)
Allows a qualified honors student to pursue a special concentration of study under the guidance of a faculty member. Requires that student meet honors eligibility criteria. Requires completion for an honors project contract. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

SOC-928 Independent Study (1)
Provides readings, papers, 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

SPC: Speech

SPC-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

SPC-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

SPC-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

SPC-132 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 opportunities. 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: (1/0/0/0), Arts & Sciences Elective Code: A; Comments: Requires approval of supervising professor and dean

SPC-928 Independent Study (1-3)
Provides readings 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: (0/4/0/0), Arts & Sciences Elective Code: B

SUR-182 Microbiology for Surgical Technologists (1)
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 for the Surgical Technologist. Credits: 1, Hours: (1/0/0/0), Prereq: SUR-126, SUR-128; 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 surgical applications in diagnostic, general and OB/GYN procedures, with emphasis on anatomy, physiology, pathophysiology, instrumentation, equipment, procedural steps and patient safety. Credits: 3, Hours: (3/0/0/0), Prereq: SUR-126, SUR-128; Arts & Sciences Elective Code: B

SUR-323 Surgical Technology II Lab (1)
Applies principles learned in Surgical Technology II in a hands-on laboratory setting. Focuses on simulating the three phases of case management and applying them to each surgical specialty. Credits: 1, Hours: (0/2/0/0), Prereq: SUR-126, SUR-128; Arts & Sciences Elective Code: B

SUR-340 Surgical Specialties I (1)
Builds on the knowledge of basic surgical techniques. Developes 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), Prereq: SUR-126, SUR-128; 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), Prereq: SUR-126, SUR-128; Coreq: SUR-520; 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), Prereq: SUR-126, SUR-128; Coreq: SUR-322, SUR-323; 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), Prereq: SUR-126, SUR-128; Coreq: SUR-322, SUR-323; Arts & Sciences Elective Code: B

SUR-520 Surgical Technology Practicum I (2)
Provides hands-on, first-level clinical experience in the operating room. Credits: 2, Hours: (0/0/6/0), Prereq: SUR-126, SUR-128; Coreq: SUR-341; Arts & Sciences Elective Code: B

SUR-523 Surgical Technology Practicum II (9)
Provides an extensive hands-on clinical experience in all entry-level skills for Surgical Technologists. Credits: 9, Hours: (0/0/27/0), Prereq: SUR-341, SUR-520; Arts & Sciences Elective Code: B

SUR-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

UTL: Utilities

UTL-260 High Pressure Boilers (2)
Covers the principles of high pressure boiler operation. Includes steam boiler types, package and field erected boilers, steam systems, feed water systems, fuel systems, pumps, regulators, traps, superheating, de-superheating and pressure reducing systems. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

UTL-270 Boiler and Chiller Inspection and Maintenance (1)
Covers the techniques, procedures and practices for boiler and chiller inspection and maintenance.

Includes preventive and predictive maintenance procedures; maintenance of boiler room and heating equipment; water quality maintenance; fire protection and structure; and maintenance of centrifugal, reciprocating, OPAC and modular chillers. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

VIN: Viticulture

VIN-105 Introduction to Wine Science (3.00)
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), 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), 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), 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, chloride, 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), 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 concepts 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 proficiencies 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 methanes, 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-401 Water and Wastewater Management (2)
Uses the ABC Water Treatment, Water Distribution, Wastewater Treatment, and Wastewater Collection Need-to-Know Criteria. Includes the core competencies used by the Iowa DNR Operator Certification Program for their Water Treatment, Water Distribution, and Wastewater Treatment certification exams and by the Iowa Water Environment Association Certification Program for their Wastewater Collection certification exams. Covers performance, security, safety, and administrative procedures. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

WAT-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

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

WBL: Work-Based Learning

WBL-148 Workplace Project Based Learning Industrial Technology (2-3)
Explains the concept of project-based learning in the workplace. Develops and implements projects in cooperation with local businesses, community organizations, or non-profit agencies in the Industrial Technology employment sector. Constructs projects under the supervision of a college faculty member. Credits: 2, Hours: (1/2/0/0), Arts & Sciences Elective Code: B

WEL: Welding

WEL-153 Virtual Reality Welding (1)
Demonstrates various techniques using the Lincoln VTECH, Virtual Reality Welder. Applies correct techniques and practices used in welding processes. Credits: 1, Hours: (1/0/0/0), 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 process associated with welding fabrication. Credits: 2, Hours: (0/4/0/0), Prereq: WEL-400; Arts & Sciences Elective Code: B

WEL-228 Introduction to Welding, Safety & Health of Welders: SENSE1 (1)
Provides an orientation to the welding profession, including basic safety and health within the welding profession. Aligns to SENSE Level 1, Module 1 and Module 2 - Key Indicators 1-6. Credits: 1, Hours: (1/0/0/0), Arts & Sciences Elective Code: B

Course Descriptions

WEL-233 Print Reading and Welding Symbol Interpretation: SENSE1 (3)
Provides instruction in interpreting elements of welding prints (drawings or sketches), focusing on measurement, American Welding Society welding symbols, and fabrication requirements. Focuses on preparing, assembling and tacking welding parts according to drawings or sketches, using proper materials and tools. Aligns to SENSE Level 1 Module 3: Drawing and Welding Symbol Interpretation, Key Indicators 1 and 2. Credits: 3, Hours: (3/0/0/0), Prereq: MAT-765; Arts & Sciences Elective Code: B

WEL-244 Gas Metal Arc Welding Short Circuit Transfer: SENSE1 (2)
Focuses on proper weld safety, machine setup and welding techniques of Gas Metal Arc Welding Short-Circuiting Transfer. Students perform American Welding Society compliant welds on carbon steel, in flat, horizontal, vertical and overhead positions. Prepares students to take an AWS welder certification test, which is recommended for its successful completion. Aligns with SENSE Level 1 Module 5 - Key Indicators 1-7, as well as Module 2 - Indicator 7, Module 3- Key Indicator 3, and Module 9 - Key Indicator 2. Credits: 2, Hours: (0/4/0/0), Coreq: WEL-228; Arts & Sciences Elective Code: B

WEL-245 Gas Metal Arc Welding Spray Transfer: SENSE1 (2)
Focuses on proper weld safety, machine setup and welding techniques of Gas Metal Arc Welding Spray Transfer. Students perform American Welding Society compliant welds on carbon steel in flat and horizontal positions. Prepares students to take an AWS welder certification test, which is recommended for its successful completion. Aligns with SENSE Level 1 Module 5 Key Indicators 1, 2 and 8-12, as well as Module 2 - Indicator 7, Module 3- Key Indicator 3, and Module 9 - Key Indicator 2. Credits: 2, Hours: (1/2/0/0), Coreq: WEL-228; Arts & Sciences Elective Code: B

WEL-251 Gas Tungsten Arc Welding for Carbon Steel: SENSE1 (2)
Focuses on proper weld safety, machine setup and welding techniques for Gas Tungsten Arc Welding. Prepares students to perform American Welding Society compliant welds on carbon steel in flat, horizontal, vertical and overhead positions. Qualifies students to take an AWS welder certification test, which is recommended for successful completion of this course. Aligns to SENSE Level 1, Module 7 - Key Indicators 1-7, as well as Module 2 - Key Indicator 7, Module 3- Key Indicator 3, and Module 9 - Key Indicator 2. Credits: 2, Hours: (1/2/0/0), Coreq: WEL-228; Arts & Sciences Elective Code: B

WEL-252 Gas Tungsten Arc Welding for Aluminum: SENSE1 (1)
Focuses on proper weld safety, machine setup and welding techniques for gas tungsten arc welding. Prepares students to perform American Welding Society compliant welds on aluminum in flat and horizontal positions. Qualifies students to take an AWS welder certification test, which is recommended for successful completion of this course. Aligns to SENSE Level I, Module 7 Key Indicators 1, 2 and 13 - 17, as well as Module 2 - Key Indicator 7, Module 3- Key Indicator 3, and Module 9 - Key Indicator 2. Credits: 1, Hours: (0/2/0/0), Prereq: WEL-228, WEL-251; Coreq: WEL-253; Arts & Sciences Elective Code: B

WEL-253 Gas Tungsten Arc Welding for Austenitic Stainless Steel: SENSE1 (1)
Focuses on proper weld safety, machine setup and welding techniques for Gas Tungsten Arc Welding. Prepares students to perform American Welding Society compliant welds on austenitic stainless steel in flat, horizontal, and vertical positions. Qualifies students to take an AWS welder certification test, which is recommended for successful completion of this course. Aligns to SENSE Level I, Module 7 Key Indicators 1, 2 and 8-12 as well as Module 2 - Key Indicator 7, Module 3- Key Indicator 3, and Module 9 - Key Indicator 2. Credits: 1, Hours: (0/2/0/0), Prereq: WEL-228, WEL-251; Coreq: WEL-252; Arts & Sciences Elective Code: B

WEL-254 Welding Inspection and Testing Principles: SENSE1 (1)
Prepares students to visually examine test welds and thermally cut surfaces per multiple welding codes, standards and specifications. Aligns to SENSE Level I, Module 9: Welding Inspection and Testing Principles. Credits: 1, Hours: (1/0/0/0), Prereq: WEL-233; Arts & Sciences Elective Code: B

WEL-262 Thermal Cutting Processes I - Manual and Mechanized OxyFuel Cutting: SENSE1 (2)
Focuses on proper safety, equipment setup and cutting techniques for manual and mechanized OxyFuel cutting on carbon steel. Prepares students to perform American Welding Society compliant cutting operations in the flat position. Instructs students in performing scarfing and gouging operations to remove base and weld metal in flat and horizontal positions on carbon steel. Aligns to SENSE Level 1 Module 8 - Units 1 and 2, as well as Module 2 - Key Indicator 7 and Module 9 - Key Indicator 1. Credits: 2, Hours: (1/2/0/0), Prereq: WEL-228; Arts & Sciences Elective Code: B

WEL-263 Thermal Cutting Processes II - Plasma and Carbon Steel Arc: SENSE1 (2)
Focuses on proper safety, equipment setup and cutting techniques for plasma and carbon steel arc cutting on carbon steel, austenitic stainless steel and aluminum. Prepares students to perform American Welding Society compliant cutting operations in the flat position. Instructs students in performing scarfing and gouging operations to remove base and weld metal in flat and horizontal positions. Aligns to SENSE Level 1 Module 8 - Units 3 and 4, as well as Module 2 - Key Indicator 7 and Module 9 - Key Indicator 1. Credits: 2, Hours: (1/2/0/0), Prereq: WEL-228; Arts & Sciences Elective Code: B

WEL-267 Welding for Maintenance Trades (3)
Focuses on safety, setup and layout of measurements and weldments. Includes student demonstration of proper techniques for re-pair/maintenance welds. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

WEL-268 Flux Cored Arc Welding Self-Shielded/Gas-Shielded (3)
Focuses on proper weld safety, machine setup, and welding techniques for flux cored arc welding self-shielded and gas-shielded. Students perform American Welding Society compliant welds on carbon steel in flat, horizontal, vertical and overhead positions. Prepares students to take an AWS welder qualification test, which is recommended for its successful completion. Aligns to SENSE Level 1 Module 6 Key Indicators 1, 2 and 8-12; Module 2 Key Indicator 7; Module 3 Key Indicator 3; Module 9 Key Indicator 2. Credits: 3, Hours: (1/4/0/0), Prereq: WEL-228, WEL-244, WEL-245; Arts & Sciences Elective Code: B

WEL-269 Thermal Cutting Processes (3)
Focuses on proper safety, equipment setup, and cutting techniques for oxy-fuel, plasma, and carbon steel arc cutting on carbon steel, austenitic stainless steel, and aluminum. Students perform American Welding Society compliant cutting operations in the flat position as well as scarfing and gouging operations to remove base and weld metal in flat and horizontal positions. Aligns to SENSE Level 1 Module 8 Units 3 and 4; Module 2 Key Indicator 7; Module 9 Key Indicator 1. Credits: 3, Hours: (1/4/0/0), Coreq: WEL-228; 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-271 Documents Governing Welding and Weld Inspection (3)
Teaches essential welding procedure and performance qualification variables found within a code or other standard. Students utilize AWS code specifics to create, inspect, and document various welding tests. Credits: 3, Hours: (1/4/0/0), Prereq: AWS SENSE 1 credential; Arts & Sciences Elective Code: B

WEL-272 Advanced Gas Tungsten Arc Welding - Pipe (6)
Focuses on safety, amperage settings, polarity, and the proper selection of electrodes for the gas tungsten arc welding process. Students perform American Welding Society compliant welds on carbon steel pipe and stainless steel pipe. Students utilize visual and destructive methods for determining weld quality from prior SENSE I curriculum. Credits: 6, Hours: (1/10/0/0), Arts & Sciences Elective Code: B

WEL-273 Gas Tungsten Arc Welding Stainless Steel And Aluminum (3)
Introduces various technical programs being integrated into or associated with the welding profession. Focuses on proper weld safety, machine setup, and welding techniques for gas tungsten arc welding. Students perform American Welding Society compliant welds on stainless steel and aluminum in flat, horizontal, vertical, and overhead positions. Aligns to SENSE Level 1 Module 7 Key Indicators 1-7; Module 2 Key Indicator 7; Module 3 Key Indicator 3; Module 9 Key Indicator 2. Credits: 3, Hours: (1/4/0/0), Prereq: WEL-228; Arts & Sciences Elective Code: B

WEL-274 Shielded Metal Arc Welding I: SENSE1 (3)
Focuses on safety, amperage settings, polarity and the proper selection of electrodes for the shielded metal arc welding process. Prepares students to perform American Welding Society compliant welds on carbon steel, using visual and destructive methods for determining weld quality. Aligns to SENSE Level 1 Module 4 - Key Indicators 1-7 for the flat and horizontal positions, as well as Module 2 - Key Indicator 7, Module 3- Key Indicator 3, and Module 9 - Key Indicator 2. Credits: 3, Hours: (1/4/0/0), Coreq: WEL-228; Arts & Sciences Elective Code: B

WEL-275 Shielded Metal Arc Welding II: SENSE1 (3)
Focuses on safety, amperage settings, polarity and the proper selection of electrodes for the Shielded Metal Arc Welding (informally known as stick welding) process. Prepares students to perform American Welding Society complaint welds on carbon steel, in vertical up and over-head configurations, using visual and destructive methods for determining weld quality. Aligns to SENSE Level 1 Module 4: Shielded Metal Arc Welding Key Indicators 1-7 for the flat and horizontal positions, as well as Module 2 - Key Indicator 7, Module 3- Key Indicator 3, and Module 9 - Key Indicator 2. Credits: 3, Hours: (1/4/0/0), Prereq: WEL-228, WEL-274; Arts & Sciences Elective Code: B

WEL-280 Flux Cored Arc Welding (Self-Shielded): SENSE1 (2)
Focuses on proper weld safety, machine setup and welding techniques for Flux Cored Arc Welding Self-Shielded. Prepares students to perform American Welding Society compliant welds on carbon steel in flat, horizontal, vertical and over-head positions. Qualifies students to take an AWS welder certification test, which is recommended for its successful completion. Aligns to SENSE Level 1 Module 6 - Key Indicators 1, 2 and 8-12, as well as Module 2 - Key Indicator 7, Module 3- Key Indicator 3, and Module 9 - Key Indicator 2. Credits: 2, Hours: (1/2/0/0), Prereq: WEL-228; Arts & Sciences Elective Code: B

WEL-281 Flux Cored Arc Welding (Gas-Shielded): SENSE1 (2)
Focuses on proper weld safety, machine setup and welding techniques for Flux Cored Arc Welding (Gas Shielded). Prepares students to perform American Welding Society compliant welds on carbon steel in flat, horizontal, vertical and over-head positions. Qualifies students to take an AWS welder certification test, which is recommended for its successful completion. Aligns to SENSE Level 1, Module 6 - Key Indicators 1-7, as well as Module 2 - Key Indicator 7, Module 3- Key Indicator 3, and Module 9 - Key Indicator 2. Credits: 2, Hours: (1/2/0/0), Prereq: WEL-228 and either WEL-244 or WEL-245; Arts & Sciences Elective Code: B

WEL-286 Advanced Shielded Metal Arc Welding Principles and Practices (6)
Prepares students utilize the SMAW process to weld all position fillet and groove welds on carbon steel plate using stainless steel electrodes. Examines production of SMAW pipe welds in the 2G, 5G and 6G positions. Aligns with SENSE 2, Units 1 through 11. Credits: 6, Hours: (1/10/0/0), Prereq: minimum C in WEL-275; Arts & Sciences Elective Code: B

WEL-287 Layout and Fitup (3)
Introduces layout and fit-up tools and techniques. Focuses on the utilization of metal forming, cutting and machining tools. Reinforces safety and measurement tools. Aligns with SENSE 2, Units 1 through 6. Credits: 3, Hours: (1/4/0/0), Prereq: WEL-286 and OSHA Forklift credentials; Arts & Sciences Elective Code: B

WEL-288 Documents Governing Welding and Welding Inspection (1)
Introduces welding codes, standards and specifications. Aligns with SENSE 2, Units 1 and 2. Credits: 1, Hours: (1/0/0/0), Prereq: AWS SENSE 1 credential; Coreq: WEL-289; Arts & Sciences Elective Code: B

WEL-289 Weld Inspection and Testing Principles: SENSE 2 (2)
Applies welding inspection principles and practices, including evaluation of destructive and non-destructive test results. Aligns with SENSE 2, Units 1 through 3. Credits: 2, Hours: (0/4/0/0), Prereq: WEL-254 and AWS SENSE 1 credential; Coreq: WEL-288; Arts & Sciences Elective Code: B

WEL-290 Advanced Flux Cored Arc Welding Principles and Practices (3)
Prepares students to produce FCAW-S/FCAW-G welds on carbon steel in the 2G and 5G pipe positions. Aligns with SENSE 2, Units 1 through 10. Credits: 3, Hours: (1/4/0/0), Arts & Sciences Elective Code: B

WEL-291 Advanced Gas Metal Arc Welding Pipe Principles and Practices (3)
Prepares students to use the GMAW-S process to produce all position fillet and groove welds on aluminum plate. Includes GMAW 2F, 2G and 5G welds on carbon steel pipe. Aligns with SENSE 2, Units 1 through 12. Credits: 3, Hours: (1/4/0/0), Prereq: minimum C in WEL-244; Arts & Sciences Elective Code: B

WEL-293 Advanced Gas Tungsten Arc Welding Principles and Practices (8)
Prepares students to produce all position GTAW welds on carbon steel, aluminum and stainless steel sheet. Includes all position fillet welds, along with 2G and 5G groove welds on carbon steel, stainless steel and aluminum tubing. Aligns with SENSE 2, Units 1 through 18. Credits: 8, Hours: (1/14/0/0), Prereq: AWS SENSE 1 credential; 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-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-800 Welding Capstone (4)
Serves as the capstone course for the welding program. Requires students to design and construct projects using several approved welding processes to demonstrate the ability to analyze welding problems and to make decisions that use the most economical and practical welding processes. Concentrates on the advanced study of materials and methods, including joint work, adhering to specifications, fabrication of equipment, and completion of special projects. Credits: 4, Hours: (0/8/0/0), Prereq: WEL-286, WEL-287, WEL-290, WEL-291; Arts & Sciences Elective Code: B

WEL-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: B; Comments: Requires approval of supervising professor and dean

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 (3-4)
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

WTT: Wind Energy and Turbine Tech

WTT-101 Wind Turbine Orientation (1)
Offers summer internship option. Discusses the on-campus utility-scale wind turbine and allows tours of the internal structure. Offers designation as an authorized climber. Credits: 2, Hours: (.5/1/0/0), v

WTT-102 Introduction to Wind Energy (2)
Introduces the renewable energy industry with a focus on wind energy systems. Studies wind turbines, basic safety procedures, proper tool use and the electrical power delivery infrastructure. Credits: 2, Hours: (2/0/0/0), Arts & Sciences Elective Code: B

Course Descriptions

WTT-111 Wind Turbine Technical Foundations I (4)
Introduces electrical and mechanical subsystems on the on-campus utility-scale wind turbine. Includes electrical and hydraulic schematic reading, turbine control systems, communication and network topology, wiring and electrical power distribution, and hydraulic systems. Explores technical fundamentals of wind turbines and allows regular climbs of the on-campus wind turbine to reinforce learned concepts, and gain confidence and competence as tower climbers. Credits: 4, Hours: (3/2/0/0), Prereq: WTT-102, all required health and safety certificates; Arts & Sciences Elective Code: B

WTT-112 Wind Turbine Technical Foundations II (4)
Builds upon technical concepts and introduces additional wind turbine subsystems. Covers turbine emergency systems, generators and inverters, battery charging, blade pitch systems, and auxiliary turbine systems. Solidifies safety knowledge and skills through scheduled safety refresher training and rescue drills including wind turbine climbs. Credits: 4, Hours: (2.5/3/0/0), Prereq: WTT-111; Arts & Sciences Elective Code: B

WTT-210 Wind Energy Systems I (4)
Reviews the history of wind energy and the evolution from ancient windmills to modern-day electricity generating wind turbines. Explores technical concepts that govern wind turbine operation. Teaches wind industry safety, wind turbine designs, siting and construction considerations, generator types and operation, the aerodynamic principles of lift and drag, and basic maintenance practices. Introduces turbine control systems, communications and networking, and HMI programs. Credits: 4, Hours: (2/4/0/0), Prereq: ELE-364, ELT-224, OSHA-10 Construction, Adult First Aid with CPR, Tower Climb and Rescue; Arts & Sciences Elective Code: B

WTT-310 Wind Energy Systems II (4)
Continues the concepts learned in WTT-210-Wind Energy Systems I. Explores additional turbine subsystems as well as preventative maintenance concepts. Teaches maintenance safety, generator control, braking and mechanical systems, blade pitch, emergency circuits, and all facets of scheduled maintenance, including torque and tensioning, lubrication, and inspection techniques. Addresses electrical, hydraulic, and mechanical troubleshooting techniques through hand-on practice. Credits: 4, Hours: (2/4/0/0), Prereq: WTT-210; 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. Explores scheduling, preventive maintenance and lubrication specifications. Focuses on best practices to minimize wasted man-hours and materials, as well as cost savings and overall efficiency. Credits: 4, Hours: (1.75/4.5/0/0), Prereq: WTT-502; Arts & Sciences Elective Code: B

WTT-502 Wind Turbine Troubleshooting (4)
Builds upon Wind Turbine Technical Foundations I and II. Covers basic troubleshooting methodology and applies it through classroom exercises. Emphasizes electrical troubleshooting including safety, Personal Protective Equipment (PPE), tools, equipment, and Lock-Out Tag-Out (LOTO) procedures. Includes restoration of a faulted wind turbine via lab experience. Offers regular climbs of the on-campus wind turbine. Explores real-world fault conditions. Credits: 4, Hours: (1.75/4.5/0/0), Prereq: WTT-112; Arts & Sciences Elective Code: B

WTT-932 Internship (4-5)
Provides on-the-job work experience to apply acquired skills and knowledge. Teaches technical skills, turbine maintenance management and business relations. Credits: 5, Hours: (0/0/0/320), Prereq: WTT-101, all required health and safety certificates; Arts & Sciences Elective Code: B

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Kirkwood Main Campus Map

You can view an up-to-date online map at:https://www.kirkwood.edu/maincampus

Routes to Kirkwood

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