Earn College Credit in High School

Kirkwood

2015-2016

Programs of Study
Regional Center at the University of Iowa
www.kirkwood.edu/johnsonacademies
December 2014

Dear Students, Parents and Counselors,

Kirkwood Community College is honored to partner with local school districts, community partners, business and industry and the University of Iowa in offering state-of-the-art learning opportunities for the 21st century student. The Kirkwood Regional Center at the University of Iowa, located at the University of Iowa's Research Park, will open its doors in August of 2015. Our goal is to meet the needs of students and the community by offering a wide variety of services, including college credit opportunities for students while in high school.

Kirkwood Community College and partner school districts (Clear Creek Amana, College Community, Iowa City, Regina Catholic, Solon, Tipton, West Branch and West Liberty) are excited to be able to offer concurrent credit courses to students while in high school. Students can earn concurrent credit by enrolling in courses that meet high school requirements and satisfy college credit through Kirkwood Community College. Concurrent credit opportunities include Career Academies and courses that are offered either onsite at your high school or at the new Regional Center, with many of these credits transferrable to other institutions.

The Kirkwood Regional Center at the University of Iowa will offer students diverse learning opportunities with experience with hands on “real life” learning using cutting-edge equipment, and modern lab facilities. These programs will prepare qualified students for careers in high demand jobs that require post-secondary training and will allow students to fast track their college degree by completing college credit prior to high school graduation and at no cost to their families.

As students are planning their schedules and considering concurrent credit opportunities while in high school please do not hesitate to contact Kirkwood with any questions you may have or also discuss options with your high school guidance office. For additional information on the Kirkwood Regional Center at the University of Iowa including a complete listing of program/course opportunities please visit www.kirkwood.edu/johnsonacademies.

We look forward to working with high school students as they jump start their college career and begin to explore their futures by taking concurrent credit classes through Kirkwood. Please feel free to contact us with any questions you may have.

Have a great school year and strive for excellence in all of your classes!

Sincerely,

Jon Weih

Director, Kirkwood Regional Center at the University of Iowa
Johnson.regional@kirkwood.edu
319-887-3947
www.kirkwood.edu/johnsonregional
Getting Started...

Think you are ready to enroll in concurrent credit courses? Follow the simple steps below to ensure a smooth start.

1. Meet with your high school guidance counselor to review your four-year plan and determine that you are on the right track for high school graduation and college credit requirements.

2. Complete the Regional Center Pre-Registration form on-line with your counselor no later than March 15th. Preregistrations will be reviewed by your high school and Kirkwood Community College for eligibility and approval.

3. All students enrolling in concurrent credit courses must have a Kirkwood application on file. Students can complete this free application online at www.kirkwood.edu/hscreditapply. As part of the application process students must provide a Social Security number to create the official student record.

4. Students will need to have either current ACT or Compass Placement Exam scores on file to complete the registration process. The Compass Placement Exam is offered at all Kirkwood locations and evaluates students in the areas of reading, writing and math. This exam is untimed and is offered at no cost.

5. Students will be required to attend a mandatory orientation in the spring. Orientation is planned for early April. Parents are encouraged to attend this event as well.

Awarding of Credit/Grades...

• **High School Credit:** Students with a passing grade will receive credit from their high school. Individual school districts determine whether the high school credit will be awarded to meet high school core curriculum requirements or elective requirements.

• **College Credit:** Students will receive college credit from Kirkwood Community College. An official college transcript will be created and the grade earned in the concurrent credit course will be reflected on the student’s official college transcript.

• **Transferring Credit:** Students not planning to attend Kirkwood after high school graduation should plan to include their official college transcript as part of their application process to other colleges and universities. Students can request a copy of their transcript at www.kirkwood.edu/transcript. Kirkwood strives to ensure that academic level courses transfer to other institutions and have transfer agreements with many state universities and colleges. If a student plans to attend a private college or an institution out of state please contact the college directly to determine how credits earned will transfer.
Requirements for College Level Classes...

Senior Year Plus Requirements
As defined by the Iowa Department of Education, Senior Year Plus is an important part of high school reform efforts in Iowa. Through these programs, high school students are provided rigorous opportunities for advanced learning. To this end, Kirkwood partners with area school districts to prepare student to learn essential 21st century skills and earn college credit through postsecondary learning options, concurrent enrollment, and Career Academies.

Iowa law requires students, instructors, and institutions to meet certain criteria to be eligible to participate in Senior Year Plus programming.

To participate in the Arts and Science Academy student must demonstrate proficiency in each of the three academic areas - Math, Science and Reading – as indicated by Iowa Assessment Testing scores below. Students must also satisfy Kirkwood Community College prerequisites, which may include a satisfactory placement score for Reading, Writing, and Math indicated by Compass Placement Exam and/or ACT scores prior to registration.

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<tr>
<th>Grade</th>
<th>Fall</th>
<th>Midyear</th>
<th>Spring</th>
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<tbody>
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<td>Science – 243</td>
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<td>Reading - 243</td>
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<td>Science – 253</td>
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<td>Reading - 252</td>
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<td>Science – 260</td>
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<td></td>
<td>Reading - 259</td>
<td>Reading - 262</td>
<td>Reading - 263</td>
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If a student is not proficient in one or more of the above content areas, the school board may establish alternative but equivalent qualifying performance measures. Please see pages 10-12 of Senior Year Plus guidelines for additional information or visit www.educateiowa.gov/adult-career-community-college/senior-year-plus-syp

Participation in all other Career Academies is not based on proficiency on Iowa Assessment scores. Student will need to satisfy Kirkwood Community College prerequisites, which may include a satisfactory placement score for Reading, Writing, and Math indicated by Compass Placement Exam and/or ACT scores prior to registration.
Other Considerations:

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<th>Academy</th>
<th>Academy Prerequisites</th>
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<td>ACE (Arch, Const. Engineering)</td>
<td>Class limited to 15 students (Algebra II &amp; Geometry strongly encouraged)</td>
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<tr>
<td>Arts &amp; Sciences</td>
<td>ACT or Compass (ACT Writing-18) (Compass Writing-70)</td>
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<td>EMT</td>
<td>Must be 17 on first day of class (Students are required to have the following vaccinations to be eligible for clinical experience: Hepatitis B Vaccination Series, MMR, TDAP, Varicella, Seasonal Influenza, and a Two-Step or annual TB Test.)</td>
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<tr>
<td>Laboratory Science</td>
<td>Should have completed high school biology and high school chemistry or be enrolled in chemistry before beginning this academy</td>
</tr>
<tr>
<td>Patient Care</td>
<td>Must be 16 for clinical experience in spring. Required to have a current physical (a Kirkwood physical form is required and can be used during a sports physical) and immunization records completed and then submitted to Certified Background during the first semester of the academy. Per state requirements, all health care facilities require criminal background checks, including students in a clinical setting.</td>
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<tr>
<td>Pharmacy Technician</td>
<td>Must be HS Senior and 17 on first day of class, COMPASS math (pre-algebra) score of 70 and a reading score of 71. ACT scores are also accepted (18 math, 16 reading). The student is required to maintain a 77 percent (C+) average throughout the course.</td>
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<td>PLTW</td>
<td>Algebra II strongly recommended</td>
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<td>Transportation</td>
<td>Completed, or concurrently enrolled in Algebra I</td>
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Profile of a Successful Concurrent Credit Student...
Iowa Assessment scores or Compass Placement Exam scores are just two indicators of if a student is ready for the rigor of college credit coursework. Many other factors must be considered as a student explores the possibility of enrolling in concurrent credit coursework.

**Academic Skills or Standing**
- Satisfactory attendance record
- Completes all assignments by due date, including assigned readings
- Demonstrates self-motivation as a learner
- Attentive in class and participates in class discussions
- Applies classroom learning to cases, observations, and service learning
- Has a minimum GPA of 2.5 in academic courses

**Personal Traits/Dispositions**
- Demonstrates respect for others
- Exhibits intellectual curiosity and openness to new ideas
- Works well as part of a team
- Demonstrates honest and ethical decision-making
• Willingness to devote several hours each week outside of class to studying, reviewing and preparing for concurrent credit coursework

**Maturity**
• Demonstrates self-advocacy and communication of needs
• Successfully manages academic, work, extracurricular and other commitments
• Takes responsibility for their learning and success

The tentative Career Academy schedule for 2015/16 is below. Unless noted otherwise, in addition to their Career Academy selection students are also able to select one fall and one spring companion course. Academy schedule placement may be subject to change. *Your district may not offer all of these academies and courses.*

*AM Academies meet each day from 7:30-9:00 a.m. AM Companion Courses meet 9:00-10:00 a.m.
*PM Academies meet each day from 1:30-3:00 p.m. PM Companion Courses meet 12:30-1:30 p.m.

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<td>and Design</td>
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<td>Project Lead the Way-Engineering</td>
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Infusing Entrepreneurship & Innovation into the K-12 Classroom

STEM Innovator engages teams of students in Science, Technology, Engineering and Mathematics (STEM) innovation and entrepreneurship by working with STEM industry experts to develop solutions to problems of students and community interest.

For more information regarding the STEM Innovator, contact Leslie Flynn at leslie-flynn@uiowa.edu, or Dawn Bowlus, at dawn-bowlus@uiowa.edu.

STEM Innovator

- Creates student-STEM industry partnerships to enhance student learning
- Promotes student interest and achievement in STEM education through problem-based learning
- Develops student’s 21st Century knowledge and skills to succeed as effective citizens, workers and leaders
- Implements technologically enhanced instruction for global learning
- Improves STEM readiness for post-secondary education
- Increases awareness about the importance of STEM education for the economic development and society
## Skills, Attributes, and Content Students will Learn and Demonstrate in STEM Innovator Courses

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Kirkwood Regional Center at the University of Iowa
Companion Courses

**AP Calculus | 2 Semesters**
This is an Advanced Placement Program. The student will follow a prescribed course in college calculus. The course will cover the topics of calculus such as limits of functions, differentials, and integrals and their applications. At the conclusion of the course, the student may pay an Advanced Placement Program fee to take a test on this course. If you are successful, you will be given college credit and will pass out of college calculus.

**MAT-210 | Calculus I | 4 college credits**
Includes limits, derivative, differentiation, the differential elementary applications of calculus and introduction to integration. Prerequisite: MAT-136 (Trig and Analytic Geometry), 30+ on ACT Math or 51-99 on Compass Trigonometry

**SDV-170 | Career Decision Making | 3 college credits**
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. (Recommend class be taken concurrently with SDV-102 How College Works)

**ENG-105 | Composition I | 3 college credits**
Develops expository writing with emphasis on organization, supporting details, style, vocabulary and library research skills. Placement score of 70-98 Compass or 18-30 ACT

**ENG-106 | Composition II | 3 college credits**
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. Prerequisite of ENG-105 Composition I

**ART-186 | Digital Photography | 3 college credits**
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.

**HUM-116 | Encounters in Humanities | 3 college credits**
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.

**EDU-110 | Exploring Teaching | 3 college credits**
Introduces the concerns and activities of beginning teachers. The focus is on developing generic teaching skills applicable from preschool through high school. Microteaching is used to simulate actual teaching situations. Case studies are used to discuss common teaching problems.

**ENV-115 | Environmental Science | 3 college credits**
Examines environmental issues from a scientific perspective. Topics examined include ecosystems, energy, global warming, ozone depletion, air pollution, water resources, population growth and biodiversity. Students are required to analyze environmental problems and draw conclusions.
Kirkwood Regional Center at the University of Iowa
Companion Courses

**SPC-101 | Fundamentals of Oral Communication | 3 college credits**
Studies basic communication theory and practice including communication process, interpersonal relationships, small group interaction and public speaking.

**High School Government | 1 Semester**
This course will emphasize the development of the American political system by exploring the constitution and three branches of the federal government. State and local government will be examined as well.

**SDV-102 | How College Works | 1 college credits**
Explores students' individual strengths, and life and vocational goals, as they identify a college program or major. Emphasizes using self-assessments to identify appropriate career areas, understanding the differences between high school and college expectations, taking and using placement tests for college admission, and managing personal finances to afford a college education. (Recommend class be taken concurrently with SDV-170 Career Decision Making)

**MGT-145 | Human Relations in Management | 3 college credits**
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.

**FLS-241 | Intermediate Spanish I | 4 college credits**
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.

**FLS-242 | Intermediate Spanish II | 4 college credits**
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.

**BUS-102 | Introduction to Business | 3 college credits**
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.

**CSC-110 | Introduction to Computers | 3 college credits**
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.
Kirkwood Regional Center at the University of Iowa
Companion Courses

CRJ-100 | Introduction to Criminal Justice | 3 college credits
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.

SOC-110 | Introduction to Sociology | 3 college credits
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.

MGT-XXX | Iowa STEM Innovator | 3 college credits
Engages teams of students in Science, Technology, Engineering and Mathematics (STEM) innovation and entrepreneurship by working with STEM industry experts to develop solutions to problems of students and community interest. www.kirkwood.edu/johnsonacademies for more information.

BIO-151 | Nutrition | 3 college credits
Designed to show the relationship between sound nutrition and good health. Topics studied are: energy requirements, carbohydrates, lipids, proteins, vitamins, minerals, metabolism, physical exercise, dieting, weight problems, evaluation of nutritional claims, vegetarianism, and proper nutrition during pregnancy and lactation.

FIN-121 | Personal Finance | 3 college credits
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.

PSY-111 | Introduction to Psychology | 3 college credits
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.

PLTW-Biomedical Engineering | high school and possible university credit
The rigorous and relevant four-course PLTW Biomedical Science sequence allows students to investigate the roles of biomedical professionals as they study the concepts of human medicine, physiology, genetics, microbiology, and public health. Students engage in activities like investigating the death of a fictional person to learn content in the context of real-world cases. They examine the structures and interactions of human body systems and explore the prevention, diagnosis, and treatment of disease, all while working collaboratively to understand and design solutions to the most pressing health challenges of today and the future.

PLTW-Computer Software Engineering | high school and possible university credit
Students create apps for mobile devices, automate tasks in a variety of languages, find patterns in data, and interpret simulations. Students collaborate to create and present solutions that can improve people’s lives.
Kirkwood Regional Center at the University of Iowa
Companion Courses

**SOC-115 | Social Problems | 3 college credits**
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.

**MAT-157 | Statistics | 4 college credits**
Focuses on descriptive statistics (mean, medium, mode, standard deviation and variance) and introduces correlation and linear regression. Emphasizes inferential statistics and probability distributions as applied to confidence intervals, hypothesis testing of mean and standard deviation, and applications to business and other fields.

**MAT-136 | Trig & Analytical Geometry | 5 college credits**
Examines trigonometric functions, graphs, identities and applications. Includes conic sections, polar coordinates, parametric equations, vectors, planes and surfaces.
College Credit in High
Find your passion.
Get a head start.
Experience college with rock star teachers.
Earn free college credit

Experience
Fast-paced, highly technical environment that blends hands-on skill development in a variety of areas to offer students a competitive edge in today's workforce. A great next step for PLTW students!

Outcome
Students learn general machine set-up, basic blueprint reading and math skills, as well as computer-based and hands-on training in code writing and CNC machine setup and operations.

Career Focus
Immediate entry-level employment opportunities, prepared for additional college training in today's high demand, high skill, high wage, advanced manufacturing or related fields.

Determine your interest in the advanced manufacturing field, build professional networking relationships.

College Credits Earned: 17 College Credits

Certification Opportunities
Three National Institute for Metalworking Skills (NIMS) and industry recognized Welding Certifications through the American Welding Societies (SENSE) program (School Excelling through National Skill Standards Education).

The Kirkwood Advanced Manufacturing Engineering Technology & Welding Academy can lead students to college certificates, diplomas, associates, bachelors and graduate degrees. Examples of college majors include, but are not limited to: CAD/Mechanical Engineering Technology, CNC Machining Technology, Welding, Manufacturing Technology and Industrial Engineering. If you are planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at http://www.kirkwood.edu/fouryeartransfer

Iowa Average Salaries in Advanced Manufacturing Careers
Machinist: $17.19/hour, $36,010
Welder: $16.22/hour, $34,360
CNC Machine Programmer: $21.98/hour, $45,030
More info can be found at: www.bls.gov

College Credit Courses
Courses subject to change based on college curriculum.

FALL

MFG-291 | CNC Mill Operator (NIMS) | 3 credits
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.

MFG-292 | CNC Lathe Operator (NIMS) | 3 credits
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.

WEL-102 | Virtual Reality Information | 1 credit

WEL-228 | Introduction to Welding Safety & Health for Welders | 1 credit
This course will provide students with orientation to the welding profession and will cover the basics of safety & health within the welding profession. This course aligns to SENSE Level 1, Module 1 and Module 2 – Key Indicators 1-6.
WEL-244 | Gas Metal Arc Welding Short Circuit Transfer: SENSE I | 2 credits

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. This course will prepare students to take an AWS welder certification test, which is recommended for its successful completion. This course 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.

SPRING

MFG-287 | Manual Press Brake Operations (NIMS) | 3 credits

Introduces basic lathe operations. Covers manual hydraulic down acting press brake practice, tooling, bending 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.

WEL-245 | Gas Metal Arc Welding Spray Transfer: SENSE I | 2 credits

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. This course will prepare students to take an AWS welder certification test, which is recommended for its successful completion. It 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.

WEL-251 | Gas Tungsten Arc Welding (GTAW) for Carbon Steel: SENSE I | 2 credits

Focuses on proper weld safety, machine setup and welding techniques for Gas Tungsten Arc Welding. Students perform American Welding Society compliant welds on carbon steel in flat, horizontal, vertical and overhead positions. This course will prepare students to take an AWS welder certification test, which is recommended for successful completion of this course. 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.

Need to Know

Students must be available for 2.5 hours for the entire academic year to enroll in this program. 7:30-10:00 a.m. or 12:30-3 p.m.

Students receive credit from their high school and college credit from Kirkwood. The high school district pays for the college tuition.

The grade earned in this course is reflected on the student’s official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application process to other colleges or universities. www.kirkwood.edu/transcript

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

Student textbooks, safety equipment and tools are provided on the first day of class.

How to Get Started
Talk to your parents and your guidance counselor and go to www.kirkwood.edu/hscreditapply
College Credit in High School
Find your passion.
Get a head start.
Experience college expectations with rock star teachers.
Earn free college credit.

Experience
Unique, hands-on laboratory and classroom experiences in basic architecture and construction skills, with support from industry experts, including jobsite tours.

Outcome
Development of entry-level skills and knowledge for those who want to pursue one of the many careers available in the construction industry.

Career Focus
Immediate employment opportunities within the field.
Prepared for further training in the architecture, construction or engineering industry.
Potential for stronger competitiveness for application into local apprenticeship programs.

The Kirkwood Architecture, Construction, and Engineering Academy can lead students to college certificates, diplomas, associates, bachelors and graduate degrees. Examples of college majors include, but are not limited to: Architectural Technology, Carpentry, Construction, Masonry Technology, Plumbing Technology and Construction or Civil Engineering. If you’re planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at www.kirkwood.edu/fouryeartransfer

Iowa Average Salaries in Architecture and Construction Careers
Carpenter: $17.45/hour, $38,280
Construction Worker: $19.44/hour, $40,590
Electrician: $21.85/hour, $45,420
Architect: $33.62/hour, $72,780
More info can be found at: www.bls.gov

College Credit Courses
Courses subject to change based on college curriculum.

Year-long

EGT-460 | Civil Engineering & Architecture (CEA) | 3 college credits
Provides introductory theory and lab experience in basic residential construction procedures and safety for those with little or no construction experience. Includes: foundation systems, floor systems, basic wall construction, roof systems, basic mechanical systems as well as interior and exterior finishes.
Comments: previous PLTW not a requirement.

FALL

CON-190 | Residential Construction Lab | 3 college credits
Provides introductory theory and lab experience in basic residential construction procedures and safety for those with little or no construction experience. Includes: foundation systems, floor systems, basic wall construction, roof systems, basic mechanical systems as well as interior and exterior finishes.

SPRING

CON-116 | Architectural Plans and Specs | 3 college credits
Introduces the skills and methods for understanding and interpreting construction drawings and technical specifications for residential and commercial buildings.
Provides introductory theory and lab experience in basic commercial construction procedures. Primary focus on foundational elements in a variety of construction systems including; foundations, wall systems, masonry, plumbing, HVAC, electrical and interior and exterior finishes. Project coordination and safety will be emphasized.

**CON-410 | Construction Modeling | 3 College Credits**

Introduces construction concepts through computerized model building. Explores various wall systems and the phases of the construction process.

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**Need to Know**

Students must be available for 2.5 hours for the entire academic year. Course availability is 7:30-10:00 in the AM and 12:30-3:00 in the PM cohorts. Semester course schedule depends on the AM or PM timeframe.

Students receive credit from their high school and college credit from Kirkwood. The high school district pays the college tuition.

The grade earned in this course is reflected on the student’s official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application process to other colleges or universities. [www.kirkwood.edu/transcript](http://www.kirkwood.edu/transcript)

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

Student safety equipment, tools and textbooks are provided the first day of class.

Students are strongly encouraged to have completed or be concurrently enrolled in Algebra & Geometry.

Graduating seniors who successfully complete all four courses may be eligible to apply for a summer internship coordinated through Building Pros of Eastern Iowa and/or the Iowa City Home Buildings Association.

**How to Get Started**

Talk to your parents and your guidance counselor.

Go to [www.kirkwood.edu/hcreditapply](http://www.kirkwood.edu/hcreditapply) to apply.
KIRKWOOD COMMUNITY COLLEGE - KIRKWOOD REGIONAL CENTER AT THE UNIVERSITY OF IOWA

Agriculture Science

College Credit in High School
Find your passion.
Get a head start.
Experience college with rock star teachers
Earn free college credit.

Experience
Whether you’re building on the strong foundational ag science courses at your high school, or just starting to consider a career in the agriculture industry, this program is designed to give you a taste of what your options are.

Outcome
Successful academic preparation of required transfer level coursework in pre-professional majors at many colleges and universities.

College Credits Earned: 12
The Kirkwood Agriculture Science Academy provides students with a jump start to earning an associates, bachelors and/or graduate degree. If you’re planning to transfer to a four-year college or university after Kirkwood, specific transfer information can be found at www.kirkwood.edu/fouryeartransfer.

Iowa Average Salaries in Agriculture Related Fields
Agronomy Technicians: $34,070
Agriculture Managers: $69,300
Landscape Architect: $64,180

More info can be found at: www.bls.gov

College Credit Courses
Courses subject to change based on college curriculum.

FALL

AGP-333 | Precision Farming Systems | 3 college credits
Provides a background in the tools of precision farming, GPS, GIS and VRT. Introductory use of each of these tools in a precision farming system and how they are applied on the farm are covered. Hands-on activities with local data will provide a practical experience in the use of these tools.

AGH-221 | Principles of Horticulture | 3 credits
Introduces students to the field of horticulture. Students learn how to apply scientific principles to commercial horticultural practices and the improvement of those practices.

SPRING

HUM-145 | Human Relations in Management | 3 college credits
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.

AGA-114 | Principles of Agronomy | 3 college credits
Presents instruction in crop plant classification, use and identification. Also covers cropping systems, tillage methods, planting and harvesting methods, and crop growth patterns. A balance of theoretical and practical crop science.

Need to Know
Students receive credit from their high school and college credit from Kirkwood. The high school district pays the
college tuition.

The grade earned in this course is reflected on the student’s official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application process to other colleges or universities. [www.kirkwood.edu/transcript](http://www.kirkwood.edu/transcript)

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

**How to Get Started**
Talk to your parents and your guidance counselor.

Go to [www.kirkwood.edu/hcreditapply](http://www.kirkwood.edu/hcreditapply) to apply.
College Credit in High School
Find your passion.
Get a head start.
Experience college with rock star teachers.
Earn free college credit.

Are You Ready For College?
Are you ready for college? Give yourself an edge over other graduating seniors by starting college classes early. No matter what you are planning to major in, every college requires students to take a core set of arts and science offerings that are commonly referred to as “general education requirements.” College readiness will be assessed by Kirkwood’s Compass Placement Exam. Students must have the pre-requisite coursework and/or qualifying placement scores to enroll in these college courses.

College Credits Earned: 12 college credits
The Kirkwood Arts and Science Academy program provides students with a jump start to earning an Associates, Bachelors, and/or Graduate degree. If you’re planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at the following link: www.kirkwood.edu/fouryeartransfer

Choose AM (7:30-9:00) or PM (1:30-3:00)
This Academy experience meets Monday-Thursday

Track A
FALL

ENG-105 | Composition I | 3 college credits
Develops expository writing with emphasis on organization, supporting details, style, vocabulary and library research skills.

SOC-110 | Introduction to Sociology | 3 college credits
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.

SPRING

SPC-101 | Fundamental of Oral Communication | 3 college credits
Studies basic communication theory and practice including communication process, interpersonal relationships, small group interaction and public speaking.

ENG-106 | Composition II | 3 college credits
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.

Track B
FALL

Human Biology | 3 college credits
Examines human form and function and the relationship of humans to other living things. Fundamental biological principles as they apply to the human are explored. This course is intended for liberal arts students who do not currently
plan to major in the biological or health sciences.

**Macroeconomics | 3 college credits**
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.

**SPRING**

**Cultural Anthropology | 3 college credits**
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.

**Music Appreciation | 3 college credits**
Includes study of elements and forms of music with attention to major historical periods and composers of historical significance and survey of indigenous music.

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**Need to Know**
Students receive credit from their high school and college credit from Kirkwood. The high school district pays the college tuition.

The grade earned in this course is reflected on the student’s official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application process to other colleges or universities. [www.kirkwood.edu/transcript](http://www.kirkwood.edu/transcript)

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

Compass or ACT Placement scores are required for Composition I, Composition II courses.
(Compass Writing: 70 or ACT Writing: 18)

**How to Get Started**
Talk to your parents and your guidance counselor.

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College Credit in High School

Find your passion.  
Get a head start.  
Experience college with rock star teachers.  
Earn free college credit.

Experience

Determine if you’re a born marketer or if management is more your style. Thinking about Finance as a major? This will help you decide what area in business is for you!

Outcome

Some of the most popular college majors are in business-related fields. This academy will give you a jump start to determine which of the areas best matches your future goals.

Career Focus

Management, marketing, financial, or business-related majors add value and prepare you for a variety of flexible career opportunities in our region.

College Credits Earned: 12

Thinking about becoming a business major in college but unsure which area is the best for you to focus on? Will you study Finance? Management? Sales? The options are limitless. This academy is designed for students to explore the different areas of business. Pre-business transfer students are encouraged to enroll in Arts & Sciences Academy.

Iowa Average Salaries in Business Related Fields

Manager: $50,000 - $100,000 depending on field
Marketing Manager: $60,000 - $80,000
More info can be found at: www.bls.gov

College Credit Courses

Courses subject to change based on college curriculum. Choose AM or PM.

FALL

BUS-102 | Introduction to Business | 3 college credits
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.

MGT-145 | Human Relations in Management | 3 college credits
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.

SPRING

ACC-120 | Survey of Accounting | 3 college credits
Introduces basic concepts of financial and managerial accounting, with emphasis on how accounting reports are used by managers, investors, and other business stakeholders and how transactions impact the three primary financial statements, showing the integrated nature of accounting. Provides an overview of the accounting cycle, internal control, budgeting, decision making and inventory management issues.

MKT-140 | Principles of Selling | 3 college credits
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.
Need to Know
Students receive credit from their high school and college credit from Kirkwood. The high school district pays the college tuition.

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How to Get Started
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College Credit in High School
Find your passion.
Get a head start.
Experience college with rock star teachers.
Earn free college credit

Experience
Fast-paced, highly technical environment that blends hands-on skill development in a variety of areas to offer students a competitive edge in today's workforce. A great next step for PLTW students!

Outcome
Students learn general machine set-up, basic blueprint reading and math skills, as well as computer-based and hands-on training in code writing and CNC machine setup and operations.

Career Focus
Immediate entry-level employment opportunities, prepared for additional college training in today's high demand, high skill, high wage, advanced manufacturing or related fields.

Determine your interest in the advanced manufacturing field, build professional networking relationships.

College Credits Earned: 13.0

Certification Opportunities
The Kirkwood Computer Software Development Academy can lead students to college certificates, diplomas, associates, bachelors and graduate degrees. Examples of college majors include, but are not limited to: Computer Programmer, Business Systems Analyst, Internet Programmer, and more. If you're planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at www.kirkwood.edu/fouryeartransfer

Iowa Average Salaries in IT Careers
System Analyst and Internet Programmer: $64,820
Computer Programmer: $64,550
Computer Science Engineer: $71,896
More info can be found at: www.bls.gov

College Credit Courses
Courses subject to change based on college curriculum.

FALL

CIS-121 | Introduction to Programming Logic | 3 college credits
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.

CSC-110 | Introduction to Computers | 3 college credits
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.

SPRING

CIS-172 | Java | 4 college credits
Provides an introduction to object-oriented program and design concepts using the Java programming language. Intended for students without previous object-oriented programming experience. The course covers methods, classes and objects with emphasis on modularity and code reusability. Students code, test, and debug simple applets and applications illustrating understanding of conditionals, iteration, array handling, event processing, string handling, and input-output.
MGT-XXX | STEM Innovator (currently under development) | 3 college credits
STEM innovator engages teams of students in Science, Technology, Engineering and Mathematics (STEM) innovation and entrepreneurship by working with STEM industry experts to develop solutions to problems of students and community interest.

Need to Know
Students receive credit from their high school and college credit from Kirkwood. The high school district pays the college tuition. The grade earned in this course is reflected on the student’s official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application process to other colleges or universities. www.kirkwood.edu/transcript As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

How to Get Started
Talk to your parents and your guidance counselor.

Go to www.kirkwood.edu/hcreditapply to apply.
College Credit in High School
Find your passion.
Get a head start.
Experience college with rock star teachers.
Earn free college credit.

Experience
Explore fast-paced criminal justice and law enforcement careers with instructors who've been in the field!

Outcome
Some local, special and state police units want recruits to have some college training. Certain federal police agencies require a college degree. Many police units encourage new recruits to take college courses in police work.

Career Focus
This college-level course work is designed to prepare you for your next step into a degree program or familiarize you with the criminal justice system before you seek entry-level opportunities.

College Credits Earned: 12

The Kirkwood Criminal Justice Academy prepares students for associates, bachelors and graduate degrees. Examples of college majors include, but are not limited to: Criminal Justice, Law Enforcement or a related field. If you're planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at www.kirkwood.edu/fouryeartransfer

Iowa Average Salaries in Criminal Justice
Probation Officer: $47,200
Police Officer: $52,810
Private Detective/Investigator: $42,870
More info can be found at: www.bls.gov

College Credit Courses
Courses subject to change based on college curriculum. (Select AM or PM Academy)

FALL

CRJ-100 | Introduction to Criminal Justice | 3 college credits
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.

SOC-110 | Introduction to Sociology | 3 college credits
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.

SPRING

CRJ-141 | Criminal Investigations | 3 college credits
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. Prereq: CRJ-100

CRJ-200 | Criminology | 3 college credits
Surveys the nature, causes and extent of crime and delinquency; major consideration is given to various explanations from numerous disciplines. Prereq: SOC-110
Need to Know:

Strong reading and writing skills are necessary for successful completion of this academy. Students are strongly encouraged to have a Compass or ACT placement score that indicates an aptitude to write at the college level prior to enrolling in this program. (Suggested ACT Writing: 18 | Compass Writing 70)

Students receive credit from their high school and college credit from Kirkwood. College tuition is paid by the high school district.

The grade earned in this course will be reflected on the student’s official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application process to other colleges or universities. [www.kirkwood.edu/transcript](http://www.kirkwood.edu/transcript)

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

How to Get Started
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Go to [www.kirkwood.edu/hcreditapply](http://www.kirkwood.edu/hcreditapply) to apply.
College Credit in High School
Find your passion.
Get a head start.
Experience college with rock star teachers.
Earn free college credit.

Experience
This fast-paced learning experience provides an introduction to students pursuing education careers.

The curriculum combines a strong arts and sciences background with professional courses.

Outcome
Students learn what it takes to be a successful educator in the 21st century.

Education Careers is a pre-professional program that provides requirements of a teaching degree.

Career Focus
The program helps students meet transfer institutions’ requirements and provides specific training and general education in working with children or youth in educational settings.

Determine if you are ready for a career in the education field and build professional networking relationships.

College Credits Earned: 12.0

The Kirkwood Education Academy can lead students to college certificates, diplomas, associates, bachelors and graduate degrees. Examples of college majors include, but are not limited to: Early Childhood, Elementary Education and/or Secondary Education.

Iowa Average Salaries in Education Careers

Teacher Assistant (Para): $10-$12/hour or $23,220
Teacher: $44,040
School Administrator: $86,970

More info can be found at: www.bls.gov

College Credit Courses
Courses subject to change based on college curriculum. (Select AM or PM Academy)

FALL

EDU-110 | Exploring Teaching | 3 college credits
Introduces the concerns and activities of beginning teachers. The focus is on developing generic teaching skills applicable from preschool through high school. Microteaching is used to simulate actual teaching situations. Case studies are used to discuss common teaching problems.

PSY-111 | Introduction to Psychology | 3 college credits
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.

SPRING

PSY-121 | Developmental Psychology | 3 college credits
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.

EDU-810 | Field Experience | 3 college credits
Offers experience in classrooms. Students spend 100 hours at a school working under the supervision of a teacher. Students choose between preschool, elementary and secondary settings. A seminar is part of the course. Comments: Minimum GPA of 2.5 required to take this course

Need to Know

Student textbooks are provided.

Students who complete Exploring Teaching successfully have satisfied one required course for students interested in becoming para certified. For more info: www.kirkwood.edu/paraeducator

Students must have the availability to complete a 100 hour field experience within the walls of their district and complete a service learning component of the academy to be outlined by your instructor.

How to Get Started

Talk to your parents and your guidance counselor.

Go to www.kirkwood.edu/hcreditapply to apply.
College Credit in High School
… Find your passion
… Get a head start
… Experience college-level expectations
with rock star teachers
… Earn free college credit
… Why not!

Experience
Are you a quick-thinker looking to enter a fast-paced health career? If you do well in emergency situations, have an interest in the medical field, and are looking for hands-on learning, this rigorous academy program might be for you!

The Emergency Medical Technician Academy explores health careers and allows students to develop knowledge and skills in providing basic life support management of medical and traumatic emergencies. Students learn pre-hospital emergency care skills such as learning to maintain an airway to assist patient’s breathing, safely transferring and positioning patients, and to safely remove a trapped patient from a vehicle.

College Credits Earned 15

Certification Opportunities: EMT Certification, First Aid, CPR

The Kirkwood Emergency Medical Technician Academy can lead students to college certificates, diplomas, associates, bachelors or graduate degrees. Examples of college majors include, but are not limited to: EMT, Paramedic, Nursing, Pre-Med. If you’re planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at www.kirkwood.edu/fouryeartransfer

Iowa Average Salaries in EMT Careers
EMT/ Paramedic: $32,430
Registered Nurse: $53,300
Physician Assistant: $85,880
Physician: $196,230
More info can be found at: www.bls.gov

College Credit Courses
Courses subject to change based on college curriculum. (AM or PM | Fall and Spring)

FALL

HSC-205 | Exploration of Healthcare Careers | 3 college credits
Expects all aspects of health care and careers in the field. Covers the past, present and future of health care. Introduces key career cluster terms and career options within each career cluster. Provides career information, including education required for each area, educational costs to attain a degree versus potential career earnings, job descriptions, case studies and skills needed for specific career areas. Results in CPR for the Healthcare Provider certification upon successful completion.

HSC-115 | Medical Terminology | 4 college credits
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.

SPRING

EMS-200 | Emergency Medical Technician Theory | 8 college credits
Develops knowledge and skills in providing basic life support management of medical and traumatic emergencies. Focuses on patient assessment and history taking and management of cardiopulmonary,
medical, behavioral and environmental emergencies, and childbirth and pediatrics.

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**Need to Know**

In addition to Senior Year Plus requirements, students enrolling in this academy should be aware of the following program requirements:

Students enrolled will receive credit from their high school and college credit from Kirkwood. The college tuition is paid by the high school district. The grade earned in this course will be reflected on the student’s official college transcript. Student’s not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of their application process to other colleges or universities. [www.kirkwood.edu/transcript](http://www.kirkwood.edu/transcript)

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a Social Security Number as part of the secure online college application process to create the official student record. [www.kirkwood.edu/hscreditapply](http://www.kirkwood.edu/hscreditapply)

Student textbooks will be provided to the students, but must be returned in good condition at the end of the program.

Students from a variety of high schools enroll in this course, thus following a “shared” academic calendar, rather than that of the individual high school. Please note that this program will be offered in the spring, 2014 semester and will follow the Kirkwood academic calendar. Students are expected to be in class on these dates, regardless of their individual high school calendar.

**To meet state requirements, students must be 17 on the first day of class.**

EMT Academy Students will have the opportunity to practice their skills, under supervision, in actual pre-hospital and emergency settings.

Students are required to have the following vaccinations to be eligible for clinical experience: Hepatitis B Vaccination Series, MMR, TDAP, Varicella, Seasonal Influenza, and a Two-Step or annual TB Test.

Students will be required to Wear A uniform to their clinical experience, the Kirkwood EMS Shirt will be provided to the student once they have met all of the requirements for participation in the clinical.

Successful completion of a high school biology course is recommended for students prior to enrolling this program.
**Collegiate Credit Courses**

Courses subject to change based on college curriculum. (Select AM or PM Academy)

Select any two of the three courses below on your preregistration form. These classes will be year long experiences.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGT-440</td>
<td>PLTW-Biological Engineering</td>
<td>3</td>
</tr>
<tr>
<td>EGT-460</td>
<td>PLTW-Civil Eng. &amp; Architecture</td>
<td>3</td>
</tr>
<tr>
<td>EGT-420</td>
<td>PLTW-Digital Electronics</td>
<td>3</td>
</tr>
</tbody>
</table>

**College credits earned:** up to 9.0 credits

The Kirkwood PLTW Academy provides students with a jump start to earning an associates, bachelors and/or graduate degree. Examples of college majors include, but are not limited to: Electronics Engineering Technology and Engineering in a wide variety of disciplines. If you're planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at the following link: [www.kirkwood.edu/fouryeartransfer](http://www.kirkwood.edu/fouryeartransfer)

<table>
<thead>
<tr>
<th>Iowa Average Salaries in Engineering</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic Engineering Technician:</td>
<td>$49,140</td>
</tr>
<tr>
<td>Civil Engineers:</td>
<td>$77,990</td>
</tr>
<tr>
<td>Biomedical Engineers:</td>
<td>$81,540</td>
</tr>
</tbody>
</table>

More info can be found at: [www.bls.gov](http://www.bls.gov)

**EGT-440 PLTW-Biological Engineering | 3 college credits**

Biological Engineering (3) Introduces students to the application of biological and engineering concepts related to biomechanics, genetic engineering and forensics. This course was developed by Project Lead the Way.

**EGT-460 PLTW-Civil Eng. & Architecture 3 college credits**

Civil Engineering and Architecture (3) Introduces teams of students to collaboration on the development of community-based building projects and conceptual design for project presentations. This course was developed by Project Lead the Way.

**EGT-420 PLTW-Digital Electronics 3 college credits**

Digital Electronics (3) Uses computer simulations to teach students the logic of electronics as they design, test and construct circuits and devices. This course was developed by Project Lead the Way.

All courses noted are available as concurrent credit courses and students may be eligible for regent-accepted, transferrable engineering credit. All courses are worth 3 credit hours. In order to receive transferrable EGR credit, students must receive an 85% or greater pre-final grade, and pass parts A and C of the final exam with a
Project Lead the Way is a nationally recognized, high school pre-engineering curriculum designed to help students develop better problem solving skills by immersing them in real-world engineering challenges. The courses all use project-based, hands-on experiences to teach students the key elements and skills of engineering and technology-based careers. By completing a series of Project Lead the Way courses, students will be preparing themselves for the demanding rigor of two year engineering technology and four year engineering programs.

In addition to Senior Year Plus requirements, students enrolling in this academy should be aware of the following program requirements:

Students from a variety of high schools will enroll in these courses, thus following a “shared” academic calendar, rather than that of the individual high school. Please note that the start date of this program follows the Kirkwood academic calendar, and students are expected to be in class on these dates, regardless of their individual high school calendar.

In most cases students enrolled will receive credit from their high school and college credit from Kirkwood. The college tuition is paid by the high school district. The grade earned in this course could be reflected on the student’s official college transcript. Student’s not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of their application process to other colleges or universities. [www.kirkwood.edu/transcript](http://www.kirkwood.edu/transcript)

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a Social Security Number as part of the secure online college application process to create the official student record. [www.kirkwood.edu/hscreditapply](http://www.kirkwood.edu/hscreditapply)

Student textbooks will be provided to the students, but must be returned in good condition at the end of the program.
College Credit in High School
Find your passion.
Get a head start.
Experience college with rock star teachers.
Earn free college credit.

Experience
Get creative. Speak your mind.
Showcase your artistic talent.
Graphics, media, communication and design skills are relevant to a variety of industries and careers that cover all ends of the creative spectrum. Explore the cutting edge technology and software used by today’s commercial artists and communication specialists.

Outcome
Learn to think creatively about the world around you. Explore design, hone your creative problem solving skills, and learn the most up-to-date software. Students will build on their art and communication skills to explore new levels of creativity, and layout and design fundamentals.

Career Focus
Immediate employment opportunities for entry-level work using Adobe Photoshop, InDesign and Illustrator.

Graphics and Media Communications Academy

College Credits Earned 12.0
The Kirkwood Graphics and Media Communication Academy can lead students to college certificates, diplomas, associates, bachelors and graduate degrees. Examples of college majors include, but are not limited to: Graphic Communication Technology, Web Design and Graphic Design. Careers might include: advertising, marketing, printing and publishing companies, and Web design. If you’re planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at www.kirkwood.edu/fouryeartransfer

Iowa Average Salaries in Graphics, Communication and Design Careers
Public Relations Specialist: $57,550
Photographer: $36,580
Graphic Designer: $38,730
Web Designer: $53,462
Web Developer: $62,837
More info can be found at: www.bls.gov

College Credit Courses
Courses subject to change based on college curriculum. (Select AM or PM Academy)

FALL

ART-186 | Digital Photography | 3 college credits
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.

GRA-127 | Illustrator I | 3 college credits
Introduces Adobe Illustrator and its application in graphic communication. Learning activities include Adobe Illustrator tools as they apply to object (vector) based files, as well as Adobe Illustrator filters and layers. Students learn basic drawing and tracing techniques, creating line art, logos and learning how to simplify art work through stylizing. Creative use of type is also explored. Students learn how to set up color for reproduction. They also learn how to save and manage files created using these programs, as well as how these files interact with page layout and paint (raster) programs. Prerequisite: GRA-101 or permission of instructor.

SPRING

GRA-131 | Digital Layout | 3 college credits
This course provides working knowledge of the СS6 Adobe InDesign page layout program and its use in creating effective page layouts combining graphics and type. Topics covered include: toolbox and tool usage, importing and editing text and graphics, master pages, use of styles, text and paragraph formatting, general layout and design concepts, printing operations, importing graphics and setting up text styles, columns and grids. Students create various single and
spot-color documents including flyers, newsletters, and other printed materials. Prequisites: GRA-101 or permission of instructor.

**GRA-140 | Digital Imaging | 3 college credits**
Introduces electronic image editing software using Photoshop. Concepts covered include basic scanning techniques for grayscale and line art images; proper manipulation procedures required for various output sources, including input and output resolutions, file size, multiple file-saving formats, simple image enhancements and creating duo-tones; and creative application of Photoshop. Prereq: GRA-101

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**Need to Know**
Students receive credit from their high school and college credit from Kirkwood. College tuition is paid by the high school district.

The grade earned in this course is reflected on the student’s official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application process to other colleges or universities. [www.kirkwood.edu/transcript](http://www.kirkwood.edu/transcript)

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

**How to Get Started**
Talk to your parents and your guidance counselor.

Go to [www.kirkwood.edu/hscreditapply](http://www.kirkwood.edu/hscreditapply) to apply.
Hotel Management Academy

College Credit in High School
Find your passion.
Get a head start.
Experience college with rock star teachers.
Earn free college credit.

Experience
day to day operations of front of house operations in the hospitality industry.

Outcome
Foundational skills and certification to give you a jump start into an associates degree program or beyond.

Career Focus
Hotel management, lodging, hospitality related careers.

College Credits Earned: 10

Certification: National Restaurant Association Educational Foundation certification exam

The goal of the Hotel Management Academy is to prepare students for entry-level positions in front-of-house operations within the hospitality industry. Successful completion of the Hotel Management Academy will set students on a career path that encompasses all aspects of hotel operations, including food and beverage management. Students in this Academy will learn about the day-to-day operations of a lodging facility and the wide range of career options that exist within the hospitality industry, many of which are based upon the fundamental principles of business, marketing, and personnel management.

College Credit Courses
Courses subject to change based on college curriculum.

FALL

CSC-110 | Introduction to Computers | 3 college credits

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.

HCM-100 | Sanitation & Safety | 2 college credits

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.

SPRING
**HCM-600 | Introduction to Lodging Operations | 2 college credits**

Provides students with an overview of the lodging industry and how its functions are organized and operated. Each of the seven traditional disciplines is introduced: general management, hotel sales, financial control, rooms operations, food and beverage operations, human resources, and physical plant maintenance. Business ethics and effective communication are also emphasized.

**HMC-XXX | Hospitality Marketing (Course is under development) | 3 credits.**

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 with a special focus on hospitality arena.

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**Need to Know**

Students receive credit from their high school and college credit from Kirkwood. The high school district pays the college tuition.

The grade earned in this course is reflected on the student’s official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application process to other colleges or universities. [www.kirkwood.edu/transcript](http://www.kirkwood.edu/transcript)

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

The Hotel Management Academy is linked to the curriculum offered within Kirkwood Community College’s Hotel Management Associate of Applied Science Degree, offered by the Hospitality Arts Department. Kirkwood’s Hotel Management program is delivered within a national one-of-a-kind facility that provides students with the opportunity to receive extensive real-time training within the onsite full service hotel property, The Hotel at Kirkwood, a AAA Four Diamond rated property. The A.A.S. Degree program uniquely affords students with opportunities to receive instruction and career development from not only the faculty within the Hospitality Arts department, but also from the managerial team of The Hotel at Kirkwood. It is access to this same source of expertise that is offered within the Hotel Management Academy, along with supporting material from the American Hotel and Lodging Association’s Educational Institute (AHLAEI).

**How to Get Started**

Talk to your parents and your guidance counselor.

Go to [www.kirkwood.edu/hscreditapply](http://www.kirkwood.edu/hscreditapply) to apply.
KIRKWOOD COMMUNITY COLLEGE - KIRKWOOD REGIONAL CENTER AT THE UNIVERSITY OF IOWA

Human Services (Pre-Social Work) Academy

<table>
<thead>
<tr>
<th>College Credit in High School</th>
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<tbody>
<tr>
<td>Find your passion.</td>
</tr>
<tr>
<td>Get a head start.</td>
</tr>
<tr>
<td>Experience college with rock star teachers.</td>
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<tr>
<td>Earn free college credit.</td>
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<table>
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<tr>
<th>Experience</th>
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<tr>
<td>Blend theory and opportunities for real-life application in social service agencies.</td>
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<table>
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<tr>
<th>Outcome</th>
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<tr>
<td>Foundational skills and certification to give you a jump start into an associates degree program or beyond.</td>
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<tr>
<th>Career Focus</th>
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<tbody>
<tr>
<td>Social Work, Adoption Specialist, Case Manager, or other related fields.</td>
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</table>

College Credits Earned: 12

The Kirkwood Human Services Academy prepares students for associates, bachelors and graduate degrees. Examples of college majors include, but are not limited to human services or social work and/or a related field. If you’re planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at www.kirkwood.edu/fouryeartransfer.

Iowa Average Salaries in Human Services Related Fields

- **Social and Human Service Assistant:** $28,850
- **Social Worker:** $44,200
- **Psychologist:** $69,280

More info can be found at: www.bls.gov

College Credit Courses

Courses subject to change based on college curriculum. Choose AM or PM

**FALL**

**HSV-101 | Human Services Careers Orientation | 3 college credits**

Introduces the framework of the human services approach, specifically formation of individual values, systems analysis, problem solving and conflict resolution. Concepts of systems analysis are accompanied by applications of these concepts to problems.

**SOC-110 | Introduction to Sociology | 3 college credits**

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.

**SPRING**

**HSV-110 | Human Services Policy & Programs | 3 college credits**

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.

**SOC-120 | Marriage and Family | 3 college credits**

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.
Need to Know

Students are strongly encouraged to show evidence of the ability to write at the college level either through ACT or Compass Placement in Writing prior to enrollment in this program.

Students receive credit from their high school and college credit from Kirkwood. The high school district pays the college tuition.

The grade earned in this course is reflected on the student’s official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application process to other colleges or universities. www.kirkwood.edu/transcript

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

How to Get Started
Talk to your parents and your guidance counselor.

Go to www.kirkwood.edu/hcreditapply to apply.
College Credit in High School
Find your passion. Get a head start. Experience college with rock star teachers. Earn free college credit.

Experience
Electrical. Solar. Wind. Alternative energy sources are increasingly popular, as well as seeking ways to make use of these resources more cost effective and sustainable. Unique, hands-on laboratory and classroom experiences in this academy provide foundational skills, including access to industry experts and jobsite tours.

Outcome
Development of entry-level skills and industry certification and knowledge for those who want to pursue one of the many careers available in the sustainable energy and industrial maintenance industry.

Career Focus
Prepared for further training in the sustainable or renewable energy, or the industrial maintenance.

College Credits Earned: 13
Certification Opportunities: Snap-on Torque Certification

The Kirkwood Energy and Industrial Maintenance Academy can lead students to college certificates, diplomas, apprenticeship programs, associates, bachelors and graduate degrees. Examples of college majors include, but are not limited to: Energy, Electrical, Architectural Technology, Carpentry, Construction, Masonry Technology, Plumbing Technology and Construction Engineering. If you’re planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at [www.kirkwood.edu/fouryeartransfer](http://www.kirkwood.edu/fouryeartransfer)

Iowa Average Salaries in Energy/Industrial Maintenance Careers
Plant maintenance: $45,930
Electrician: $60,000
Wind Energy Technician: $60,000
Electrical Engineer: $85,000
More info can be found at: [www.bls.gov](http://www.bls.gov)

College Credit Courses
Courses subject to change based on college curriculum. PM Section ONLY (12:30-3:00)

FALL

**ELE-233 | Electrical Safety & Shop Methods | 1 college credit**
Focuses on basic safety for electrical trades. Studies general shop safety, the effect of electricity on the human body, and safe handling of batteries, toxic and non toxic liquids and vapors. Covers basic electrical soldering techniques, and constructing and soldering splices.

**IND-167 | Torqueing and Tensioning | 1 college credit**
Focuses on proper use of torque wrenches to apply appropriate torque and tension on bolts. Reinforces concepts and theory covered in lecture with hands-on labs.

**ATR-300 | Mechanical Drive Systems I | 2 college credits**
Introduces fundamentals of mechanical drives. Includes couplings, chain drives, pulley drives, motor leveling and alignment. Reinforces concepts and theory covered in lecture and online material with hands-on labs. Prereq: IND-167

**MAT-230 | Maintenance Math I | 2 college credits**
Reviews mathematical principles and fundamentals that enable students to understand and apply course material throughout the Industrial Maintenance, Energy Production and Automation programs. Covers metric prefixes, conversions, exponents, scientific notation, engineering notation, ratios, proportions and algebraic expressions. Prereq: MAT-052 or MAT-062

**MAT-233 | Maintenance Math II | 2 college credits**
Reviews mathematical principles and fundamentals that enable students to understand and apply course material throughout the Industrial Maintenance, Energy Production and Automation programs. Covers dimensional analysis, area, volume, binary and electrical formulas. Prereq: MAT-230

SPRING

ELE-238  |  AC, Magnet, Transformer, Relays  |  1 college credit
Expands existing study of AC theory and focuses on calculating AC sine waves. Introduces magnetic induction, transformer theory and magnetic relays. Reinforces theory and classroom study with practical lab exercises. Prereq: ELE-235, MAT-233

ELE-235  |  Electrical Theory, Measure, Circuits  |  3 college credits
Covers electrical theory, terminology, symbols, abbreviations and calculations. Focuses on using a variety of electrical meters to measure circuit parameters. Reinforces theory and classroom study with practical lab exercises. Prereq: ELE-233, MAT-233

ATR-302  |  Mechanical Drive Systems II  |  1 college credit
Introduces additional fundamentals of mechanical drives. Includes bearings, gaskets and gear drives. Reinforces concepts and theory covered in lecture and online material with hands-on labs. Prereq: ATR-300

Need to know
Students must be available Monday-Friday for 2.5 hours of contact time for the entire academic year.

Students receive credit from their high school and college credit from Kirkwood. The high school district pays the college tuition.

The grade earned in this course is reflected on the student's official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application process to other colleges or universities. [www.kirkwood.edu/transcript](http://www.kirkwood.edu/transcript)

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

How to Get Started
Talk to your parents and your guidance counselor.

Go to [www.kirkwood.edu/hscreditapply](http://www.kirkwood.edu/hscreditapply) to apply.
**College Credit in High School**
Find your passion.
Get a head start.
Experience college with rock star teachers.
Earn free college credit.

**Experience**
Geek Squad™ beware! Unique, hands-on hybrid learning environment with networking, programming logic, computer support and PC hardware.

**Outcome**
Information technology is part of our everyday lives. Careers in this field will continue to grow exponentially, especially in the next decade. This academy exposes students at an introductory level to networking, programming, and PC hardware to give them a better idea of which path would be best suited for them.

**Career Focus**
A+ Certification is the starting point for a career in the information technology industry. Become better prepared for a wide-variety of college majors focusing on computer science fields.

**College Credit Courses**
Courses subject to change based on college curriculum. Choose AM or PM.

**FALL**

**NET-165 | Network Plus | 3 college credits**
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.

**NET-122 | Computer Hardware Basics | 3 college credits**
Introduces the operation of a modern personal computer from a hardware point of view. Students learn about the basic components of a computer and develop troubleshooting skills for advanced courses. Some of the areas covered include system boards, storage drives, memory and power supplies. In addition, some software topics, such as operating systems, are presented. Low-level laboratory exercises enhance and reinforce understanding of the material covered.

**SPRING**

**CIS-128 | Programming Concepts | 3 college credits**
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.

**NET-137 | Advanced PC Concepts | 3 college credits**
Follows and builds on the prerequisite, Computer Hardware Basics. The first half of the course is spent reviewing, but also going into more depth on the topics covered in the beginning hardware course. The second half of the course deals
primarily with software considerations (such as BIOS, drivers and operating systems) necessary to understanding how modern PCs work. Throughout the course, tie-in to A+ certification topics is done for the benefit of those who plan to take the Comp-TIA exam.

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**Need to Know**

Students receive credit from their high school and college credit from Kirkwood. The high school district pays the college tuition.

The grade earned in this course is reflected on the student’s official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application process to other colleges or universities. [www.kirkwood.edu/transcript](http://www.kirkwood.edu/transcript)

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

**How to Get Started**

Talk to your parents and your guidance counselor.

Go to [www.kirkwood.edu/hcreditapply](http://www.kirkwood.edu/hcreditapply)
Laboratory Science Academy

College Credit in High School
Find your passion.
Get a head start.
Experience college with rock star teachers.
Earn free college credit.

Experience
Unique, hands-on learning experience designed to provide students with the knowledge, skills and motivation to be successful in science majors. Learn about 21st century careers in biotechnology and other related science professions by people currently working in the field.

Outcome
Students will be proficient in performing and using common procedures and processes used in laboratory environments. They will gain awareness of many aspects related to working in a lab, including career opportunities. More specific attributes include: understanding how business works, the importance of foundational math knowledge, computer and software proficiency, and the regulations and guidelines necessary to ensure safe and effective

College Credits Earned: 13
Laboratory sciences are essential to the health and vitality of our knowledge and workforce in this field of study touch our lives. They include jobs necessary for ensuring public health, product improving agriculture, and the creation of products we use on a day-to-day basis. The Kirkwood Laboratory Science Academy is designed to give educational foundation to build upon for further success in science degrees. The sequence of courses is designed to allow students number of pathways that include associate and bachelor degree college majors include, but are not limited to: Biochemistry, BSc Sciences, Biomedical Engineering, Environmental Sciences, M more. If you’re planning to transfer to a four-year college or university, specific transfer information can be found www.kirkwood.edu/fouryeartransfer

This academy is also uniquely designed to expose students to a wide variety of employment opportunities available to them in sciences that go beyond the typical professional jobs like medical doctors, physical therapists, etc. Average Iowa Salaries in Laboratory Science Careers
Food Scientist and Technologists: $60,460
Animal Scientist: $69,310
Biological Scientist: $53,760
Biological Technician: $40,180
Forensic Science Technician: $63,240
More info can be found at: www.bls.gov

College Credit Courses
Courses subject to change based on college curriculum. Choose Academy.

FALL

BIO-190 | Introductory Biotechnology | 3 college credits
Explores biotechnology and its impact on science and society. Biological principles, biotech product development, agricultura
**Career Focus**

Become better prepared and informed about a wide-variety of college majors focusing on biology and related science fields. Build professional networking relationships.

**BIO-450 | Basic Bioinformatics | 3 college credits**

Introduces bioinformatics (using computer technology in the laboratory) concepts and practice. Includes biological databases, sequence alignment, gene and protein structure prediction, molecular phylogenetics, genomics and proteomics. Emphasizes practical experience with bioinformatics tools, development of basic programming in a scripting language.

**BIO-249 | Biotechnology Internship | 1 college credit**

Provides practical experience in the field of biotechnology. Students are given the opportunity to acquire skills through a cooperative effort with local biotechnology companies.

**SPRING**

**BIO-400 | Lab Methodology | 3 college credits**

Emphasizes basic laboratory techniques commonly used in the biotechnology field. Includes properly making laboratory measurements, preparing solutions and using laboratory instruments. Covers quality assurance, and biosafety issues such as bloodborne pathogen training and interpretation of MSDS literature.

**PHI-105 | Introduction to Ethics (Science Focused) | 3 college credits**

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 science and medicine.

---

**Need to Know**

The sequence of courses in this academy are designed to supplement the high school curriculum. Therefore, these academy courses should not be taken in lieu of other science and math courses taught in school.

Success in science is dependent on a variety of factors, among them is exposure to a variety of science courses. Students will need to have successfully completed high school biology and should have completed high school chemistry or be enrolled in chemistry before beginning this academy.

Student textbooks are provided.

Students receive credit from their high school and college credit from Kirkwood. The high school distr
college tuition.

The grade earned in this course is reflected on the student’s official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application to other colleges or universities. [www.kirkwood.edu/transcript](http://www.kirkwood.edu/transcript)

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application to create the official student record.

**How to Get Started**

Talk to your parents and your guidance counselor.

Go to [www.kirkwood.edu/apply](http://www.kirkwood.edu/apply) and click Earn College Credit in High School.
Why College Credit in High School?
… Find your passion
… Get a head start
… Experience college-level expectations with rock star teachers
… Earn free college credit
… Why not!

Experience
Unique, hands-on learning experience providing care for patients in a clinical setting. Work side-by-side with health care professionals in a health care facility and fulfill prerequisites for many college health programs.

Outcome
Perform basic nursing skills through hands-on, direct patient care. Examples include: assessment of vital signs, such as taking blood pressure, temperature and respiration; performing basic hygiene and transfer skills (bathing, dressing and feeding) and learning to communicate with residents and the health care team.

Career Focus
Immediate employment opportunities for CNA certification, prepared for a wide-variety of college majors focusing on patient care fields.

Determine if you are ready for a career in the health care field, build professional networking relationships.

College credits earned: 12.5 credits

Certification opportunities: State of Iowa Nurse Aide Certification Exam (CNA) and American Heart Association CPR

The Kirkwood Patient Care Academy Program can lead students to college certificates such as diplomas, associates, bachelors and graduate degrees. Examples of college majors include, but are not limited to: Nursing, Athletic Training, Pre-Med, Exercise Science, Physical Therapy, Occupational Therapy, Radiology and Respiratory Therapy.

If you’re planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at www.kirkwood.edu/fouryeartransfer

Iowa Average Salaries in Health Care Careers
C.N.A.: $12/hour, $24,330
LPN: $36,820
RN/BSN: $53,300
Physical Therapist: $77,540
Physician Assistant: $85,880
Physician/Surgeon/Other: $196,230
More info can be found at www.bls.gov

College Credit Courses
Courses subject to change based on college curriculum. (Select AM or PM Academy)

FALL

HSC-205 | Exploration of Healthcare Careers | 3 college credits
Explores all aspects of health care and careers in the field. Includes field trips to the University of Iowa and the Kirkwood Simulation Center. Covers the past, present and future of health care. Introduces key career cluster terms and career options within each career cluster. Provides career information, including education required for each area, educational costs to attain a degree versus potential career earnings, job descriptions, case studies and skills needed for specific career areas. Results in CPR for the Healthcare Provider and Basic First Aid certification upon successful completion.

HSC-115 | Medical Terminology | 4 college credits
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.

SPRING
**HSC-107 | Professionals in Health | 2 college credits**
Learn the skills and characteristics expected for professional preparation and employability. Explore the health industry, see current trends and issues, and study the work environment as it relates to health and safety regulations.

**HSC-168 | Nurse Aide | 3.5 college credits**
Provide safe, effective resident care by mastering basic care giving skills and concepts. This class includes lecture, lab and clinical hours per state guidelines.

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**Need to Know**
It is highly recommended that students complete a high school biology course within the last 2 years and achieved a C or higher.

In order to be awarded the 91-hours nurse aide completion certificate, you must meet standards imposed by the state of Iowa. Absenteeism and tardiness may result in dismissal from the program. In order to move into the clinical experience in March or April, you must be 16, have a 79 percent or higher in the nurse aide course, and meet guidelines determined by the state of Iowa and the course instructor.

Textbooks are provided to students.

You will be required to purchase a scrub uniform (approximate cost $35-40) during the first semester of class.

You are required to have a current physical (a Kirkwood physical form is required and can be used during a sports physical) and immunization records completed and then submitted to Certified Background during the first semester of the academy. Per state requirements, all health care facilities require criminal background checks, including students in a clinical setting. More information will be shared at the required orientation. More information can be obtained at [www.kirkwood.edu/nurseaide](http://www.kirkwood.edu/nurseaide)

**Program Details**
Students receive credit from their high school and college credit from Kirkwood. The high school district pays the college tuition.

The grade earned in this course is reflected on the student’s official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application process to other colleges or universities. [www.kirkwood.edu/transcript](http://www.kirkwood.edu/transcript)

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

**How to Get Started**
Talk to your parents and your guidance counselor.

Go to [www.kirkwood.edu/hsccreditapply](http://www.kirkwood.edu/hsccreditapply) to apply.
Pharmacy Technician Academy

This program is designed for high school seniors. Students must be 17 on the first day of class.

**College Credit in High School**

Find your passion.  
Get a head start.  
Experience college with rock star teachers.  
Earn free college credit.

**Experience**

Unique learning environment under the direct supervision of a licensed pharmacist or certified pharmacy technician in both traditional classroom and clinical retail or hospital pharmacies.

**Outcome**

Through hands-on, clinical experiences students gain a basic understanding of medicine, prescription calculation and record keeping required in a retail or hospital pharmacy.

**Career Focus**

Immediate employment opportunities as a pharmacy technician, prepared for future course work in pharmacy-related degrees.

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**College Credits Earned**

14.5

**Certification Opportunities:** National Pharmacy Technician Certification

The Kirkwood Pharmacy Technician Academy aligns with the required course work in the Pharmacy Technician diploma program and prepares students for future course work in the field of hospital, home health, medical or retail pharmacy. If you’re planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at [www.kirkwood.edu/fouryeartransfer](http://www.kirkwood.edu/fouryeartransfer)

**Iowa Average Salaries for Pharmacy Related Careers**

**Pharmacy Technician:** $13.31/hour  
**Pharmacist:** $113,390

More info can be found at: [www.bls.gov](http://www.bls.gov)

**College Credit Courses**

Courses subject to change based on college curriculum. Choose AM or PM.

**FALL**

**HSC-205 | Exploration of Healthcare Careers | 3 college credits**

Explores all aspects of health care and careers in the field. Focuses on understanding basic wellness, and growth and development of the human being. Covers the past, present and future of health care. Introduces key career cluster terms and career options 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 CPR for the Healthcare Provider and Basic First Aid certification upon successful completion.

**HSC-115 | Medical Terminology | 4 college credits**

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.

**SPRING**

**PHR-170 | Pharmacology Technology | 7.5 college credits**

Provides the knowledge and skills necessary for employment as a pharmacy technician, in a retail, hospital or clinic pharmacy, under the direct supervision of a pharmacist. Includes basic understanding of medications, prescriptions and terminology, pharmaceutical calculations and techniques, record keeping, ethics and jurisprudence, as well as the role of the pharmacy technician. Emphasizes student preparation to make informed, intelligent decisions and assisting the pharmacist with providing medication and other types of health care products to patients. Designed to prepare learners
for the National Pharmacy Technician Certification Exam. Prerequisite: Successful completion of High School Algebra II (C or better) and Placement Test with required scores.

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**Need to Know**

Students must have successfully completed high school Algebra II with a C or better, Survey of Health Careers and Medical Terminology to enroll in the Pharmacology Technology course in the spring term.

Students must meet the recommended placement test scores: COMPASS math (pre-algebra) score of 70 and a reading score of 71. ACT scores are also accepted (18 math, 16 reading). Students not meeting this requirement will be reviewed on a case-by-case basis by the program director, Laura Daman.

During the Pharmacology Technology course in January, students complete the required paperwork to register with the Iowa Board of Pharmacy Examiners as a technician trainee. Students must be 18 years of age and have earned a high school diploma within one year of registration with the Iowa Board of Pharmacy Examiners to be eligible to take the National Certification Exam, which is required for employment as a pharmacy technician in the state of Iowa. Students are required to submit the paperwork and pay the $22 registration fee themselves to be registered as a technician trainee with the Iowa Board of Pharmacy Examiners. This expense is not included in the cost of the program billed to the district.

During the Pharmacology Technology course in January, students complete a 48-hour clinical experience in area retail and hospital pharmacies established by Kirkwood clinical agreements. The clinical experience is completed outside regular daily instruction time. Students must complete the entire clinical experience in order to complete the course. Students are required to purchase a $25 Kirkwood Pharmacy Technician polo shirt for the clinical experience.

During the Pharmacology Technology course in January, student evaluation is based on class participation, attendance, assignments, exams and/or quizzes, a final cumulative examination, lab practicals and satisfactory completion of the required clinical experience. The student is required to maintain a 77 percent (C+) average throughout the course.

Students receive credit from their high school and college credit from Kirkwood. The high school district pays the college tuition.

The grade earned in this course is reflected on the student’s official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application process to other colleges or universities. [www.kirkwood.edu/transcript](http://www.kirkwood.edu/transcript)

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

**Program Details**

Students meet Monday-Friday, 1.5 hours per day, for the entire school year. Additional time is required outside of class periods for required clinical experiences.

Program is designed for high school seniors, **age 17 on the first day of class**. The student must turn 18 within one year of the course completion for the certification requirement.

**How to Get Started**

Talk to your parents and your guidance counselor.

Go to [www.kirkwood.edu/hscreditapply](http://www.kirkwood.edu/hscreditapply) to apply.
College Credit in High School
Find your passion.
Get a head start.
Experience college with rock star teachers.
Earn free college credit.

Experience:
rigorous academic preparation for some of today's most popular pre-professional programs at colleges and universities.

Outcome:
successful academic preparation of required transfer level coursework in pre-professional majors at many colleges and universities.

College Credits Earned: 14 college credits
The Kirkwood Pre-Professional Academy prepares students for associates, bachelors and graduate degrees in Pre-Professional Programs (Pre-Chiro, Pre-Dental, Pre-Pharm, Pre-Med, and other Pre-Professional-related fields. If you’re planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at www.kirkwood.edu/fouryeartransfer

College Credit Courses
Courses subject to change based on college curriculum. (Choose AM or PM)

FALL
BIO-151 | Nutrition | 3 college credits
Designed to show the relationship between sound nutrition and good health. Topics studied are: energy requirements, carbohydrates, lipids, proteins, vitamins, minerals, metabolism, physical exercise, dieting, weight problems, evaluation of nutritional claims, vegetarianism, and proper nutrition during pregnancy and lactation. Comments: Does not count as a science course for the A.A. degree

BIO-168 | Human Anatomy & Physiology I w/Lab | 4 college credits
Introduces the structure and function of the human body. Organization at the cellular and tissue level and selected organ systems are emphasized. Laboratory activities (which include computer simulations, dissection, and/or human specimens) reinforce current concepts. Prereq: one year of recent high school biology or chemistry with a grade of B or higher strongly recommended, or completion of Basic Biological Concepts or other college-level biology course.

SPRING
SPC-101 | Fundamentals of Oral Communication | 3 college credits
Studies basic communication theory and practice including communication process, interpersonal relationships, small group interaction and public speaking.

BIO-173 | Human Anatomy & Physiology II w/Lab | 4 college credits
Continues the study of human organ systems. Laboratory activities include computer simulations and human specimens, correspond to structure and functions investigated. Prereq: BIO-168

Need to Know
Students receive credit from their high school and college credit from Kirkwood. The high school district pays for the college tuition.

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College Credit in High School
Find your passion.
Get a head start.
Experience college with rock star teachers.
Earn free college credit

Experience
Unique, hands-on learning experience provided in a state-of-the-art transportation lab; work side-by-side with industry certified technicians to develop high tech skills used in today’s automotive, repair and welding fields.

Outcome
Students become skilled in real life bumper-to-bumper diagnosis and maintenance, with certification opportunities as a power user of Snap On diagnostic tools. Experience cutting edge virtual training technology used in welding and auto collision repair to develop necessary foundation skills in the expanded automotive and transportation field.

Career Focus
Immediate entry-level employment skills and certifications, and prepared for further training in the field of automotive, repair, welding and related transportation field.

Transportation Academy
Two tracks are available for students interested in the field of Transportation.

The Kirkwood Transportation Academy can lead students to college certificates, diplomas, associates, bachelors and graduate degrees. Examples of college majors include, but are not limited to: Automotive Technology, Auto Collision, Welding, Diesel Agriculture and Diesel Truck programs. If you’re planning to transfer to a four-year college or university after attending Kirkwood, specific transfer information can be found at www.kirkwood.edu/fouryeartransfer

Iowa Average Salaries in Transportation Related Careers
Automotive Service Technician and Mechanic: $35,200
Auto Body Collision Repair Specialist: $38,500
Welder: $34,360
More info can be found at: www.bls.gov

College Credit Courses
Track A (11 credits) or Track B: Courses subject to change based on college curriculum.

TRACK A: (AM Section Only)
FALL

MAT-715 | Industrial Math I 3 college credits
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 and Sciences Elective Code: B

CRR-121 | Introduction to Metalworking and Refinishing Practices I 3 college credits
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.

SPRING

CRR-122 | Introduction to Metalworking and Refinishing Practices II 3 college credits
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.
WEL-333 | Auto Collision Welding Fundamentals | 2 college credits
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.

AUT-603 | Basic Automotive Electricity | 3 college credits
Introduces students to basic fundamental electrical and electronics related to the automobile. Topics covered include voltage, amperage, resistance, Ohm's Law and practical application. Series, parallel and series-parallel circuits are also studied.

Suggested Companion Courses:

MGT-145 | Human Relations | 3 college credits
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.

CSC-110 | Introduction to Computers | 3 college credits
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.

Iowa STEM Innovator (Currently Under Development)

TRACK B: (PM Section Only)

FALL

AUT-104 | Introduction to Automotive Technology | 3 college credits
Provides the beginning apprentice technician with an introductory overview of automotive servicing from a maintenance and replacement standpoint. Classroom and hands-on activities emphasize routine maintenance procedures in the care of tires, batteries, lighting, belts, hoses, filters and cooling systems. Presents career information on career pathways, employers, goal setting, skills inventory, student club information and personal plan.

MAT-715 | Industrial Math I | 3 college credits
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.

AUT-888 | Technical Lab I | 3 college credits
Simulated automotive repair environment. Learning activities include complaint, cause and correction to customer vehicles. Parts and labor calculations also covered.

SPRING

AUT-611 | Automotive Electricity | 5 college credits
Introduces electrical and electronic circuit theory. Covers voltage, amperage, resistance, Ohm’s Law and practical application on series, parallel and series-parallel circuits. Emphasizes studying circuits through electrical wiring diagrams and introduces scan tools and digital storage oscilloscopes. Covers diagnosis of electrical circuits with and
without multiplex network control. Includes certification as power users of the Snap-On 525D multi-meter.
Prerequisites: AUT-104 Introduction to Automotive Technology. Prerequisite: AUT-104

**AGM-124 | Technical Procedures | 3 college credits**

Identifies the general knowledge and procedures used by power technicians. Covers tool selection, general shop safety, fire safety and forklift operation.

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**Need to Know**

Students receive credit from their high school and college credit from Kirkwood. The high school district pays the college tuition.

Student textbooks, required tools and safety equipment are provided on the first day of class.

Students must have completed, or be concurrently enrolled, in Algebra I to take this academy.

As part of earning college credit for this academy, students must complete an online application to Kirkwood Community College, and must provide a social security number as part of the secure online college application process to create the official student record.

To meet NATEF standards, students will be required to meet strict attendance guidelines to comply with Kirkwood’s certification. Information will be shared during orientation and the first day of class.

The grade earned in this course is reflected on the student’s official college transcript. Students not planning to attend Kirkwood after high school graduation should plan to include this transcript as part of the application process to other colleges or universities. [www.kirkwood.edu/transcript](http://www.kirkwood.edu/transcript)

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