

# CAREER & TECHNICAL EDUCATION DEPARTMENT

## CTE Department- Career Pathways Project

Julie Knutson, Department Chairperson

The Career & Technical Education (CTE) Department now offers the Creating Career Pathways Project (CCPP) which is designed to provide students the skills, knowledge, and certifications necessary to successfully enter the workforce and create a foundation for a productive career. At the heart of the CCPP is the CTE Academies and Preparatory Pathways: A series of focused coursework to develop specialty skills, aligned to student’s interests and aptitudes, to make them marketable in today’s workforce. Upon completion of an Academy, students will have the opportunity to take Career Ready Certification exams aligned to their area of concentration. Academies will also provide students with community connections for job shadowing, apprenticeships, and part-time employment. CTE curriculum is aligned to career skill sets that have been identified as areas of need for the community, state, and country.

Career Pathway Academy Required Courses ~Minimum of 4 Courses in Each Academy~	
<b>Administrative Office Academy</b>	<ul style="list-style-type: none"> <li>- Microsoft Office Applications</li> <li>- Accounting 1</li> <li>- Advanced Applications – Word/PowerPoint</li> <li>- Advanced Applications – Excel/Access</li> </ul>
<b>Business and Finance Academy</b>	<u>Accounting Pathway</u> <ul style="list-style-type: none"> <li>- Business Ownership</li> <li>- Microsoft Office Applications</li> <li>- Accounting 1 &amp; Accounting 2 (or Honors Accounting 1) - <i>required</i></li> <li>- Advanced Applications – Excel/Access</li> <li>- Personal Finance</li> <li>- Economics</li> </ul>
	<u>Business Administration Pathway</u> <ul style="list-style-type: none"> <li>- Business Ownership</li> <li>- Microsoft Office Applications</li> <li>- Accounting 1 or Honors Accounting 1</li> <li>- Advanced Applications – Word/PowerPoint</li> <li>- Advanced Applications – Excel/Access</li> <li>- Personal Finance</li> <li>- Marketing</li> <li>- Economics</li> </ul>
	<u>Business Management Pathway</u> <ul style="list-style-type: none"> <li>- Business Ownership</li> <li>- Microsoft Office Applications</li> <li>- Accounting 1 or Honors Accounting</li> <li>- Advanced Applications – Word/PowerPoint</li> <li>- Advanced Applications – Excel/Access</li> <li>- Marketing</li> <li>- Economics</li> </ul>
	<u>Entrepreneurship Pathway</u> <ul style="list-style-type: none"> <li>- Business Ownership</li> <li>- Microsoft Office Applications</li> <li>- Accounting 1 &amp; Accounting 2 (or Honors Accounting 1) - <i>required</i></li> <li>- Personal Finance</li> <li>- Marketing</li> </ul>

*\*Note: See Creating Career Pathways Project Academy Flyers for additional Academy details.*

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<p><b>Business and Finance Academy</b></p>	<p><u>Finance Pathway</u></p> <ul style="list-style-type: none"> <li>- Microsoft Office Applications</li> <li>- Accounting 1 &amp; Accounting 2 (or Honors Accounting 1) - <i>required</i></li> <li>- Advanced Applications – Excel/Access</li> <li>- Personal Finance</li> <li>- Marketing</li> <li>- Economics</li> </ul>
<p><b>Computer Networking Design and Cybersecurity Academy</b></p>	<p><u>Computer Networking Design Pathway</u></p> <ul style="list-style-type: none"> <li>- Computer Networking</li> <li>- Cybersecurity</li> <li>- Computer Programming</li> <li>- Advanced Applications – Excel/Access</li> </ul>
<p><b>Digital Media, Graphic Design and Broadcast Academy</b></p>	<p><u>Digital Media/Graphic Design Pathway</u></p> <ul style="list-style-type: none"> <li>- Microsoft Office Applications</li> <li>- Advanced Applications – Word/PowerPoint</li> <li>- Multimedia Production</li> <li>- 3D Model Animation</li> </ul>
	<p><u>Broadcast Pathway</u></p> <ul style="list-style-type: none"> <li>- Microsoft Office Applications</li> <li>- Video Production</li> <li>- Advanced Video Production (2 semesters)</li> <li>- Multimedia Production</li> </ul>
<p><b>Digital Marketing Academy</b></p>	<ul style="list-style-type: none"> <li>- Business Ownership</li> <li>- Microsoft Office Applications</li> <li>- Accounting 1</li> <li>- Advanced Applications – Word/PowerPoint</li> <li>- Marketing - <i>required</i></li> <li>- Advanced Digital Marketing &amp; Social Media - <i>required</i></li> </ul>
<p><b>Public Service Academy</b></p>	<p><u>Education and Leadership Academy</u> <span style="float: right;"><i>*Required courses</i></span></p> <ul style="list-style-type: none"> <li>- Early Childhood Education*</li> <li>- Growth and Development of Children*</li> <li>- Family Health Maintenance*</li> <li>- Psychology</li> <li>- Public Speaking</li> </ul>
	<p><u>Culinary Careers Academy</u> <span style="float: right;"><i>*3 required courses</i></span></p> <ul style="list-style-type: none"> <li>- Foods &amp; Nutrition</li> <li>- Culinary Careers</li> <li>- World Cuisine</li> </ul>
<p><b>Construction &amp; Engineering Design Academy</b></p>	<p><u>Engineering Design Pathway</u></p> <ul style="list-style-type: none"> <li>- Technical Drawing &amp; Engineering Design</li> <li>- Drafting &amp; Engineering Design</li> <li>- Engineering Design – CAD 1</li> </ul>

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	<ul style="list-style-type: none"><li>- Engineering Design – CAD 2</li></ul>
<b>Construction &amp; Engineering Design Academy</b>	<u>Construction Design Pathway</u> <ul style="list-style-type: none"><li>- Technical Drawing &amp; Engineering Design</li><li>- Carpentry</li><li>- Construction 1</li><li>- Construction 2 – Advanced Building Trades - <i>required</i></li></ul>
<b>Electrical and Solar Energy Academy</b>	<ul style="list-style-type: none"><li>- Technical Drawing &amp; Engineering Design</li><li>- Carpentry</li><li>- Electrical Applications – <i>required</i></li><li>- Construction 1</li><li>- Construction 2 – Advanced Building Trades</li><li>- Physics 1</li></ul>
<b>Manufacturing Academy</b>	<ul style="list-style-type: none"><li>- Technical Drawing and Engineering Design</li><li>- Beginning Welding</li><li>- Welding Technology 1</li><li>- Welding Technology 2 - <i>required</i></li></ul>

*\*Note: See Creating Career Pathways Project Academy Flyers for additional Academy details.*

# CAREER & TECHNICAL EDUCATION DEPARTMENT

## BUSINESS & TECHNOLOGY

Julie Knutson, Department Chairperson

### CTE - BUSINESS

Whatever your career choice, you will benefit from business skills and computer training acquired in the CTE – Business Department at O’Fallon Township High School. Courses offered in the department will develop business and technological skills needed for future job markets as well as prepare students for post-secondary studies in the area of business. All students can benefit from the various computer classes as part of their four years at O’Fallon to prepare to function in a technology-driven society. College-bound students find that our business courses provide an important foundation and preparation for during and after college years. Business courses are especially important for students planning to major in a business-related field such as accounting, business administration, economics, finance, management, marketing, information technology and office technology.

#### ACCOUNTING 1

Full Year

#### CCPP Academy Course

1/2 credit per semester

*Open to sophomores, juniors, and seniors*

*Prerequisite: Completion of Introduction to Algebra or Advanced Algebra 1 with a grade of “C” or better*

This course is highly recommended for students who have an interest in pursuing any major in business at the college level, or are considering owning their own business in the future. This course includes planned learning experiences that develop initial and basic skills used in systematically computerizing, classifying, recording, verifying and maintaining numerical data involved in financial and product control records including the paying and receiving of money. Instruction includes information on keeping financial records, summarizing them for convenient interpretation, and analyzing them to provide assistance to management for decision making. Much of the work in this class is done electronically, reflecting how accounting has become a computerized profession. In addition to stressing basic fundamentals and terminology of accounting, instruction will provide initial understanding of the preparation of budgets and financials reports, as well as career opportunities in the accounting field

*State Course ID 12104A001*

#### HONORS ACCOUNTING 1

Full Year

#### CCPP Academy Course

1/2 credit per semester

*Open to sophomores, juniors and seniors*

*Prerequisite: Completion of Honors Algebra 1 or Advanced Algebra 1 with a grade of “B” or better*

Honors Accounting 1 will cover the same areas of study as Accounting 1 (*see course description above*).

The major difference between the two is the pace in which the material is covered and the difficulty of assigned problems. This course is highly recommended for students who have an interest in pursuing any major in business at the college level. Students will have the opportunity to take a qualifying exam through the AICPA (American Institute of Certified Public Accountants) to earn 3 credit hours from their university or from any participating college. Students learn how businesses plan for and evaluate their operating, financing and investing decisions and then how accounting systems gather and provide data to internal and external decisions makers. This year-long course covers all the learning objectives of a traditional college level financial accounting course, plus those from a managerial accounting course. Computer applications in the form of MS Excel will be integrated throughout the course.

*State Course ID 12104A001*

#### ACCOUNTING 2

Full Year

#### CCPP Academy Course

1/2 credit per semester

*Open to juniors and seniors*

*Prerequisite: Completion of Accounting 1 or Honors Accounting 1 with a grade of “B” or better or instructor approval.*

Accounting 2 is a course that builds upon the foundation established in Accounting 1. This course is planned to help students develop a deeper knowledge of the principles of accounting with more emphasis being placed on financial statements and accounting records. It is a study of previously learned principles as they apply to the more complicated types of business organizations, partnerships corporations, branches, etc. The students will become familiar with such specialized fields of accounting as cost accounting, tax accounting, payroll accounting, and others. Computer programs will be utilized throughout the course where applicable.

This course will offer an opportunity for Accounting 1 students to take the college level accounting course as described above (*see Honors Accounting 1 description*) and an opportunity to take a qualifying exam through the AICPA (American Institute of Certified Public Accountants) to earn 3 credit hours from their university or from any participating college. For students coming from Honors Accounting 1 AND having passed the qualifying exam, they will have the opportunity to enroll in an online course at Kansas State University and take a second accounting course to potentially earn a total of 6 transferable credit hours.

*State Course ID 12104A002*

*\*Note: See Creating Career Pathways Project Academy Flyers for additional Academy details.*

# CAREER & TECHNICAL EDUCATION DEPARTMENT

## BUSINESS & TECHNOLOGY

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### ADVANCED APPLICATIONS – EXCEL/ACCESS

**CCPP Academy Course**

1 Semester

1/2 credit

**SWIC Dual Credit Course**

*Open to sophomores, juniors and seniors*

*Prerequisite: Completion of Technology Essentials with a grade of “C” or better; or completion of a Proficiency Exam in the spring prior to enrollment*

The course will provide hands-on instruction in Microsoft® Excel and Microsoft® Access. Students will complete applications and demonstrate competence in the performance of a variety of spreadsheet and database tasks. Students will be gain experience with beginning, intermediate, and advanced capabilities of both programs. Students will learn how to complete complex and repetitious calculations accurately, quickly, and easily using a computerized spreadsheet. Students will also learn how to organize, keep track of, and maintain data efficiently using a computerized database.

*State Course ID 10005A001*

### ADVANCED APPLICATIONS – WORD/POWERPOINT

**CCPP Academy Course**

1 Semester

1/2 credit

**SWIC Dual Credit Course**

*Open to sophomores, juniors and seniors*

*Prerequisite: Completion of Technology Essentials with a grade of “C” or better; or completion of a Proficiency Exam in the spring prior to enrollment.*

This course will provide hands-on instruction in the advanced features of both Microsoft® Word and Microsoft® PowerPoint. Students will obtain advanced skills in document formatting and presentation preparation. Students will gain experience with preparing a variety of business-related documents while incorporating advanced features of Word such as customizing paragraphs, inserting objects, creating tables and SmartArt, and enhancing documents with clip art, bullets, shading, and desktop publishing concepts. Students will also learn to locate and retrieve information from hard copy and electronic sources and prepare presentations incorporating advanced features of PowerPoint. Students will gain experience in developing presentations with professional appeal and utilizing presentations to present to an audience. ***This course is a must for any student planning to continue their education after high school.***

*State Course ID 10005A001*

### BUSINESS OWNERSHIP

**CCPP Academy Course**

1 Semester

1/2 credit

*Open to freshmen*

*Prerequisite: None*

This course will provide an overview of all aspects of business, including the concepts, functions, and skills required for meeting the challenges of operating a business in a global economy. Topics covered will include the various forms of business ownership and the basic functional areas of business (finance, management, marketing, administration and production). Students will be introduced to a wide range of careers in fields such as accounting, financial services, information technology, marketing, and management. An emphasis will be placed on communication skills, math and problem solving. Business ethics as well as other workplace skills will be taught and integrated within this course.

*State Course ID 12001A001*

### COMPUTER PROGRAMMING **CCPP Academy Course**

Full Year

1/2 credit per semester

*Open to juniors and seniors*

**SWIC Dual Credit Course**

*Prerequisite: Completion of Advanced Algebra 2 or instructor approval*

Computer Operations & Programming is designed to develop computer programming and program design skills through the use of various programming languages such as Visual Basic, C+, Java and other object-oriented languages. Students will learn techniques to help with system analysis and design, as well as gaining knowledge of the systems development life cycle. Instruction will include basic programming tools that are common to many programming languages, including input/output statements, constants, assignment statements, input statements, string and numeric variable types, conditional, and branching and looping control structures. Students will learn programming techniques such as counting, averaging, rounding and the use of random numbers to develop a good programming style. Students will apply what they learn to create programs and applications that solve real world business related problems. Students will create programs to store, locate, and retrieve specific documents, data and information.

Students will gain valuable experience in logical problem solving and structured programming. The student will learn to develop program solutions using event-driven procedures and structured.

*State Course ID 10152A001*

*\*Note: See Creating Career Pathways Project Academy Flyers for additional Academy details.*

# CAREER & TECHNICAL EDUCATION DEPARTMENT

## BUSINESS & TECHNOLOGY

Julie Knutson, Department Chairperson

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### COMPUTER NETWORKING

1 semester

*CCPP Academy Course*

1/2 credit

**SWIC Dual Credit Course**

*Open to sophomores, juniors and seniors*

*Prerequisite: None*

This course covers the fundamentals of data communications and networking principles. Students will learn network standards, protocols, and topologies. Students will also learn network architectures of Local Area Networks and Wide Area Networks and related media, connections and components. Other topics covered include the OSI model, TCP/IP, and network security. Note: *Successful students will possess basic computer skills prior to enrolling.*

*State Course ID 10102A001*

### CYBERSECURITY

1 Semester

1/2 credit

**SWIC Dual Credit Course**

*Open to sophomores, juniors and seniors*

*Prerequisite: Completion of Computer Networking before enrolling in Cybersecurity is recommended, but not required.*

This course prepares students to use technology in a proficient and responsible manner in school, in the workforce and in everyday life. The course contains skills for working in an Internet or networked environment and the knowledge of what it means to be a good digital citizen and the ability to use technology responsibly. This course will provide an overview of cybersecurity including the importance of cybersecurity, the characteristics and operation of malware, and options for defense against cyber threats. Students will also explore why cybersecurity is important in various industries. The course will introduce information security, systems security, network security, mobile security, and physical security. Additional topics include ethics and laws, related technologies, defense and mitigation techniques used in protecting businesses. The course will discuss the characteristics and tactics of cyber criminals and explore the technologies, products, and procedures used by cybersecurity professionals to combat cybercrime.

*State Course ID 10020A001*

### COOPERATIVE EDUCATION/WORK EXPERIENCE

Full Year

1 credit for related class

*Open to seniors*

2 credits for work experience

*Prerequisite: Application and instructor consent required*

Cooperative Education is designed for senior students interested in gaining work experience in their focused field of study. Goals will be set cooperatively by the student, Coordinator, and employer. Students are released from

school for cooperative education work experience and will participate in related classroom instruction. Classroom instruction will focus on providing students with job survival skills, career exploration skills related to the job, and improving students' abilities to interact positively with others. Written training agreements and individual student training plans are developed and agreed upon by the employer, student and Coordinator. The Coordinator, student, and employer assume compliance with federal, state and local laws and regulations.

The goal of the cooperative work experience is for the student to gain part-time employment and maintain employment with acceptable skills.

Areas of concentration include:

1. Developing job skills as required at the training site
2. Maintain employment throughout each semester
3. Demonstrating job punctuality and attendance
4. Performing clerical duties
  - a. Completing job station reports
  - b. Completing training agreements
  - c. Completing time sheets
5. Job problem-solving
  - a. Using effective communication techniques
6. Meeting with work study coordinator to monitor on-job performance.

*State Course ID 12098A002*

### MARKETING

1 Semester

*CCPP Academy Course*

1/2 credit

*Open to juniors and seniors*

*Prerequisite: None*

Marketing I offers students insight into the processes affecting the flow of goods and services from the producer to the consumer. Course content ranges considerably as general marketing principles such as purchasing, distribution, and sales are covered; however, a major emphasis is placed on kinds of markets; market identification; product planning, packaging, and pricing; and business management. Students in this course will gain an understanding of various marketing strategies, realize the impact of the product life cycle, and understand the development of marketing functions and tasks related to current, real-world companies. Students will utilize a variety of programs and tools to incorporate concepts learned into realistic projects.

*State Course ID 12167A001*

*\*Note: See Creating Career Pathways Project Academy Flyers for additional Academy details.*



# CAREER & TECHNICAL EDUCATION DEPARTMENT

## BUSINESS & TECHNOLOGY

Julie Knutson, Department Chairperson

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### ADVANCED DIGITAL MARKETING & SOCIAL MEDIA CCPP Academy Course

1 Semester 1/2 credit

*Open to juniors and seniors*

*Prerequisite: Completion of Marketing with a "C-" or better*

This second semester of Advanced Marketing is a comprehensive course that focuses on the wide range of factors that influence the flow of goods and services from the producer to the consumer. Topics may include (but are not limited to) market research, the purchasing process, distribution systems, salesmanship, sales promotions, business management, and entrepreneurship. Students will also be introduced to the many facets of the advertising world. Promotion will be emphasized while focusing on the end consumer and product or service. Students will create television commercials, radio spots, and infomercials up to current trends and standards. Students will use a variety of programs and tools to incorporate concepts learned into realistic projects. This course will also explore the world of digital marketing strategies and social media marketing and how they impact and are integrated along with traditional marketing channels. The latest digital marketing trends will be discussed as well as creating a brand presence on social networks such as Facebook, Twitter, Tumblr, Instagram, and LinkedIn.

*State Course ID 12152A001*

### MICROSOFT® OFFICE APPLICATIONS CCPP Academy Course

1 Semester 1/2 credit

*Open to freshmen, sophomores and juniors*

*Prerequisite: None*

***Students who are enrolled in or have successfully completed Advanced Applications - Word/PowerPoint or Excel/Access should not enroll in Microsoft® Office Applications.***

This is an essential course that provides students with an in-depth knowledge of the Microsoft® Office applications. Students will benefit from the skills gained in this course not only for other courses taken OTHS, but also for post-secondary studies, and/or for future employment. The course will provide instruction in Microsoft® Office applications, including Word, Excel, and PowerPoint, as well as the integration of these programs. Students will apply problem-solving skills to hands-on, real-life situations using a variety of software applications. This course is designed to develop awareness and understanding of application software and to prepare students for placement in advanced computer courses. **Take this course early in your four-year course plan to reap the most benefits!**

*State Course ID 10004A001*

### MULTIMEDIA PRODUCTION CCPP Academy Course (ADOBE DREAMWEAVER/INDESIGN/PHOTOSHOP/LIGHTROOM/ FLASH/ILLUSTRATOR) SWIC Dual Credit Course

1 Semester 1/2 credit

*Open to sophomores, juniors and seniors*

*Prerequisite: Completion of Microsoft Office Applications, Advanced Applications – Word/PowerPoint **OR** Advanced Applications – Excel/Access*

Multimedia Production is a course designed to introduce students to a variety of multimedia programs. In this course, students will learn to create and design web sites using Adobe Dreamweaver and HTML while gaining an understanding of design standards as it relates to professional-quality sites. In addition, students will learn how to modify and alter scanned and digital images using Adobe Photoshop CC and Adobe Lightroom. Adobe InDesign and Adobe Illustrator will be introduced to create flyers, brochures, vector graphics and fonts. Adobe Flash will also be introduced and students will learn to create animation and video.

*State Course ID 10201A001*

### PERSONAL FINANCE CCPP Academy Course

1 Semester 1/2 credit

*Open to juniors and seniors*

*Prerequisite: None*

This course is designed to familiarize students to their role as consumers in the free enterprise system. This course will teach students how to manage their personal resources by making informed choices as consumers in the marketplace. Specific consumer problems that students will encounter during both their school years and adult lives will be discussed. The abilities to make personal financial decisions in the areas of budgeting, record keeping, insurance, credit, investing, and financial institutions and services will be emphasized in the learning activities.

*State Course ID 12007A001*

### TECHNOLOGY ESSENTIALS

1/2 Semester 1/4 credit

*Open to all levels*

*Prerequisite: Enrollment in Driver Education*

This course is designed to develop and enhance the abilities to key by touch, proofread, correct errors, and format a variety of documents used throughout the OTHS curriculum. Students enrolled in Technology Essentials will obtain necessary skills related to the daily use of technology in education. They will learn to properly utilize the OTHS student data drive, develop important file management skills, format documents in Microsoft Word including

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# CAREER & TECHNICAL EDUCATION DEPARTMENT

## FAMILY & CONSUMER SCIENCE

Julie Knutson, Department Chairperson

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### FAMILY HEALTH MAINTENANCE

*CCPP Academy Course*

1 semester

1/2 credit

*Open to juniors, and seniors*

This course is designed to address the health, safety, and social/emotional issues related to children, parents, and families. Communicable illnesses, prevention methods, childcare regulations, treatments for common injuries, legal mandates for reporting abuse and neglect, effects of violence on children, and nutritional needs will all be covered. Students interested in the fields of early childhood education, family studies and social services would especially benefit from this course.

*State Course ID 19253A001*

### FAMILY & CONSUMER SCIENCE INDIVIDUALIZED INSTRUCTION

1 Semester

1/2 credit

*Open to juniors and seniors*

2 Semester Limit

*Prerequisite: Completion of advanced-level course work in the field and written consent from the instructor.*

No more than one individualized instruction student will be assigned to an instructor during a given semester. Students will be required to select a topic for study and Laboratory work must be a component of the study. The instructor must approve the topic during the first four weeks of the semester. A written contract specifying work to be completed must be signed by both the student and the instructor. At the end of the semester the student must submit a written report to the instructor. After grading, a copy of the report will be placed on file with the department chairperson.

*State Course ID 16097A000*

### FAMILY & CONSUMER SCIENCE

#### LABORATORY ASSISTANT

1 Semester

1/4 credit per semester

2 Semester Limit – Pass/Fail Option Only

*Open to juniors and seniors*

*Prerequisite: Successful completion of advanced-level course work in the field in which the student will assist and written consent from the instructor.*

No more than two laboratory assistants will be assigned to any teacher during a given period. Student laboratory assistants will be required to aid the teacher in preparation for instruction in the classroom and to assist the teacher in the preparation, organization, maintenance, distribution, and storage of laboratory materials and equipment.

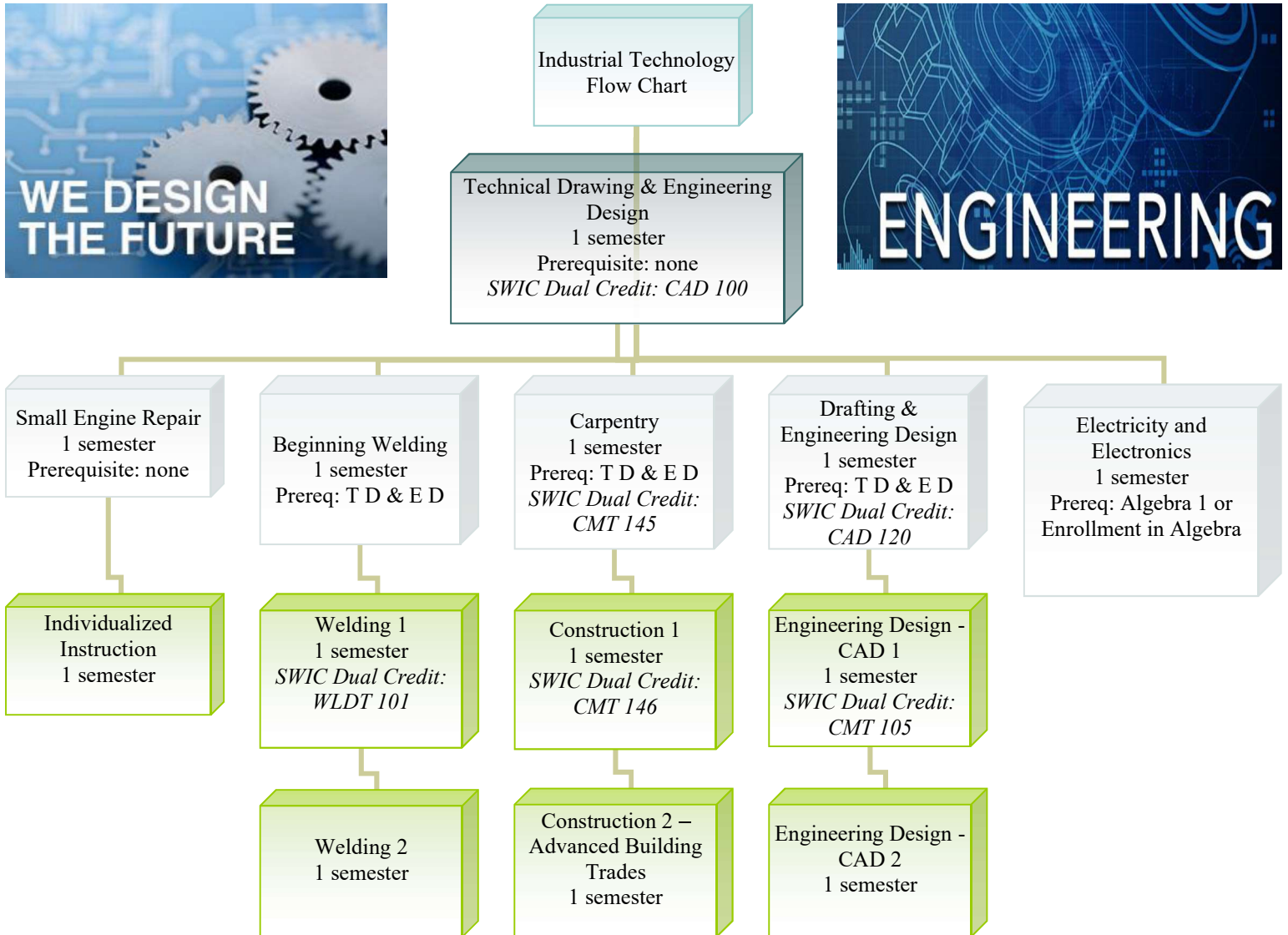
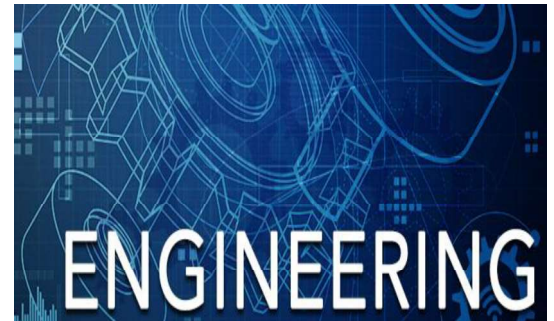
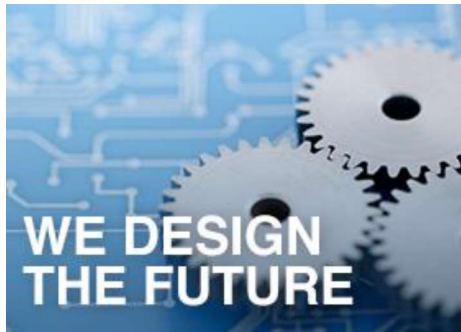
*Note: In order for a student to be a Lab Assistant, it must be their sixth class.*

*State Course ID 22245A000*

CAREER & TECHNICAL EDUCATION DEPARTMENT  
INDUSTRIAL TECHNOLOGY & ENGINEERING

Julie Knutson, Department Chairperson

Industrial Technology & Engineering  
Course Sequences



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# CAREER & TECHNICAL EDUCATION DEPARTMENT

## INDUSTRIAL TECHNOLOGY & ENGINEERING

Julie Knutson, Department Chairperson

### CTE – INDUSTRIAL TECHNOLOGY

#### TECHNICAL DRAWING & ENGINEERING DESIGN

*CCPP Academy Course*

1 Semester

1/2 credit

*Open to all levels*

**SWIC Dual Credit Course**

*Prerequisite: None*

Technical Drawing and Engineering Design will introduce students to new technologies of the Illinois plan for Industrial Education. Instruction will foster an awareness and understanding of technologies in graphic communication; the design and problem solving process; construction; and transportation technology. Students will be introduced to drafting communications using both manual and computer aided design techniques and will utilize the most recent version of Auto-Cad software on the market today.

*State Course ID 21052A002*

#### DRAFTING & ENGINEERING DESIGN

*CCPP Academy Course*

1 Semester

1/2 credit

**SWIC Dual Credit Course**

*Open to sophomores, juniors, and seniors*

*Prerequisite: Completion of Technical Drawing & Engineering Design*

This course introduces drafting-related occupations and the knowledge and skills needed for these occupations. Units will foster an awareness and understanding of drafting terms, drafting instruments and their uses, lettering styles and procedures, sketching and shape description, geometric construction, and multi-view projection. This class provides a foundation for students interested in engineering- or architecture- related careers. Mathematical learning standards and workplace skills are addressed in this class.

*State Course ID 21102A002*

#### ENGINEERING DESIGN (CAD) 1

*CCPP Academy Course*

1 Semester

1/2 credit

*Open to juniors and seniors*

**SWIC Dual Credit Course**

*Prerequisite: Completion of Drafting & Engineering Design*

This class provides a foundation for students interested in engineering or architecture-related careers. This course is designed to provide students interested in a career in drafting with information and practical experience needed for the development of job-related competencies. The course content includes planning and organizing activities, researching information, preparing various mechanical and architectural sketches, performing basic layouts, detailing drawings such as sectional and isometric views. Computer Aided Drafting

(CAD) software is used to generate various types of drawing. Mathematical learning standards and workplace skills are addressed in this class. *State Course ID 21106A001*

#### ENGINEERING DESIGN (CAD) 2

*CCPP Academy Course*

1 Semester

1/2 credit

*Open to juniors and seniors*

*Prerequisite: Completion of Architectural Drafting (CAD) 1*

This course builds upon CAD skills obtained in Architectural Drafting (CAD) 1 emphasizing technical drawings. The areas of performing presentation techniques such as producing architectural drawings, interpreting codes and constructing structural working drawings, producing mechanical and electrical/electronic working drawings, and producing civil engineering drawings. This class provides a foundation for students interested in engineering or architecture-related careers. Computer Aided Drafting (CAD) software is used to generate various types of drawings. Mathematical learning standards and workplace skills are addressed throughout the class. *State Course ID 21106A002*

#### CARPENTRY

*CCPP Academy Course*

1 Semester

1/2 credit

**SWIC Dual Credit Course**

*Open to sophomores, juniors and seniors*

*Prerequisite: Completion of Technical Drawing & Engineering Design*

This course consists of planned learning experiences designed to introduce this student to construction-related occupations and the knowledge and skills needed for these occupations. Areas of instruction include tools, materials, techniques, equipment, and processes utilized in the carpentry areas of construction. The Illinois Learning Standards (ILS) addressed in this class are mathematics, science and language arts. *State Course ID 17007A001*

#### CONSTRUCTION 1

*CCPP Academy Course*

1 Semester

1/2 credit

**SWIC Dual Credit Course**

*Open to juniors and seniors*

*Prerequisite: Completion of Carpentry 1*

Construction 1 is designed as an introductory course with emphasis on construction industry. It is also designed to provide comprehensive groundwork for construction. Instruction covers, but is not limited to, topics of: blueprint

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# CAREER & TECHNICAL EDUCATION DEPARTMENT INDUSTRIAL TECHNOLOGY & ENGINEERING

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reading, residential floor/wall roof framing, estimating/structural computations, excavation, footings, and foundations. This course provides comprehensive background in the use of power tools.

*State Course ID 17003A001*

## **CONSTRUCTION 2 - ADVANCED BUILDING TRADES**

**CCPP Academy Course**

1 Semester

1/2 credit

*Open to juniors and seniors*

*Prerequisite: Completion of Construction 1*

Construction 2 is a skill-level course with emphasis on the construction industry. Instruction covers: interior walls, interior and exterior doors, window framing, roof and rafter construction and finish carpentry work. Emphasis will be placed on good work habits and practices, safety of both hand and power tools. Mathematics, science, and language arts learning standards are addressed in this class.

*State Course ID 17003A002*

## **ELECTRICAL APPLICATIONS**

**CCPP Academy Course**

1 Semester

1/2 credit

*Open to sophomores, juniors and seniors*

*Prerequisite: Completion of or enrollment in Algebra*

This course consists of planned learning experiences designed to introduce the student to electricity and electronics occupations and the knowledge and skills needed for these occupations. Areas of instruction include electron theory, energy sources, OHMS LAW A.C. and D.C. circuits, and the equipment used in analyzing and testing.

*State Course ID 17104A001*

## **3D MODELING, ANIMATION & 3D PRINTING**

**(CGI, Animation and 3D Printing)**

**CCPP Academy Course**

1 Semester

1/2 credit

*Open to sophomores, juniors and seniors*

*Prerequisite: None*

This course will be an exploration into current 3D computer modeling primarily using Blender, a free, open source software. This course applies to students interested in a variety of industries and endeavors including: Manufacturing such as 3D printed fine art, commercial product design, architecture, and machinery; Medical, forensic, aerospace, geologic, and all other scientific fields that use models for simulations, products, and research; Entertainment such as the video game industry,

web developer, graphic designer, and CGI for animation and films.

*State Course ID 11154A001*

## **3D MODELING, ANIMATION & 3D PRINTING 2**

**(CGI, Animation and 3D Printing)**

1 Semester

1/2 credit

*Open to sophomores, juniors and seniors*

*Prerequisite: 3D Modeling, Animation, & 3D Printing*

This course will be an exploration into current 3D design and software and techniques for modeling 3D objects to be used in products such as games, movies and for production with 3D printers.

*State Course ID 11155A002*

## **SMALL ENGINE REPAIR**

1 Semester

1/2 credit

*Open to sophomores, juniors and seniors*

*Prerequisite: None*

This introductory course provides experience related to maintenance, repair, and servicing a variety of maintenance equipment such as lawn mowers, chainsaws, and rotary tillers. Areas of instruction include but are not limited to: safety principles and practices; combustion engine principles; carburetion principles; disassembly and reassembly of small gas engines; reading from technical manuals; measuring and performing mathematical calculations related to small engine mechanics.

*State Course ID 20110A001*

## **BEGINNING WELDING**

**CCPP Academy Course**

1 Semester

1/2 credit

*Open to sophomores, juniors and seniors*

*Prerequisite: None*

Beginning Welding is designed to introduce the student to the basic fundamentals of all types of welding. Instructions will include safety procedures, identification of oxy-acetylene equipment, electrode identification and the making of proper settings of arc welding machines when welds are to be made.

*State Course ID 13207A003*

*\*Note: See Creating Career Pathways Project Academy Flyers for additional Academy details.*



# CAREER & TECHNICAL EDUCATION DEPARTMENT

## INDUSTRIAL TECHNOLOGY & ENGINEERING

Julie Knutson, Department Chairperson

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### **WELDING TECHNOLOGY 1** *CCPP Academy Course* 1 Semester 1/2 credit **SWIC Dual Credit Course**

*Open to juniors and seniors*

*Prerequisite: Completion of Beginning Welding*

Welding 1 will consist of planned learning experiences designed to provide the student with job entry-level skills. Areas of instruction include, but are not limited to: safety, shielded metal arc welding using various electrodes, gas metal arc welding, and flux core arc welding. Emphasis will be placed on building proper size fillet weld in the 2F welding position

*State Course ID 13207A001*

### **WELDING TECHNOLOGY 2** *CCPP Academy Course* 1 Semester 1/2 credit

*Open to juniors and seniors*

*Prerequisite: Completion of Welding Technology 1*

This course further develops skills obtained in Welding Technology 1 with additional areas of instruction including: 1) all position butt welding with heavier metal; 2) Vee-groove butt joints; 3) gas metal arc welding; flat butt weld, vertical butt weld, horizontal butt weld, and overhead weld.

*State Course ID 13207A001*

### **WELDING TECHNOLOGY 3 I.I.**

1 Semester 1/2 credit

*Open to seniors*

*Prerequisite: Completion of Welding Technology 2 AND instructor consent.*

This course continues to develop previously introduced skills. Additional areas of instruction include: 1) inspection of specified jobs; 2) maintenance of equipment; 3) proper material selection; 4) air/carbon arc cutting; 5) pipe welding; and 6) spot welding.

*State Course ID 13207A002*

### **INDUSTRIAL TECHNOLOGY INDIVIDUALIZED INSTRUCTION**

1 Semester 1/2 credit

*Open to seniors*

2 Semester Limit

*Prerequisite: Completion or advanced-level course work in the field and written consent from the instructor*

No more than one individualized instruction student will be assigned to an instructor during a given semester. Students will be required to select a topic for study and Laboratory work must be a component of the study. The instructor must approve the topic during the first four weeks of the semester. A written contract specifying work to be completed must be signed by both the student and the instructor. At the end of the semester, the student must submit a written report to the instructor. After grading, a copy of the report will be placed on file with the department chairperson.

*State Course ID 22997A000*

### **INDUSTRIAL TECHNOLOGY LABORATORY ASSISTANT**

1 Semester 1/4 credit per semester (2 semester limit)

*Open to juniors and seniors*

*Prerequisite: Successful completion of advanced level course work in the field in which the student will assist and written consent from the instructor.*

No more than two laboratory assistants will be assigned to any teacher during a given period. Student laboratory assistants will be required to aid the teacher in preparation for instruction in the classroom and to assist the teacher in the preparation, organization, maintenance, distribution, and storage of laboratory materials and equipment.

*Note: In order for a student to be a Lab Assistant, it must be their sixth class.*

*State Course ID 17995A0*

*\*Note: See Creating Career Pathways Project Academy Flyers for additional Academy details.*