

Career & Technical Education Courses

A comprehensive, action-based education program concerned with technical means, their evolution, utilization, and significance with industry, its organization, personnel systems, techniques, resources, and products, and their social and cultural impact. Opportunities for on-the-job occupational training are available for all areas below, as well as advanced course work through the DeKalb High School-Kishwaukee Extended Campus Program, and Kishwaukee Education Consortium.

All Materials Fees are due at fall registration

Technology Education I (TE I) (Meets Technology Requirement unless taken pass/fail) 37171/37172

Semesters: 1 .5 Credit
Grade Placement: 9,10 Elective
Additional course fee required

Technology Education I (TE I) is an orientation level course designed to teach students about production and communication. Production technology includes units on materials and processes, manufacturing, construction, and servicing. Each unit will involve students in a wide range of activities and experiences. Students' learning activities and experiences will include things like managing and organizing people, researching and developing products, producing and assembling goods, designing and building structures, generating plans and specifications, installing and servicing systems, and marketing and distributing finished goods. Communication technology includes units on drafting and design, graphic communication, and processing and communicating information with computers. Included are things like generating a graphic product and creating computer aided graphics.

Energy & Transportation 36601/36602

Semesters: 1 .5 Credit
Grade Placement: 9,10,11,12 Elective
Additional course fee required

This course addresses the issues of energy sources and applications, their effect on the present and future development of our environment, and the major concepts underlying each of the traditional and alternative sources of energy, i.e., gas engines, steam engines, turbines, rockets, and jets. Each unit will make students aware of how each concept has been developed, the major conversion systems used to provide usable power, and problems to be solved to increase usefulness and efficiency. Emphasis is also placed on leadership, employability, and personal social skills within the curriculum.

Design Technology 38021/38022

Semesters: 1 .5 Credit
Grade Placement: 9,10,11,12 Elective
Additional course fee required

Design Technology is an orientation level course designed to teach students about the design process, engineering considerations, power systems and production processes. Students will learn the principles of engineering, as they relate to areas of automotive production, consumer products, civil engineering, and construction. The civil engineering section of the course will include units on computer aided bridge design, modeling, and testing. Student learning experiences will include principles of residential construction including framing, electrical, and plumbing systems. Student will experience design and production processes, with a variety of hand-on projects. Additional emphasis will be placed on leadership, employment considerations, and interpersonal social skills.

Small Engine Mechanics ## 14701/14702

Semesters: 1 .5 Credit
Grade Placement: 9,10,11,12 Elective
Prerequisite: A "C" or better in Energy & Transportation or Intro to Ag Science or another beginning ag science class

Additional course fee required

This course is useful to everyone, as we all use small gasoline engines in our daily lives on lawnmowers, snow blowers, trimmers, tillers, and recreational vehicles. It is an introductory course in Power Mechanics and Agricultural Mechanics, with over half of the time spent on hands-on experience in the shop. The course introduces the different types of energy and their sources with the emphasis on small engine operation, maintenance, repair and overhaul, understanding fundamentals of agricultural and power mechanics, and safe operation and repair of power and agricultural equipment.

Technical Drawing I (Meets Technology Requirement unless taken pass/fail) 37611/37612

Semesters: 1 .5 Credit
Grade Placement: 10,11,12 Elective
Additional course fee required

Students are introduced to the fundamentals of computer aided drawing. Students will learn to use computer aided drafting software to complete the assigned classroom drawings. Drawing projects are made with emphasis on understanding the concepts of shape and size description, orthographic projection, dimensioning, and pictorial drawings. Applied mathematics, careers, and occupations related to the engineering and drafting industry are investigated. Employability, leadership, and personal/social skills are included in the curriculum.

Technical Drawing II 37700

Semesters: 2 1 Credit
Grade Placement: 11,12 Elective
Prerequisite: A "C" or better in Technical Drawing I
Additional course fee required

This is an intermediate level drawing and design course. Students are engaged in both architectural and engineering related drawing. The first semester deals with technical drawing using computer aided drafting software. The second semester deals with the drawing and construction of a scale model house. Applied mathematics will be an integral part of this course. Careers and occupations related to the engineering and drafting industry are investigated. Employability, leadership, and personal/social skills are included within the curriculum. Computer aided drafting skills are emphasized in this course by allowing the students to use the Autocad software.

Technical Drawing III 37760

Semesters: 2 1 Credit
Grade Placement: 11,12 Elective
Prerequisites: A "C" or better in Technical Drawing I & II and instructor permission
Additional course fee required both semesters

Technical Drawing III is a course designed for students seriously considering careers in drafting, engineering, architecture, technical illustration, design, and technology. Preparation of students for advanced work in post-secondary programs or for semi-skilled job entry is emphasized. The student is given the opportunity to explore and apply previously learned skills in the areas of principles of design,

pictorial representation, descriptive geometry, technical writing and speaking, and related topics. Computer aided drawings are a major focus of this course. Students gain leadership, employability, and personal/social skills within the curriculum.

Graphic Communications I (Meets Technology Requirement unless taken pass/fail) 37041/37042

Semesters: 1 .5 Credit
Grade Placement: 10,11,12 Elective
Additional course fee required

This course is designed to give the student exposure to the equipment and vocabulary used within the graphic communication industry, as well as helping students learn how to adapt to new programs and situations. Students will be introduced to basic computer terms and skills, layout and design fundamentals, offset printing practices, and screen printing applications. Leadership, organization, employability, and personal/social skills are emphasized throughout the curriculum.

Graphic Communications II 37052

Semesters: 1 .5 Credit
Grade Placement: 10,11,12 Elective
Prerequisite: A "C" or better in Graphic Communications I or instructor permission
Additional course fee required

This class is a computer intensive course focusing on electronic publishing and advanced computer applications, such as, Adobe Photoshop, Illustrator, and InDesign. Using page layout programs to design 2-color screen-printing, newsletters, brochures, and advertisements, will be the focal point of the class. Photographic reproduction will be explored using digital methods as well as spending a considerable amount of time exploring new trends in the graphic communication industry. Leadership, employability, and personal/social skills are emphasized throughout the curriculum.

Advanced Graphic Communications III & IV 37061/37062

Semesters: 1 Semester each .5 Credit per semester
Grade Placement: 11,12 Elective
Prerequisites: A "C" or better in Graphics I, II, & III and instructor permission
Additional course fee required

These classes are for the student who is serious in considering a career in graphic communications. Students prepare for advanced work in post secondary programs or for semi-skilled job entry. By using state of the art graphic design programs, the student will build a professional electronic portfolio, create 4-color offset printing and screen printing projects as well as have the opportunity to design jobs for "real life" customers. Leadership, employability, and personal/social skills are emphasized throughout the curriculum.

Materials Fabrication I (metals) 37111

Semesters: 1 .5 Credit
Grade Placement: 10,11,12 Elective
Additional course fee required & materials used in project work

This is an introductory level course into materials fabrication. Emphasis is on metal and welding technology. Students will gain an understanding of materials such as: metal, plastic, and wood. Laboratory experience includes fundamentals of design, applied mathematics, lay-out, precision, measuring instruments, machine and hand tools, tool set-up, and operation. Emphasis is placed on personal/social skills and leadership.

Materials Fabrication II (metals) 37112

Semesters: 1 .5 Credit
Grade Placement: 10,11,12 Elective
Prerequisite: A "C" or better in Materials Fabrication I
Additional course fee required and materials used in project work

This is the second course in the materials fabrication sequence. Emphasis is on metal and welding technology. Students will gain an understanding of foundry and welding practices, casting and forming of materials, such as metal and plastic, precision measuring instruments, machine and hand tools, employability, personal/social skills, and leadership.

Materials Fabrication III (metals) 37131

Semesters: 1 .5 Credit
Grade Placement: 11,12 Elective
Prerequisite: A "C" or better in Materials Fabrication I & II
Additional course fee required

This is the third and final course in the materials fabrication sequence. This course is designed for students who are seriously considering a field in materials fabrication. Emphasis is on metal and welding technology. Students will be involved with machine metal, hot metal working, manufacturing and fabrication processes, computer numerical controlled machinery, precision measuring, machining of materials such as wood and metal, forming of plastics and mold design, and equipment maintenance. Emphasis is placed on employability, personal/social skills, and leadership.

Production Technology I (woods) 39161

Semesters: 1 .5 Credit
Grade Placement: 10,11,12 Elective
Additional course fee required

This is the introductory course in Production Technology Education. Students are introduced to what production technology is with emphasis in woodworking technology, types of manufacturing and construction, history of production, problem solving, introduction to tools and machines, and careers associated with production. Students gain an understanding of the production process, with emphasis in woodworking technology, by using both materials fabrication and communication technology laboratories. Leadership, employability, and personal social skills are emphasized throughout the curriculum.

Production Technology II (woods) 39162

Semesters: 1 .5 Credit
Grade Placement: 10,11,12 Elective
Prerequisite: A "C" or better in Production Technology
Additional course fee required

This is the second course in the Production Technology sequence. Students will be involved with problem solving, technical drawing, with emphasis on woodworking technology, systems of technology, careers in production, production materials, and tool and machine knowledge. Both materials fabrication and communication technology laboratories will be utilized. Leadership, employability, and personal social skills are emphasized throughout the curriculum.

Production Technology III (woods) 39181

Semesters: 1 .5 Credit
Grade Placement: 11,12 Elective
Prerequisite: A "C" or better in Production Technology II
Additional course fee required

This is the third course in the sequence of Production Technology. This course is designed for those students who are seriously considering a field in production technology. Students will be involved with problem solving and technological systems, tools and machines, manufacturing/enterprise, manufacturing systems, design engineering,

engineering production, specifications, and contracts, and heavy construction, civil and industrial construction. Students will utilize both materials fabrication and communication technology laboratories. Leadership, employability, and personal social skills are emphasized throughout the curriculum.

Production Technology IV (woods)

Semesters: 1 .5 Credit
Grade Placement: 11,12 Elective
Prerequisite: A "C" or better in Production Technology
Additional course fee required

This is the fourth and final course in the sequence of Production Technology. This course is designed for students who are seriously considering a field in production technology. Students will be involved with problem solving and technological systems, tools and machines, manufacturing/enterprise, architectural design and drawing, specifications and contracts, substructure, site work and foundations, floor and wall systems, roof systems and enclosing the structure, and environmental impacts, scrap, waste, and pollution. Students gain an understanding of the production process by utilizing both materials fabrication and communication technology laboratories. Leadership, employability, and personal/social skills are emphasized throughout the curriculum.

Large Engine & Advanced Power I ## 14501

Semesters: 1 .5 Credit
Grade Placement: 10,11,12 Elective
Prerequisites: A "C" or better in an Introductory Agriculture Class or in Small Engine Mechanics
Additional course fee required

This course is useful for those interested in extended campus courses or careers in Power Mechanics, Diesel Mechanics, Auto Repair, and Agriculture Mechanics. It would also be good for anyone interested in a basic knowledge of multi-cylinder engines for home use. This course has planned learning activities and experiences designed to inform students relative to laboratory testing experiences, safety practices, and technical information concerning operation and maintenance of multi-cylinder spark ignition and diesel engines. It is designed to give students practical experience within the home, school laboratories, or other facilities concerning power mechanics and other shop mechanics areas.

Large Engine & Advanced Power II ## 14511/14512

Semesters: 1 .5 Credit
Grade Placement: 10,11,12 Elective
Prerequisite: A "C" or better in Large Engine & Advanced Power I
Additional course fee required

This course is a continuation of Advanced Power I, with more learning activities and experiences with multi-cylinder spark ignition and diesel engines.

##Small Engine Mechanics, Large Engine & Advanced Power I, & Large Engine & Advanced Power II are also listed under the Agriculture Education Course Section.

For additional course selections, see the Kishwaukee College catalog for extended campus courses and also, Kishwaukee Consortium courses.