TECHNOLOGY EDUCATION (Formerly Industrial Technology)

Subject	Course Numbers	Units per course	Grade level offered				Prerequisites and related information
			9	10	11	12	
***Introduction to Engineering Design (IED)**	160313 /160314	1	X	X	X	X	Algebra I or CT Algebra I
***Principles of Engineering (POE)**	162612 /162613	1	X	X	X	X	Algebra I or CT Algebra I; Introduction to Engineering Design recommended
***Civil Engineering & Architecture (CEA)**	169521 /169522			X	X	X	Geometry and Introduction to Engineering Design
***Computer Integrated Manufacturing (CIM)**	162751 /162752						Introduction to Engineering Design; Principles of Engineering or Physics
***Architectural Drafting** (2-term course)	070611 /070612	1		X	X	X	Algebraic Principles or Algebra strongly recommended
***Engineering Drafting** (2-term course)	070211 /070212	1	X	X	X	X	Algebraic Principles or Algebra strongly recommended
Introduction to Electronics (2-term course)	044111 /044112	1	X	X	X	X	Algebra
Introduction to Robotics	162611	0.5		X	X	X	Algebra or Algebraic Principles
Basic Woodworking	041711	0.5	X	X	X	X	None
Advanced Woodworking	041721	0.5	X	X	X	X	Basic Woodworking
Basic Carpentry	041411	0.5		X	X	X	None
Cabinetmaking	041821	0.5	X	X	X	X	Advanced Woodworking
Furniture Construction	041811	0.5	X	X	X	X	Cabinetmaking
***Student Built Home**	041511 041512 041513 041514	3.0			X	X	Basic Carpentry and Basic Woodworking strongly recommended; a written application and instructor's recommendation is required
Metals, Materials, & Processes	241211	0.5	X	X	X	X	None
Advanced Metals, Materials, & Processes	241221	0.5	X	X	X	X	Metals, Materials, & Processes
Know Your Car	090111	0.5	X	X	X	X	None
***Basic Auto Mechanics**	090121	0.5	X	X	X	X	None
***Advanced Auto Mechanics**	090131	0.5	X	X	X	X	Basic Auto Mechanics
***Auto Technology I**	091211 091212 091213 091214	3.0			X	X	Advanced Auto Mechanics
***Auto Technology II**	091241 091242 091243 091244	3.0				X	Auto Technology I; application, counselor, & instructor recommendation required
***Basic Welding**	241411	0.5	X	X	X	X	None
***Advanced Welding**	241421	0.5	X	X	X	X	Basic Welding
***Vocational Welding I**	241511 241512 241521 241522	3.0			X	X	Advanced Welding; application required

TECHNOLOGY EDUCATION (Formerly Industrial Technology) (CONT)

Subject	Course Numbers	Units per course	Grade level offered				Prerequisites and related information
			9	10	11	12	
***Vocational Welding II**	241523 241524 241513 241514	3.0				X	Vocational Welding I, application required
Computer Graphics & Design	031511	0.5	X	X	X	X	None
Computer Graphics Printing (2-term course)	031521 /031522	1	X	X	X	X	Computer Graphics & Design **(West only)**
Advanced Computer Graphics	031531	0.5		X	X	X	Computer Graphics & Design
Microsoft A+	031821	0.5		X	X	X	None
Career Emphasis Internship	089642	1			X	X	Approval of Cooperative Work Experience Teacher
Career Exploratory Internship	089641	0.5			X	X	Approval of Cooperative Work Experience Teacher
Related Subjects (for Cooperative Work Experience) (2-term course)	160811 /160812	1				X	Concurrent enrollment in Cooperative Work Experience (for Related Subjects)
Cooperative Work Experience (for Related Subjects) (2-term course)	160611 /160612	2				X	Concurrent enrollment in Related Subjects (for Cooperative Work Experience)

*Successful completion of these courses may result in advanced placement and/or credit in certain post-secondary programs.

Students desiring cooperative training after completion of a vocational trade class will be given preference in subjects that are limited in enrollment because of facilities. Material fees are required in many of the courses.

Introduction to Engineering Design (IED) (160313/160314) Students use a problem-solving model to improve existing products and invent new ones. They learn how to apply this model to solve problems in and out of the classroom. Using sophisticated three-dimensional modeling software, students communicate the details of the products. Emphasis is placed on analyzing potential solutions and communicating ideas to others. **This is a dual credit/college course. Students may have the opportunity to receive 3 credit hours at U of I, ISU, or EICCD.**

Principles of Engineering (POE) (162612/162613) This course explores the wide variety of careers in engineering and technology and covers various technology systems and manufacturing processes. Using activities, projects, and problems, students learn first-hand how engineers and technicians use math, science, and technology in an engineering problem-solving process to benefit people. The course also addresses concerns about social and political consequences of technological change. **This is a dual credit/college course. Students may have the opportunity to receive 3 credit hours at U of I, ISU, or EICCD.**

Civil Engineering and Architecture(CEA) (169521/169522) This course is an overview of civil engineering and architecture. CEA emphasizes the inter-relationship and mutual dependence of both fields. Students use state-of-the-art software to solve real world problems and apply knowledge to hands-on projects and activities. By developing and implementing plans for a playground/park or vacation home, for example, students experience first-hand the job responsibilities of architects and civil engineers. By the end of the course students are able to give a complete presentation to the client, including three-dimensional renderings of buildings and improvements, zoning and ordinance constraints, infrastructure requirements, and other essential project plans. **This is a dual credit/college course. Students may have the opportunity to receive 3 credit hours at the U of I, ISU, or EICCD.**

Computer Integrated Manufacturing (CIM) (162751/162752) Students take the three dimensional modeling software skills learned in Introduction to Engineering Design to a whole new level. Using a three-dimensional model, students use automation, control systems, sensing devices, computer programming and robotics to efficiently mass produce products. Trouble-shooting is emphasized throughout the course. **This is a dual credit/college course. Student may have the opportunity to receive 3 credit hours at U of I, ISU, or EICCD.**

Architectural Drafting (070611/070612) This course will teach the basic skills needed to draw plans for homes. Students will learn construction techniques used to build structures. Hand drafting tools and computers will be used in this class.

Engineering Drafting (070211/070212) This course teaches the basics of mechanical drafting using hand tools and computers. Students will learn how to represent objects on paper as well as on the computer. Application of mathematical concepts to drafting will be included.

Introduction to Electronics (044111/044112) This course teaches an understanding of how electronic devices work, how they are built, and how they are repaired. Students learn how electricity works by performing lab experiments, building devices, and using a computer. They also learn how computer parts work.

Introduction to Robotics (162611) This "hands on" course will teach how to control a robot and other automated machines. Students will spend at least half the time with computers, writing, editing programs, and running computer robotics and automated devices. Students will also learn to control fluid powered and air-powered devices. This is a recommended course for students planning a career as an engineer or engineering technician.

Basic Woodworking (041711) The fundamentals of hand tools and machine woodworking will be taught through lecture, demonstration, and activities. Students will construct and apply a finish to a small wood item to develop skill in the use of tools and techniques. Safety will receive special emphasis. There is an additional fee for materials.

Advanced Woodworking (041721) Students will study wood finishing and wood identification. Students will construct an advanced wood project using power woodworking machines. There is an additional fee for materials.

Basic Carpentry (041411) The fundamentals of building construction will be taught through lecture, demonstration, and activities. Students will use construction models and will build a small structure to develop skill in the fundamentals of building construction.

Cabinetmaking (041821) Advanced machine woodworking procedures and cabinet construction procedures will be taught by planning and building small furniture and cabinet-carcass type projects. There is an additional fee for materials.

Furniture Construction (041811) Advanced machine woodworking procedures will be employed to construct drawers and doors through the use of dovetail joints, box joints, rail and stile, and raised panel-type operations to complete projects in small furniture and cabinet styles. There is an additional fee for materials.

Student Built Home (041511/041512/041513/041514) This course is designed to give hands-on experience in many aspects of the building trades. Students will help build an actual home at a construction site. The house will be completed by the close of the school year then sold. Safety will be stressed throughout. Tools, equipment, and a hard hat will be **provided. Safety glasses, work shoes, and work clothes are to be furnished by the student. An application must be completed. A screening process, which takes into consideration attendance, discipline record, GPA, and recommendation from teacher /counselor will be used to determine final participants.** Basic Carpentry and Basic Woodworking are strongly recommended. Seniors meeting the requirements will be given priority over juniors. Teacher recommendation will be weighed heavily. Note: Students must arrange own reliable transportation. SCHOLARSHIPS FOR COLLEGE OR CARPENTRY TOOLS ARE READILY AVAILABLE UPON SUCCESFUL COMPLETION OF THIS COURSE.

Metals, Materials, & Processes (241211) This is an introductory course in the use of metal as a building material. Students will learn to turn pieces of metal into useful items through the use of forge and foundry machine tools, grinding, and cutting equipment. Safety will be given special emphasis. There is an additional fee for materials.

Advanced Metals, Materials, and Processes (241221) The student will gain skills by building personal projects utilizing the skills acquired from the basic course. The occupations associated with the various areas and their requirements for entrance will be studied, as well as the technologies of the modern metalworking industries. There is an additional fee for materials.

Know Your Car (090111) This course is designed for car owners, not necessarily future mechanics. Introductory level instruction and lab activities provide learning experiences valuable to anyone that owns, or plans to own a car. Consumer knowledge related to buying automotive products, used vehicles, insurance, and new cars is included. Many lab activities enable students to perform vehicle component maintenance, replacement, and inspection.

Basic Auto Mechanics (090121) This is an introductory course dealing with the importance of construction and operating principles of the modern automobile. Operating systems such as brakes, electrical, and basic engine construction and operation will be covered in both textbook (theory) and lab (practical) instruction.

Advanced Auto Mechanics (090131) A continuation of Basic Auto Mechanics, this course deals with service procedures and repair techniques. The use of modern diagnosis protocols dealing with computerized controls will also be covered. Occupational outlook and preparation are stressed.

Auto Technology I (091211/091212) Upon completion of this course, students will demonstrate an understanding of the skills necessary to be a successful entry-level auto technician. This will include:

- Disassembly and rebuilding of an auto engine
- Effective use of computer diagnostic systems and equipment
- Rapid use of printed and computer diagnostic manuals
- Service and repair of automatic transmission systems including computer controlled systems and all-wheel drive systems
- Chassis service to include MacPherson struts and all-wheel alignment
- Automatic air conditioning

In addition, the students will learn welding skills and electronics, as needed, to prepare them for ASE certification.

Auto Technology II (091241/091242) This course will focus on the practical application of skills learned in Auto Technology I. Students participating in this class will participate in a two-week internship at a local automotive dealership and will design, implement, and produce a group project relating to the Automotive Industry. They will also operate the auto lab as a dealership service area scheduling all repair work and work schedules of the others in the class. An application must be completed. A screening process that takes into consideration attendance, discipline record, Auto Technology I grades, and a recommendation from a teacher and counselor will be used to determine final participants. Auto Technology I is a prerequisite.

Basic Welding (241411) This is an introductory course which includes practice in both oxyacetylene and arc welding and their applications to various occupations. The use and operation of back-up equipment such as grinders, drill presses, and test equipment is also taught. The course is designed around welding exercises, although some outside work is assigned. Welding cap and gloves will be required. There is an additional fee for materials.

Advanced Welding (241421) This course provides additional skill and knowledge in using the arc, oxyacetylene, and MIG welders. The student will also learn to use the TIG welder and become knowledgeable of its use in industry. There is an additional fee for materials.

Vocational Welding I (241511/241512/241521/241522) The Vocational Welding Program is **registered with the American Welding Society as a participating SENSE Program** which provides successful completers with entry-level certifications recognized all over the world by welding professionals. Class begins at 6:45 a.m. and runs for the entire school year. An application must be submitted to qualify. This program awards dual credit from **Scott Community College for: WEL 129 Gas Metal Arc Welding/Basic – 4.25 semester credits & WEL 133 Gas Tungsten Arc Welding – 2.5 semester credits.**

Vocational Welding II (241523/241524/241513/241514) Designed to build on the fundamentals of the Vocational Welding I program; this fourth course focuses heavily on real-life job site preparedness and responsibilities. Safety attitudes, fabrication techniques, individual and team projects, and certification level welding skill attainment are all responsibilities of the program. An application must be submitted. Selection will focus on the successful completion of Vocational Welding I, attendance, disciplinary history, graduation requirements, and safety history in Industrial Technology courses. This is a senior level course, which meets five days a week, for approximately 3 hours a day, and often corresponds with the Cooperative Work Experience program. This program awards dual credit from **Scott Community College for: WEL 217 Gas Metal Arc Welding/Advanced – 1.25 semester credits.**

Computer Graphics & Design (031511) This course is designed to prepare students for the career fields of computer graphics and computer-assisted design. This introductory course will provide students a background in both the hardware and software associated with basic graphic techniques, drafting, and commercial design. Students will be required to learn computer keyboard operations and will use various graphic peripherals to solve basic design problems.

Computer Graphics Printing (031521/031522) This course explores the principles and elements of design and challenges students through the production of creative solutions for promoting a variety of products and services; emphasizes building brand recognition and corporate identity through design campaigns; explores the role of the design team in generating creative design solutions; focuses on writing and verbalizing advanced design concepts; and assumes an intermediate working knowledge of industry standard software. It focuses on design using the appropriate software for organization and placement of design assets within print layouts, creative concepts, type specification, grid construction and destruction, color separation, history of layout design, copyright issues, and working with printers.**(West Only)**

Advanced Computer Graphics (031531) This course introduces elements and principles of design as applied to visual communication and covers career information and the history of the field, as well as the traditional graphic design tools and materials. Students practice advanced vector and raster drawing techniques. Students are challenged to produce strong, creative solutions for a variety of design problems with industry standard software. Students work in teams, communicate effectively, and produce digital portfolios.

Microsoft A+ (031821) This course covers the concepts and skills for repair and support of Windows 98, XP, and Vista computers. It emphasizes the following areas: planning and customizing; building of a computer; and trouble-shooting the operating and hardware systems.

Career Exploration Internship (089641) Students will have an opportunity to learn first-hand about a career of interest by volunteering (unpaid) at a business or community work site. A written proposal will be jointly agreed upon between the student and the cooperative work experience teacher. This can also include working in a school setting if the student has a faculty member who will be their sponsor/supervisor. Students will perform a variety of tasks that expose them to many facets of their career choice. The internship will enable students to obtain valuable knowledge and skills to help them make informed decisions about their future. Students must have at least a 2.5 GPA, an excellent attendance/discipline record, and a recommendation from a teacher/counselor. Applications may be picked up from the student's counselor. (See page 10 for details.)

Career Emphasis Internship (089642) Students will have an opportunity to work at one or more sites to gain in-depth knowledge and skills first-hand about one or more career fields. A written proposal will be jointly agreed upon between the student and the cooperative work experience teacher. Work experiences may consist of a variety of timeframes with possible periods of unemployment filled with volunteer service projects, self-directed studies, and school-related activities. Students may be paid for some of their work, but it depends on the situation(s). Placements will be dependent upon available sites and the student's skills. Students must have at least a 2.5 GPA, an excellent attendance/discipline record, and a recommendation from a teacher/ counselor. Recommendations for scholarship applications and opportunities for future employment based on contacts made during a successful internship experience are excellent. Applications may be picked up from the student's counselor. (See page 10 for details.)

COOPERATIVE WORK EXPERIENCE PROGRAMS

This is a program that is carried on cooperatively between the student, the school, and a business or industry. Students enrolled in this program attend regular classes one-half day and work in industry the other half day. Students 16 years of age or older, and classified as seniors, are eligible to make application. The application is to be obtained from, and returned to, your counselor. All students must enroll for both the Related Subjects (Cooperative Work Experience) and Cooperative Work Experience courses.

Related Subjects (for Cooperative Work Experience) (160811/160812) This class includes the teaching of fundamental principles that determine success on the job such as employer-employee relations, personal adjustment, money management, insurance, etc., along with related mathematics or other topics pertinent to the job.

TECHNOLOGY EDUCATION (Formerly Industrial Technology)(CONT)

Cooperative Work Experience (for Related Subjects) (160611/160612) Students enrolled in this course will be required to complete a minimum of 15 hours per week in the business of their employer. The number of hours of work plus the actual number of class hours at school should not exceed 40 hours per week. Students are not guaranteed a job.

Independent Study Industrial Technology (169611) This course is designed to allow the student to pursue an area of study not available in our standard offerings. Before registering for the course, the student must secure a faculty advisor who is convinced of the student's ability to carry out independent study and who is willing to supervise the student's program. A proposed plan of study must be submitted to the instructor before registration. That plan must be approved by the instructor, department chairperson, the student's counselor and the principal. Independent study does not meet as a regularly scheduled class. Conferences are arranged between teacher and student as needed.

WORLD LANGUAGES

Subject	Course Numbers	Units per course	Grade Level Offered				Prerequisites and Related Information
			9	10	11	12	
Introduction to Classical Languages	126311 /126312	.5/term		X	X	X	None (Central & West)
French I (2-term course)	120511 /120512	1	X	X	X	X	None
French II (2-term course)	120521 /120522	1	X	X	X	X	French I
French III (2-term course)	120531 /120532	1	X	X	X	X	French II
French IV (2-term course)	120541 /120542	1		X	X	X	French III
AP French (3-term course)	120611 /120612 /120613	1.5			X	X	French IV
French Civilization (2-term course)	129921 /129922	1			X	X	French IV (Even years 2008, 2010)
French Literature (2-term course)	129931 /129932	1			X	X	French IV (Odd years 2009,2011)
German I (2-term course)	121011 /121012	1	X	X	X	X	None
German II (2-term course)	121021 /120122	1	X	X	X	X	German I
German III (2-term course)	121031 /121032	1	X	X	X	X	German II
German IV (2-term course)	121041 /121042	1		X	X	X	German III
Spanish I (2-term course)	120111 /120112	1	X	X	X	X	None
Spanish II (2-term course)	120121 /120122	1	X	X	X	X	Spanish I
Spanish III (2-term course)	120131 /120132	1	X	X	X	X	Spanish II
Spanish IV (2-term course)	120141 /120142	1		X	X	X	Spanish III
AP Spanish (3-term course)	120211 /120212 /120213	1.5			X	X	Spanish IV
Hispanoamerica (2-term course)	129941 /129942	1			X	X	Spanish IV (Even years 2008, 2010)
Iberia (2-term course)	129951 /129952	1			X	X	Spanish IV (Odd years 2009, 2011)

There are many excellent reasons for studying a World Languages whether you enter the business world or choose to continue your education beyond high school. If you desire to speak, to translate, and to write a World Language and to enhance your own cultural background, you are encouraged to visit with one of the language teachers and to enroll in the course of your choice. World Languages requirements at the college and university level vary. To learn entrance and graduation requirements for a specific college or university, consult the respective college catalog or your counselor. Students may begin study of a World Language in grades 7, 8, 9, 10, 11, or 12. Prerequisites for Levels II, III, IV, and beyond include successful completion of both terms of the preceding level and/or departmental approval.