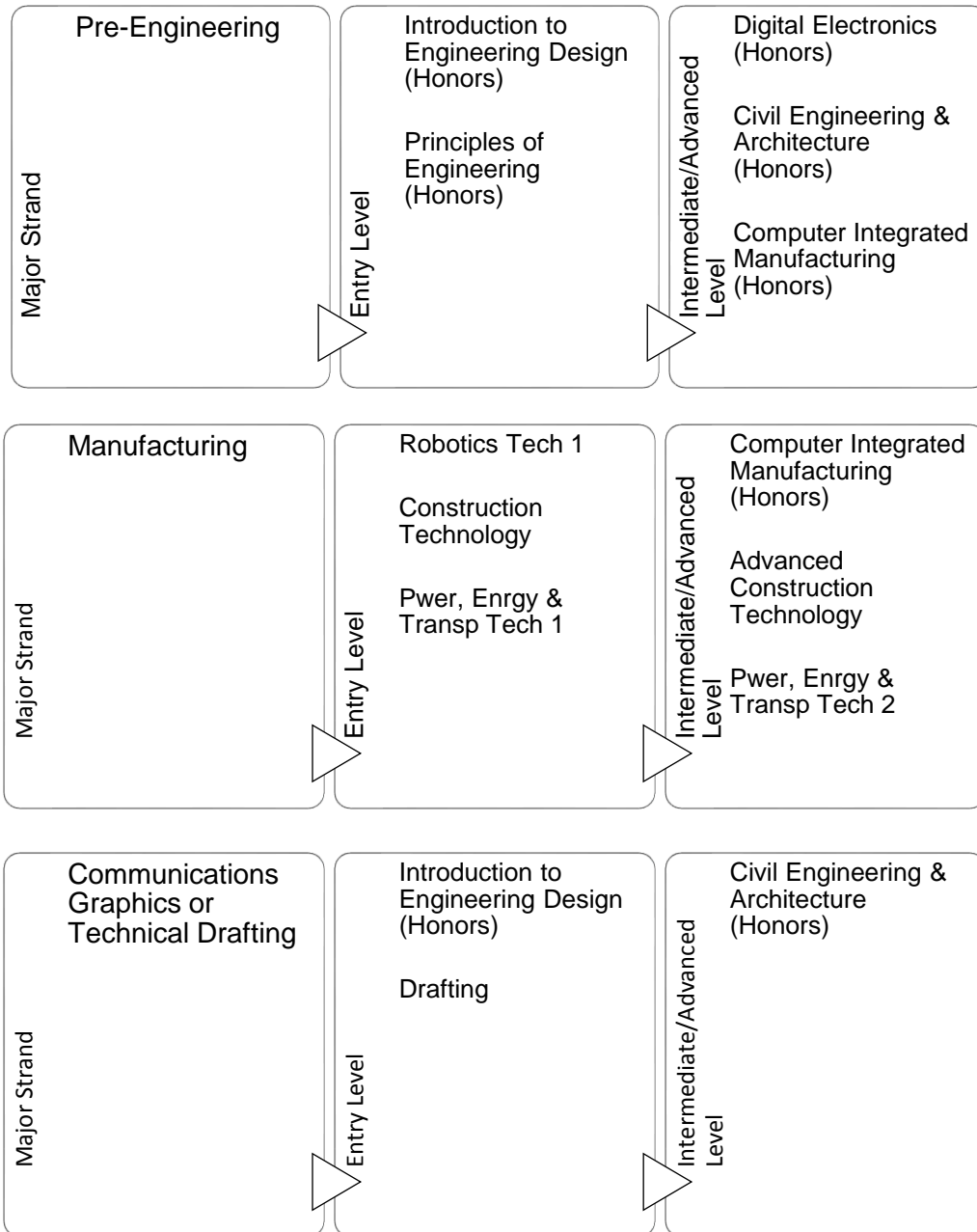


TECHNOLOGY AND ENGINEERING EDUCATION



TECHNOLOGY AND ENGINEERING EDUCATION

108711/108712

Honors Introduction to Engineering Design
Infinite Campus Name: +INT ENG DSN
Grade(s): 09 - 12
Prerequisite: None
1/2 CTE credit each semester

This honors course develops students' problem-solving skills, with emphasis on visualization and communication skills, using a computer and a 3-D solid modeling software. The student will learn to combine models into assemblies and animate the new assembled model in order to assess operation in a practical representation. Students will also learn how to import or convert the model for visual presentation or fabrication/prototyping possibilities. Students can receive 3 semester hours of transcribed college credit. A weighted grade is given for this course.

108751/108752

Honors Principles of Engineering
Infinite Campus Name: +PRIN OF ENG
Grade(s): 10 - 12
Prerequisite: None
1/2 CTE credit each semester

This honors course is designed to be a broad-based survey course that will help students understand engineering, engineering technology and identify career possibilities. Theoretical and hands on problem-solving activities are emphasized. In this course, the students will be able to understand 3-D modeling and general engineering design principles, mechanical assembly and design, electronic control circuits, statics, properties of materials, and engineering job opportunities. Students can receive 3 semester hours of transcribed college credit. A weighted grade is given for this course.

108451/108452

Honors Digital Electronics
Infinite Campus Name: +DIGITAL ELEC
Grade(s): 10 - 12
Prerequisite: None
1/2 CTE credit each semester

This honors course introduces students to applied digital logic, a key element of careers in engineering and engineering technology. This course explores the smart circuits found in watches, calculators, video games and computers. Students use industry-standard computer software in testing and analyzing digital circuitry. They design circuits to solve problems, export their designs to a printed circuit auto-routing program that generates printed

circuit boards, and use appropriate components to build their designs. Students use mathematics and science in solving real-world engineering problems. This course covers several topics, including: analog and digital fundamentals, number systems and binary addition, logic gates and functions, Boolean algebra and circuit design, decoders, multiplexers and de-multiplexers. Students can receive 3 semester hours of transcribed college credit. A weighted grade is given for this course.

108201/108202

Honors Civil Engineering and Architecture
Infinite Campus Name: +CIVIL ENGI ARCH
Grade(s): 10 - 12
Prerequisite: Introduction to Engineering Design, Drafting, or teacher approval
1/2 CTE credit each semester

This honors course provides an overview of the fields of Civil Engineering and Architecture, while emphasizing the interrelationship and dependence of both fields on each other. Students use state of the art software to solve real world problems and communicate solutions to hands-on projects and activities. This course covers topics such as: The Roles of Civil Engineers and Architects, Project Planning, Site Planning, Building Design, and Project Documentation and Presentation. Students can receive 3 semester hours of transcribed college credit. A weighted grade is given for this course.

108211/108212

Honors Computer Integrated Manufacturing
Infinite Campus Name: +COMP INT MAN
Grade(s): 10 - 12
Prerequisite: Robotics, Any PLTW Class, or Teacher Approval
1/2 CTE credit each semester

This is a honors course that applies the principles of robotics and automation. Students use CNC equipment to produce actual models of their three-dimensional designs. Fundamental concepts of robotics used in automated manufacturing and design analysis are included. Students will utilize RoboCell, Edge Cam, and Inventor software throughout the course. Students will also learn about G-code programming and tooling for CNC machining. Students can receive 3 semester hours of transcribed college credit. A weighted grade is given for this course.

TECHNOLOGY AND ENGINEERING EDUCATION

107680

Robotics Technology 1

Infinite Campus Name: ROBOTCS TECH

Grade(s): 09 - 12

Prerequisite: None

1/2 CTE credit each semester

The field of robotics requires a working knowledge of electronics, mechanics and software. It is usually accompanied by a large working knowledge of many subjects. Focusing on mobile robots and using a hands-on, collaborative approach, students will be introduced to the basic concepts/systems, terminology, and programming involved in robotics. This course will be of specific interest to students interested in applications of electronics, computer science, and physics.

107070

Drafting

Infinite Campus Name: DRAFTING

Grade(s): 09 - 12

Prerequisite: None

1/2 CTE credit each semester

Drafting is the universal language of industry, as it is used in technical fields such as architecture, electrical, machining, and mechanical technologies. In this course, students will become familiar with the fundamentals of drafting and the significance it has in our present way of life. Areas to be covered include sketching, mechanical drawing, pictorials, views of objects, and dimensioning. Students will use conventional techniques and/or CAD to complete drawings.

107500

Construction Technology

Infinite Campus Name: CONSTR TECH

Grade(s): 09 - 12

Prerequisite: None

1/2 CTE credit each semester

Students will study the construction industry and methods used in construction. The major areas of investigation in the course are planning, designing and constructing the project. Students will know how a building is constructed from the beginning planning to the completion of roof and interior. Installation of mechanical systems, electrical systems, plumbing systems, and other systems will be studied. Many activities will be incorporated to demonstrate and reinforce the lessons. Students interested in engineering, architecture, and building trades careers may find this course of great benefit. Students may be asked to purchase consumables.

107510

Advanced Construction Technology

Infinite Campus Name: ADV CONS TCH

Grade(s): 09 - 12

Prerequisite: Construction Technology

1/2 CTE credit each semester

In this semester course, students will apply the technical skills learned in Construction Technology. Students will experience project design and site preparation, substructures and superstructures, utilities installation, enclosure, finishing and landscaping. Students will develop a project from conception to completion.

107050

Power, Energy, and Transportation Technology 1

Infinite Campus Name: PWR/EGY TEC1

Grade(s): 09 - 12

Prerequisite: None

1/2 CTE credit each semester

Engineering and technology students will explore the prime movers for technology. The students study control and transmission of electrical, fluid, thermal, and mechanical energies. After learning the components for each prime mover system through practical application, the student couples power sources to control devices to transmit power to output equipment. In addition, students explore careers that use power and energy technology. Students may be asked to purchase consumables.

107060

Power, Energy, and Transportation Technology 2

Infinite Campus Name: PWR/EGY TEC2

Grade(s): 09 - 12

Prerequisite: Power, Energy and Transportation Technology 1

1/2 CTE credit each semester

Engineering and technology students experience electrical, fluids, thermal and mechanical energy applications. The students use the knowledge and skills learned in Power, Energy and Transportation 1 to solve problems associated with power, energy and transportation systems. Students research transportation systems topics. Students learn about small engines by removing parts of the engine and assembling them to restore the engines to running condition. Once the engine is running, the student couples it to drive hydraulic, pneumatic, or electrical output devices to provide direct application of the scientific principles supporting the power and energy application. In addition,

TECHNOLOGY AND ENGINEERING EDUCATION

students explore careers in power and energy technology.
Students may be asked to purchase consumables.

107120

Design and Technology 1

Infinite Campus Name: DESIGN TECH 1

Grade(s): 09 - 12

Prerequisite: None

1/2 CTE credit each semester

This is the first course in a two semester sequence of courses that provides opportunities for students to explore technologies in communications, design engineering, power, energy and transportation. Students will explore the fundamentals of Computer Aided Design Software and its application in the design process. Students will develop the necessary skills in design and problem solving to enable them to undertake a variety of problem solving and design tasks.

107130

Design and Technology 2

Infinite Campus Name: DESIGN TECH 2

Grade(s): 09 - 12

Prerequisite: Design Tech 1 or Consent of Instructor

1/2 CTE credit each semester

This is the second course in a two semester sequence of courses that provides opportunities for students to explore technology. In Design and Technology II, students cover information on the following systems: structural, mechanical, fluid, and alternative energy. Students analyze applications of technology through a process of investigation and exploration in these fields which create and produce manufactured goods, products, structures, and services in our society.