

STEM

◆Course offerings not having sufficient enrollment after registration will be discontinued for the 2018-2019 school year.

◆Course offerings may meet the Approved Required Offerings.

ENTRY LEVEL –

Introduction to Technology Education (9-10-11-12)

**Semester - 1/2 Credit
One Year - 1 Credit**

► *Approved Career and Technical Education Course*

This course is designed for students to explore the wide variety of technology, manufacturing and their applications. Students learn basic levels of skill and knowledge in shop and tool safety. Learning to create and understand working drawings, students will apply their knowledge towards woodworking and metal projects. Students will design, layout and fabricate projects, demonstrating hand and machine tool skills, joinery, welding, clamping, and finishing techniques.

The course prepares students for more effective living in a growing industrial and highly technological society. The laboratory 'hands-on' approach in technology education provides experiences for students to assist them in discovering and developing aptitudes and interests in technology.

SYSTEMS LEVEL –

Introduction to Manufacturing (10-11-12)

One Year - 1 credit

► *Approved Career and Technical Education Course*

► *Completion or concurrent registration in Integrated Math 2 is recommended*

Students will study the design and engineering of products along with strategies of industry. This course will provide the knowledge and technical skills that will be use full in life situations of occupational, recreational, consumer and socio-cultural significance. Modern design and production methods used will include: Computer-Aided-Design (CAD), Computer-Aided-Manufacturing (CAM) and Computer-Numerical-Controls (CNC). Student production activities will have the opportunity to design, produce, and market a final product.

Computer-Aided Design (CAD) Design and Development (10-11-12)

One Year - 1 credit

► *Approved Career and Technical Education Course*

► *Completion of Integrated Math 1 and Integrated Math 2 with a grade of C or better is higher is essential for success in this class.*

This course is designed for students considering a career in the field of mechanical, technical, and architectural design or related technology. Students will learn the fundamental concepts, tools, and commands of the CADD software through interactive hands on projects and activities. Basic design knowledge will incorporate the skills necessary to draw, edit, set up and plot drawings, as well as exhibit 2D drawings and 3D models. Students will also learn to identify detailed components of CADD drawings, parts, and assemblies through projects. The class will build a foundation of skills so students will understand how projects are built and application of the manufacturing process.

SYNTHESIS LEVEL –

Introduction To Engineering (11-12)

One Year - 1 Credit

▶ *Approved Career and Technical Education Course*

▶ *This course may not apply to laboratory science requirements at some colleges.*

▶ *This course may be repeated, with new content, for additional credit.*

▶ *Completion of Integrated Math 1 and Integrated Math 2 with a C or higher is essential for success in this class.*

This course is designed for students considering a career in the field of engineering or related technology. Students will work to solve product design problems and complete detail and pictorial drawings using CAD drawing techniques. They will design and create a product, either individually or as part of a small group, test it, and make the drawings necessary for production. CNC (Computer Numerical Control), laser engraver, 3D printing, advanced metalworking, and advanced woodworking is introduced in this course.