



The following programs of study are available within the Science, Technology, Engineering and Mathematics cluster.

- Engineering and Technology
- Science and Math

9470CT

Formerly Computer Applications

Concepts of Engineering & Architectural Technology

- ⇒ *Grade Placement 9-12*
- ⇒ *Credit 1 Unit*
- ⇒ *Recommended Prerequisite Strong Mathematics skills*
- ⇒ *Past Prereq Strong Mathematics skills*

This is an introductory level class for students considering a career in engineering or architecture. Students will use a variety of computer hardware and software applications used in the engineering and architectural fields. Emphasis will be placed on introduction to drafting through the use of AutoCAD and Inventor as well as introductory level computer assisted design and manufacturing through the use of CAD/CAM software. Students will be responsible for purchasing materials or assessed a fee associated with this course.

9474CT

Formerly Engineering Graphics

Engineering Design and Presentation

- ⇒ *Grade Placement 10-12*
- ⇒ *Credit 1 Unit*
- ⇒ *Prerequisite Concepts of Engineering & Architectural Technology*
- ⇒ *Past Prereq Computer Applications*

This is a laboratory course for students considering a career in engineering. Students will use multiple software applications to produce and present working drawings, solid model renderings, and prototypes. Students will transfer advanced academic skills to component designs. Students will be responsible for purchasing materials or assessed a fee associated with this course. **Advanced Technical Credit and Tech Prep college credit are available through community colleges in Texas.**

9480CT

Formerly Research, Design and Development

Problems and Solutions in STEM

- ⇒ *Grade Placement 11-12*
- ⇒ *Credit 1 Unit*
- ⇒ *Prerequisite Concepts of Engineering & Architectural Technology and either Architectural Design or Engineering Design & Presentation and Approval Process*
- ⇒ *Past Prereq Computer Applications and either Architectural Graphics or Engineering Graphics and Approval Process*

This is a project-based course for students to research a real-world problem. Students develop a project on a topic related to career interests, use scientific methods of investigation to conduct in-depth research, compile findings, and present their findings. To attain academic success, students must have opportunities to learn, reinforce, apply, and transfer their knowledge, skills, and technologies in a variety of settings. Students will be responsible for purchasing materials or assessed a fee associated with this course. **This course receives advanced grade points. This course is designed to provide students an opportunity to earn one advanced measure for the Distinguished Achievement Program.**

9638CT*Formerly Direct Current Electronics and Alternating Current Electronics***Electronics**

- ⇒ *Grade Placement 10-12*
- ⇒ *Credit 1 Unit*
- ⇒ *Prerequisite None*

Students enrolled in this course will demonstrate knowledge and applications of circuits, electronic measurement, and electronic implementation. Through use of the design process, students will transfer academic skills to component designs in a project-based environment. Students will use a variety of computer hardware and software applications to complete assignments and projects. Additionally, students explore career opportunities, employer expectations, and educational needs in the electronics industry. Students may be eligible to take an industry standard certification test.

9639CT**New Course****Advanced Electronics**

- ⇒ *Grade Placement 11-12*
- ⇒ *Credit 2 Units*
- ⇒ *Prerequisite Electronics*
- ⇒ *Past Prereq Direct Current Electronics*

Students enrolled in this continuation course will demonstrate knowledge and application of advanced circuits, electrical measurement, and electrical implementation used in the electronics and computer industries. Through use of the design process, students will transfer advanced academic skills to component designs in a project-based environment. Additionally, students explore career opportunities, employer expectations, and educational needs in the industry. Students may be eligible to take an industry standard certification test.

9641CT**New Course****Robotics and Automation**

- ⇒ *Grade Placement 11-12*
- ⇒ *Credit 1 Unit*
- ⇒ *Prerequisite Electronics I or Concepts of Engineering & Architectural Technology and Approval Process*
- ⇒ *Past Prereq Direct Current Electronics or Introduction to Electrical/Electronics Careers or Computer Applications and Approval Process*

Students enrolled in this course will demonstrate knowledge and skills necessary for the robotics and automation industry. Through implementation of the design process, students will transfer advanced academic skills to component designs in a project-based environment. Students will build prototypes or use simulation software to test their designs. Additionally, students explore career opportunities, employer expectation, and education needs in the robotic and automation industry. Students will be responsible for purchasing materials or assessed a fee associated with this course.

I (2hr-9677CT) (3 hr-9676CT) II (2hr-9679CT) (3hr-9678CT)**Career Preparation I, II**

- ⇒ *Grade Placement 11-12*
- ⇒ *Credit I 2-3 Units, II 2-3 Units*
- ⇒ *Prerequisite 16 years of age and Approval Process*

A work-based learning program that combines occupationally related classroom instruction and work-based experiences. Students work in a skilled occupation relating to communications and media, construction and maintenance, electrical and electronics, industrial and manufacturing, safety and security, metal technology, automotive/transportation or other specialty areas. Safety, entrepreneurship, leadership and career opportunities are included with work ethics and job related study in the classroom. Students must provide their own transportation to their training station. This course is offered at Klein High School.