OPENING DOORS TO THE FUTURE

Science, Technology, Engineering, Mathematics Endorsement
Business and Industry
Advanced Manufacturing and Machinery Mechanics

Grade	Language Arts	Math	Science	Social Studies	Required CTE Courses	Potential Certification Opportunities
9th	English I	Algebra I	Biology	World History	***Principal of Applied Engineering (1 Credit)**	*Certified Quality Technician
10th	English II	Geometry	Chemistry		***Robotics 1 (1 Credit)**	
11th	English III	Algebra II	Approved 3rd Year Science	U.S. History	***Robotics 2 (1 Credit)**	
12th	English IV **OR** Approved 4th Year English	Approved 4th Year Math	Approved 4th Year Science	Government **AND** Economics	***Practicum in Manufacturing (2 Credits)**	

Required Electives
***Business Information Management (1 Credit)** ***Professional Communication (.5 Credit)** ***Dollars and Sense (.5 Credit)**

Sample Career Opportunities	High School	On the Job Training	Certificate	Associate's Degree	Bachelor's Degree	Advanced College Degree	Average Annual Salary	Possible Majors
Electrical Engineer					X	X	$98,405	*Electrical Engineer *Engineering, General *Mechanical Engineer *Industrial Engineer
Electro-Mechanical Assemblers	X	X					$30,160	
Electro-Mechanical Technicians				X			$56,555	
Industrial Machinery Mechanics	X	X		X			$49,816	

OPENING DOORS TO THE FUTURE

STEM Endorsement

Advanced Manufacturing and Machinery Mechanics

(Requires: Algebra 2, Chemistry, **AND** Physics)

Principles of Applied Engineering
TSDS PEIMS Code: 13036200 (PRAPPENG)
Grade Placement: 9–10 Credit: 1
GHS Section 2060
Available as a CTE Elective
Prerequisite: None.

Principles of Applied Engineering provides an overview of the various fields of science, technology, engineering, and mathematics and their interrelationships. Students will develop engineering communication skills, which include computer graphics, modeling, and presentations, by using a variety of computer hardware and software applications to complete assignments and projects. Upon completing this course, students will understand the various fields of engineering and will be able to make informed career decisions. Further, students will have worked on a design team to develop a product or system. Students will use multiple software applications to prepare and present course assignments.

Robotics I
TSDS PEIMS Code: 13037000 (ROBOTIC1)
Grade Placement: 9–10 Credit: 1
GHS Section 2052
Available as a CTE Elective
Prerequisite: None.
Recommended Prerequisite: Principles of Applied Engineering.

In Robotics I, students will transfer academic skills to component designs in a project-based environment through implementation of the design process. Students will build prototypes or use simulation software to test their designs. Additionally, students will explore career opportunities, employer expectations, and educational needs in the robotic and automation industry.

Robotics II
TSDS PEIMS Code: 13037050 (ROBOTIC2)
Grade Placement: 10–12 Credit: 1
GHS Section 2053
Designated for Pathway Students
Prerequisite: Robotics I.

In Robotics II, students will explore artificial intelligence and programming in the robotic and automation industry. Through implementation of the design process, students will transfer academic skills to component designs in a project-based environment. Students will build prototypes and use software to test their designs.
Note: This course satisfies a math credit requirement for students on the Foundation High School Program.

Practicum in Manufacturing
TSDS PEIMS Code: 13033000
Grade Placement: 10–12 Credit: 1
GHS Section _____
Designated for Pathway Students
Prerequisites: Algebra I and Biology, Chemistry, IPC or Physics.

The Practicum in Manufacturing course is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.