

OPENING DOORS TO THE **FUTURE**



STEM Endorsement *Renewable Energy CTE Pathway* *(Electronics)* (Requires Algebra 2, Chemistry, **AND** Physics)

Grade	Language Arts	Math	Science	Social Studies	Required CTE Courses	Potential Certification Opportunities
9 th	English I	Algebra I	Biology	World History	*Principles of Applied Engineering	
10 th	English II	Geometry	Chemistry		* AC/DC Electronics	
11 th	English III	Approved 3 rd Year Math	Approved 3 rd Year Science	U.S. History	*Solid State Electronics	
12 th	English IV	Approved 4 th Year Math	Approved 4 th Year Science	Government AND Economics	*Digital Electronics	

Sample Career Opportunities	High School	On the Job Training	Certificate	Associate's Degree	Bachelor's Degree	Advanced College Degree	Average Annual Salary	Possible Majors
Electronics Field Technician	X	X	X	X			\$32,000	* Biomedical Engineers
Electricians	X	X	X	X			\$55,477	* Computer Hardware Engineers
Computer Hardware Engineers					X	X	\$145,000	*Electrical Engineering,
Biomedical Engineers					X	X	\$84,780	*Engineering, General

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STEM Endorsement ***Renewable Energy CTE Pathway*** ***(Electronics)***

Principles of Applied Engineering

TSDS PEIMS Code: 13036200

Grade Placement: 9–12

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.

Introduction to Renewable Energy

TSDS PEIMS Code: 13036800

Grade Placement: 10–12

Credit: 1

GHS Section 2073

Available as a CTE Elective

Prerequisite: None.

Recommended Prerequisite: Principles of Applied Engineering

AC/DC Electronics focuses on the basic electricity principles of alternating current/direct current (AC/DC) circuits. Students 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 will explore career opportunities, employer expectations, and educational needs in the electronics industry.

Solid State Electronics

TSDS PEIMS Code: 13001100

Grade Placement: 11–12

Credit: 1

GHS Section 2074

Designated for Pathway Students

Prerequisite: None.

Recommended Prerequisite: AC/DC Electronics.

In Solid State Electronics, students will demonstrate knowledge and applications of advanced circuits, electrical measurement, and electrical implementation used in the electronics and computer industries. Students will transfer advanced academic skills to apply engineering principles and technical skills to troubleshoot, repair, and modify electronic components, equipment, and power electronic systems in a project-based environment. Additionally, students will explore career opportunities, employer expectations, and educational needs in the electronics industry. Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other leadership or extracurricular organizations

Digital Electronics

TSDS PEIMS Code: 13037600

Grade Placement: 11–12

Credit: 1

GHS Section 2075

Designated for Pathway Students

Prerequisite: None.

Recommended Prerequisite: Algebra 1 and Geometry.

Digital Electronics is the study of electronic circuits that are used to process and control digital signals. In contrast to analog electronics, where information is represented by a continuously varying voltage, digital signals are represented by two discrete voltages or logic levels. This distinction allows for greater signal speed and storage capabilities and has revolutionized the world of electronics. Digital electronics is the foundation of modern electronic devices such as cellular phones, digital audio players, laptop computers, digital cameras, and high-definition televisions. The primary focus of Digital Electronics is to expose students to the design process of combinational and sequential logic design, teamwork, communication methods, engineering standards, and technical documentation.

Note: This course satisfies a math credit requirement for students on the Foundation High School Program.