



Level 1	09877 / H09878 (AC) / H09877 Introduction to Engineering Design (PLTW)
Level 2	09792 / H09798 (AC) / H09792 Environmental Sustainability
Level 3	09780 / H09762 (AC) / H09780 Engineering Science
Level 4	09778 Engineering Design and Problem Solving 09787 / H09768(AC) / H09787 Engineering Design and Development 19778 / H19778 Engineer Your World Dual Credit Science

HIGH SCHOOL/INDUSTRY CERTIFICATION	CERTIFICATE/LICENSE*	ASSOCIATE'S DEGREE	BACHELOR'S DEGREE	MASTER'S/DOCTORAL PROFESSIONAL DEGREE
Autodesk Certified Professional or User (ACU)-Inventor	Engineer, Professional	Electrical and Electronics Engineering	Electrical and Electronics Engineering	Electrical and Electronics Engineering
Certified SolidWorks Associate (CSWA)	Fluid Power Systems Designer	Drafting and Design Technology/ Technician, General	CAD/CADD Drafting and/or Design Technology/ Technician	Mechanical Engineering
Certified Engineering Technician-Audio Systems	Certified Biomedical Auditor	Engineering Technology	Bioengineering and Biomedical Engineering	Bioengineering and Biomedical Engineering
	Certified Cost Estimator/Analyst		Construction Engineering Technology/ Technician	

Occupations	Median Wage	Annual Openings	% Growth
Aerospace Engineers	\$110,843	481	9%
Industrial Engineers	\$97,074	1,263	10%
Mechanical Engineers	\$91,107	1,535	11%
Chemical Engineers	\$112,819	474	9%
Electrical Engineers	\$98,405	1,137	10%

Additional industry-based certification information is available on the TEA CTE website. For more information on postsecondary options for this program of study, visit TXCTE.org.

WORK BASED LEARNING AND EXPANDED LEARNING OPPORTUNITIES	
Exploration Activities:	Work Based Learning Activities:
Participate in competitions like Skills USA	Engineering internship Job shadow a machinist

The Engineering program of study focuses on the design, development, and use of engines, machines, and structures. CTE learners will learn how to apply science, mathematical methods, and empirical evidence to the innovation, design, construction, operation, and maintenance of different manufacturing systems.



The Science, Technology, Engineering, and Mathematics (STEM) Career Cluster focuses on planning, managing, and providing, scientific research and professional and technical services, including laboratory and testing services, and research and development services.

Successful completion of the Engineering program of study will fulfill requirements of the Business and Industry or STEM endorsement if the math and science requirements are met.
 Revised - July 2020



GOOSE CREEK CONSOLIDATED INDEPENDENT SCHOOL DISTRICT



GCCISD offers career and technical education (CTE) programs in Agriculture, Food & Natural Resources; Architecture & Construction; Arts, Audio Visual Technology & Communications; Business, Marketing & Finance; Education & Training; Energy; Health Science; Hospitality & Tourism; Human Services; Information Technology; Law & Public Service; Manufacturing; Science, Technology, Engineering & Math; and Transportation, Distribution & Logistics. Admission to these programs is based on student interest and space availability in GCCISD CTE programs. It is the policy of GCCISD CTE Programs not to discriminate on the basis of race, color, national origin, sex or handicap in its CTE programs, services or activities.

COURSE INFORMATION

09877 H09878 / H09877	INTRODUCTION TO ENGINEERING DESIGN (PLTW)	GPA Level: Pre-AP GPA Level: Honors
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Grade Level: 9-12	Service ID: N1303742 (1 cr.)	Prerequisites: None
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In this Project Lead the Way course, students dig deep into the engineering design process, applying math, science, and engineering standards to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3D modeling software and use an engineering notebook to document their work.

09792 H09878 / H09792	ENVIRONMENTAL SUSTAINABILITY (PLTW)	GPA Level: Regular GPA Level: Honors
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Grade Level: 11-12	Service ID: N1303747 (1 cr.)	Prerequisites: Introduction to Engineering Design (PLTW)
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In Environmental Sustainability, students investigate and design solutions in response to real-world challenges related to clean and abundant drinking water, food supply, and renewable energy. Applying their knowledge through hands-on activities and simulations, students research and design potential solutions to these true-to-life challenges.

09780 H09762 / H09780	ENGINEERING SCIENCE	GPA Level: Regular GPA Level: Honors
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Grade Level: 11-12	Service ID: 13037500 (1 cr.)	Prerequisites: Introduction to Engineering Design, Algebra I, Biology, Chemistry, IPC or Physics
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In this Project Lead the Way course, students dig deep into the engineering design process, applying math, science, and engineering standards to hands-on projects. They work both individually and in teams to design solutions to a variety of problems using 3D modeling software and use an engineering notebook to document their work.

09778	09778 ENGINEERING DESIGN & PROBLEM SOLVING	GPA Level: Regular
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Grade Level: 11-12	Service ID: 13037300 (1 cr.)	Prerequisites: Geometry & Algebra I Science Credit
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Are you interested in modern technology and engineering? This yearlong course focuses on the fundamentals of modern engineering and technology. Students will apply math, science and technology to engineering problems as well as develop computer skills. Students will be part of teams that work together to complete engineering projects. The engineering examples utilized in this course are based on representations of mechanical engineering, civil engineering, electrical engineering, aerospace engineering, and many other disciplines within the field of engineering. Upon completion of the course, students will have an understanding of how engineers design and build new technologies using math, science and ingenuity. Students unfamiliar with engineering will be exposed to a variety of career opportunities in related fields.

09787 H09768 / H09787	ENGINEERING DESIGN & DEVELOPMENT (PLTW)	GPA Level: Pre-AP GPA Level: Honors
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Grade Level: 12	Service ID: 13036500 (1 cr.)	Prerequisites: Environmental Sustainability
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The knowledge and skills students acquire throughout the Project Lead The Way Engineering curriculum come together in Engineering Design and Development (EDD). Students will generate a culminating capstone project using the engineering design process. They will identify a problem and then research, design, and test a solution. Students will present their solution to a panel of engineers and industry partners. Students apply the professional skills they have developed to document a design process to standards, completing EDD ready to take on any postsecondary program or career.

COURSE INFORMATION

19778 H19778	ENGINEER YOUR WORLD (EDPS)	GPA Level: Pre-AP GPA Level: Honors
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Grade Level: 11-12

Service ID: 13037300 (1 cr.)

Prerequisites: Geometry & Algebra I
Science Credit

Developed by a team of University of Texas faculty, NASA engineers, and secondary teachers working with funding from the National Science Foundation, Engineer Your World is an innovative, student-centered curriculum that engages learners in authentic engineering experiences and inspires them to embrace an engineer's habits of mind. Collaborative, student-directed projects build resilient problem solving skills and empower students to think like engineers, to adopt engineering processes, and to pursue engineering disciplines for the betterment of our world.

FOR ADDITIONAL INFORMATION ON THE SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS CAREER CLUSTER,
PLEASE CONTACT:

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