



Engineering and Technology (PLTW)

Career Goal (O*NET Code): Environmental Engineer (17-2081), BioMedical Engineer (17-2031), Aerospace Engineer (17-2011), Mechanical Engineer (17-2141).

Cluster Overview: Planning, managing, and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services, and research and development services.

SUGGESTED COURSEWORK

EXTENDED LEARNING EXPERIENCES

High School	9th	Core Courses:	English I Algebra I Biology	World Geography Languages other than English I Health/PE or Equivalent	Curricular Experiences: TSA	Extracurricular Experiences: Destination ImagiNation FIRST High School Robotics Competition International Bridge Building Contest Junior Engineering Technical Society National Engineering Design Competition National Engineers Week		
		Career-Related Electives:	Introduction to Engineering Design or Digital Electronics or Principles of Engineering					
	10th	Core Courses:	English II Geometry Chemistry	World History Languages other than English II Technology Applications				
		Career-Related Electives:	Introduction to Engineering Design or Digital Electronics or Principles of Engineering					
	11th	Core Courses:	English III Algebra II Physics	United States History PE or Equivalent Communication Applications			Career Learning Experiences: Career Preparation (Paid/Unpaid) Job Shadowing Internship Apprenticeship	Service Learning Experiences: Community Service Volunteer
		Career-Related Electives:	Principles of Engineering or Computer-Integrated-Manufacturing or Civil Engineering and Architecture or Biotechnical Engineering or Aerospace Engineering AND Languages other than English III					
	12th	Core Courses:	English IV Precalculus AP Physics	Government/Economics Fine Arts				
		Career-Related Electives:	Engineering Design and Development or Principles of Engineering or Computer-Integrated Manufacturing or Civil Engineering and Architecture or Biotechnical Engineering or Aerospace Engineering AND Languages other than English IV					
Postsecondary	On-the-Job Training				Career Options:	Professional Associations: American Chemical Society American Institute of Aeronautics and Astronautics American Institute of Chemical Engineering American Society of Civil Engineers American Society of Mechanical Engineers Institute of Electrical and Electronic Engineers Mathematical Association of America National Society of Black Engineers Society of Automotive Engineers Society of Hispanic Professional Engineers Society of Women Engineers		
	Certificates	OSHA CareerSafe NOTE: Students may earn all or part of these certificates as part of the High School experience.						
	Associate's Degrees	15 Hours Core Curriculum Engineering * Introduction to Engineering (ENGR 1X01)- Recommended new course Technical Calculations (TECM 1X03) OR Mathematics for Business and Social Sciences (MATH 1X24) OR Calculus (MATH 2X13) Technical Algebra and Trigonometry (TECM 1X43) OR Pre-Calculus (MATH 2X12) Engineering Mechanics I- Static's (ENGR 2X01) Engineering Mechanics II- Dynamics (ENGR 2X02) Engineering and Technology Engineering Graphics (ENGR 1X04) OR Electro-Mechanical Drafting (DFTG 1X29) Quality Control (QCTC 1X03) OR Elementary Statistical Methods (MATH 1X42) OR Principles of Quality OR other Quality Systems Course Computerized Numerical Control Programming (MCHN 2X44) Computer Science Systems Analysis and Design (BCIS 2X90) OR Information and Project Management (BMGT 1X09)						
Bachelor's Degrees	Aerospace Chemical Civil	Computer Electrical Industrial	Manufacturing Mechanical Systems	Engineering Technologist Engineer				
Graduate Degrees	Aerospace Chemical Civil	Computer Electrical Industrial	Manufacturing Mechanical Systems	Corporate Engineering Medicine Analyst	Administration and Management Engineering Technology			

* May substitute for the required credit for Physical Education
** Satisfies the required credit for Technology Applications
*** May substitute for the required credit for Health Education

Students should take Advanced Placement (AP), International Baccalaureate (IB), dual credit, Advanced Technical Credit (ATC), or locally articulated courses, if possible.

This plan of study serves as a guide, along with other career planning materials, for pursuing a career path and is based on the most recent information as of 2007. All plans should meet high school graduation requirements as well as college entrance requirements. Students may select other elective courses for personal enrichment purposes.