



High School to College and Career Pathway: Secondary Career and Technical Education

Area of Study: Technology and Engineering Education

Pathway: Engineering

Get the Facts

Due to the expansion of jobs in the technical fields and the increasing number of engineers who are retiring, the number of job openings in technology and engineering are increasing.

Twenty percent of engineering undergraduate are women and 10 percent of the engineering workforce is female.

Workforce Trends

According to the Utah Department of Workforce Services, the annual growth rate of engineers is projected to increase 2.2 percent by the year 2022.

CAREER AND TECHNICAL EDUCATION Recommended Pathway Courses

(Students may select individual courses for exploration, or a complete Pathway for an in-depth focus.)

CLASS AVAILABILITY MAY VARY AT YOUR HIGH SCHOOL

Course #	Foundation Courses: (required)	Credit
CAD/Drafting Component		
15.1351	CAD Mechanical Design 1	.50
15.1352	CAD Mechanical Design 2	.50
<i>Or choose the following course:</i>		
14.1300	PLTW Introduction to Engineering Design	1.00
Design Component		
14.1551	Engineering Principles 1	.50
14.1552	Engineering Principles 2	.50
<i>Or choose the following course:</i>		
14.1310	PLTW Principles of Engineering	1.00
Elective Courses		
15.1353	CAD Mechanical Design 3	.50
15.0321	Electronics 1	.50
15.0322	Electronics 2	.50
14.9990	Engineering Capstone	1.00
45.0702	Introduction to Geographic Information Systems (GIS)	.50
14.1350	PLTW Aerospace Engineering	1.00
14.1330	PLTW Civil Engineering & Architecture	1.00
14.1340	PLTW Computer Integrated Manufacturing	1.00
14.1320	PLTW Digital Electronics	1.00
14.1390	PLTW Engineering Design & Development	1.00
14.4231	Robotics 1	.50
14.4232	Robotics 2	.50
32.0199	Workplace Skills	.50

1.00 credit

1.00 credit

1.00 credit

3.00 credits for completion

Engineering is:

- > High skill
- > High wage
- > High demand

Sample Career Occupations

- > Agricultural Engineer
- > Aeronautical Engineer
- > Biomedical Engineer
- > Civil Engineer
- > Electrical Engineer
- > Engineering Technician
- > Environmental Engineer
- > Mechanical Engineer
- > Product Design Engineer
- > Structural Engineer
- > Technology and Engineering Education Teacher

Foundation courses taken beyond the required credits can be used as elective credit.

Middle School		State Requirements		High School Suggested Education Plan				College and Career
7th Grade	8th Grade	Middle School	High School	9th Grade Suggested	10th Grade Suggested	11th Grade Suggested	12th Grade Suggested	Beyond High School
Language Arts 7 1.00	Language Arts 8 1.00	2.00	Language Arts 4.00	Language Arts 9 1.00	Language Arts 10 1.00	Language Arts 11 1.00	Language Arts 12 1.00	There are a number of options for education and training beyond high school, depending on your career goals. <ul style="list-style-type: none"> > Certificate > Associate degree > Bachelor's degree > Professional degree > On-the-job training > Apprenticeship > Military training For more information on salary projections, labor market demand, and training options, visit UtahFutures.org .
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00	Math * 1.00	
Science .50	Science 1.00	1.50	Science 3.00	Physics with Technology 1.00	Biology 1.00	Chemistry 1.00	Electronics 1.00	
Utah Studies .50	U.S. History I 1.00	1.50	Social Studies 3.00	Geography for Life .50	World Civilizations .50	U.S. History II 1.00	U.S. Government and Citizenship .50	
P.E. 1.00	Health .50	1.50	General Financial Literacy .50			General Financial Literacy .50		
P.E./Health 2.00			P.E./Health 2.00	Participation Skills and Techniques .50	Fitness for Life .50 / Health Education .50 Lifetime Activities or Sport .50			
The Arts .50	The Arts .50	1.00	Fine Arts 1.50	Fine Arts Courses 1.50				
Keyboarding .50			Digital Literacy .50	Comp. Tech. or Exploring Computer Science .50				
College & Career Awareness 1.00	Exploring Technology .50	1.00	CTE 1.00	Engineering Technology .50	Refer to Career and Technical Education box above.			

> * Talk to your school counselor about math requirements in the core curriculum. Core curriculum and elective requirements may vary district to district.
 > Many CTE courses may qualify for concurrent enrollment credit, which in some cases may earn up to 1.0 credit toward Pathway completion. Talk to your school counselor about availability.

> Concurrent enrollment course offerings vary by school and district.
 > Many Utah postsecondary programs accept high school courses toward a two- or four-year degree through concurrent enrollment. Check regional postsecondary Pathways for details.