

## Connecting High School to College and Career

Career and Technical Education (CTE) provides critical learning and hands-on skills in 62 Pathways within eight areas of study. Students who focus on a Pathway acquire the skills necessary for entry into well-paid careers with high potential for rapid financial growth, increased levels of responsibility, and a high degree of personal satisfaction.

### CTE Pathways:

- Will jump-start your future career.
- Will give you unlimited opportunities.
- Will help you plan for life after high school—before graduation.
- Will save you time and money.

### What is a Pathway?

- A Pathway is a sequence of courses within your area of interest.
- A Pathway connects from high school to college for a specific degree and/or career. A Pathway will save you time and money toward a college degree.

### CTE: Keeping it REAL

- Classroom instruction connects to the REAL world of work and future career opportunities.
- Statistics indicate that CTE graduates are worth higher wages because they are more productive than other workers.

### Did you know?

Ninety percent of jobs require training beyond high school.

### Top 5 reasons to participate in CTE Career Pathways:

1. To acquire technical skills training.
2. To participate in hands-on learning.
3. To jump-start your future career.
4. To earn college credit while in high school through concurrent enrollment classes.
5. To save time and money!

### Ask yourself:

- What do I want to be doing in 5 years?
- What do I want to be doing in 10 years?

### Ask yourself:

- What classes should I take to get ready for college?
- What does it cost to go to college?

### Ask yourself:

- Why should I plan?
- Why should I study?
- Why should I graduate from high school?

### Ask yourself:

- How can I make a lot of money?
- How do I find a career?
- How can Pathways help me?

*Acquiring critical learning and hands-on skills through education and training will open doors of opportunity for obtaining employment within your area of interest. Stay in school and finish your education. Your future depends on it.*

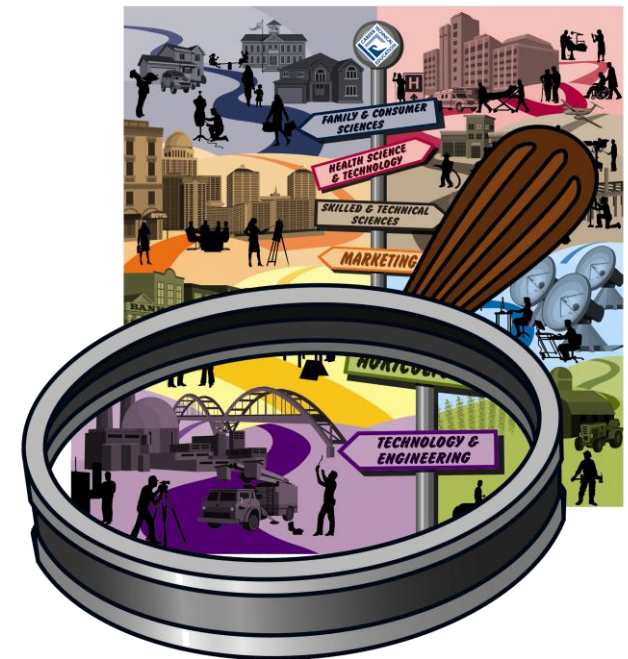
For more information log onto  
[www.utahcte.org](http://www.utahcte.org).

Utah State Office of Education  
250 East 500 South P.O. Box 144200  
Salt Lake City, UT 84114-4200  
Patti Harrington, Ed.D., State Superintendent of Public Instruction  
Mary Shumway, State Director of Career and Technical Education



Technology and Engineering Education  
*Project Lead the Way*

## High School to College and Career PATHWAYS



CAREER AND TECHNICAL EDUCATION  
*Giving Students the Edge*



# High School to College and Career Pathway: Secondary

Area of Study: Technology and Engineering Education



## Pathway: Project Lead the Way (National Pre-Engineering Program)

Middle School		State Requirements			High School Suggested Education Plan				College & Careers																																													
7 <sup>th</sup> Grade	8 <sup>th</sup> Grade	Middle School		High School	9 <sup>th</sup> Grade Suggested	10 <sup>th</sup> Grade Suggested	11 <sup>th</sup> Grade Suggested	12 <sup>th</sup> Grade Suggested	Beyond High School																																													
Language Arts 7 1.00	Language Arts 8 1.00	2.00	Language Arts	3.00	Language Arts 9 1.00	Language Arts 10 1.00	Language Arts 11 1.00	Language Arts 12 1.00	<p>There are a number of options for education and training beyond high school, depending on your career goals.</p> <ul style="list-style-type: none"> <li>&gt; Certificate</li> <li>&gt; Associate degree</li> <li>&gt; Bachelor's degree</li> <li>&gt; Professional degree</li> <li>&gt; On-the-job training</li> <li>&gt; Apprenticeship</li> <li>&gt; Military training</li> </ul> <p><b>Sample Occupations</b></p> <ul style="list-style-type: none"> <li>&gt; Civil Engineer</li> <li>&gt; Complex Analysis</li> <li>&gt; Complex Design</li> <li>&gt; Development Manufacturing Research</li> <li>&gt; Electrical Engineer</li> <li>&gt; Mechanical Engineer</li> <li>&gt; Technology and Engineering Education Teacher</li> </ul> <p>For more information on salary projections, labor market demand, and training options, visit <a href="http://www.careers.utah.gov">www.careers.utah.gov</a>.</p>																																													
Math 7 1.00	Pre-Algebra 1.00	2.00	Math	2.00	Elem Algebra or Applied Math 1.00	Geometry or Applied Math II 1.00	Intermediate Algebra 1.00	Pre-Calculus 1.00																																														
Science .50	Science 1.00	1.50	Science	2.00	Earth Systems 1.00	Biology 1.00	Physics 1.00 or Physics with Technology 1.00	Chemistry 1.00																																														
Utah Studies .50	U.S. History I 1.00	1.50	Social Studies	2.50	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	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																																																	
			Financial Literacy	.50	Financial Literacy .50																																																	
Keyboarding .50			Computer Tech.	.50	Computer Technology .50																																																	
CTE Intro 1.00	Exploring Technology .50	1.00	Career and Technical Education	1.00	<b>Career and Technical Education Recommended Pathway Courses</b> (Students may select individual courses for exploration, or a complete Pathway for an in-depth focus.) <b>CLASS AVAILABILITY MAY VARY AT YOUR HIGH SCHOOL</b>																																																	
<p><b>Workforce Trends</b> Due to the expansion of jobs in the technical fields and the increasing numbers of engineers who are retiring, the number of job openings in technology and engineering is increasing. There is a critical shortage of engineers and engineering technologists entering the field at a time when technology is reinventing itself every few years.</p> <p><b>Get the Facts</b> Project Lead the Way is offered in over 45 states and the District of Columbia. In Utah, an engineer, professional or structural, must be licensed.</p>		<p>Core Curriculum and elective requirements may vary district to district. Check with your school counselor.</p> <p>Concurrent enrollment course offerings vary by school and district.</p>			<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="background-color: #00a0e3; color: white;">Course #</th> <th style="background-color: #00a0e3; color: white;">Foundation Courses: (required)</th> <th style="background-color: #00a0e3; color: white;">Credit</th> <th rowspan="2" style="font-size: 2em; vertical-align: middle;">}</th> <th rowspan="2" style="vertical-align: middle;">3.00 credits</th> </tr> </thead> <tbody> <tr> <td>21.0120</td> <td>Engineering Design, Introduction</td> <td>1.00</td> <td></td> <td></td> </tr> <tr> <td>21.0122</td> <td>Principles of Engineering</td> <td>1.00</td> <td></td> <td></td> </tr> <tr> <td>21.0121</td> <td>Digital Electronics</td> <td>1.00</td> <td></td> <td></td> </tr> <tr> <td colspan="3" style="background-color: #00a0e3; color: white;"><b>Elective Courses:</b></td> <td rowspan="5" style="font-size: 2em; vertical-align: middle;">}</td> <td rowspan="5" style="vertical-align: middle;">1.00 credit</td> </tr> <tr> <td>21.0123</td> <td>Computer Integrated Manufacturing</td> <td>1.00</td> <td></td> </tr> <tr> <td>21.0124</td> <td>Engineering Design &amp; Development</td> <td>1.00</td> <td></td> </tr> <tr> <td>21.0125</td> <td>Civil Engineering &amp; Architecture</td> <td>1.00</td> <td></td> </tr> <tr> <td>14.0201</td> <td>Aerospace Engineering</td> <td>1.00</td> <td></td> </tr> <tr> <td>32.0199</td> <td>Student Internship (Critical Workplace Skills)</td> <td>.50</td> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: right; margin-top: 5px;">4.00 credits for completion</p>					Course #	Foundation Courses: (required)	Credit	}	3.00 credits	21.0120	Engineering Design, Introduction	1.00			21.0122	Principles of Engineering	1.00			21.0121	Digital Electronics	1.00			<b>Elective Courses:</b>			}	1.00 credit	21.0123	Computer Integrated Manufacturing	1.00		21.0124	Engineering Design & Development	1.00		21.0125	Civil Engineering & Architecture	1.00		14.0201	Aerospace Engineering	1.00		32.0199	Student Internship (Critical Workplace Skills)	.50	
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