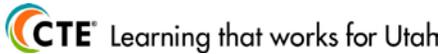


Utah Career and Technical Education Career Pathway

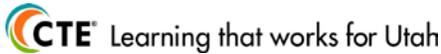
2018-2019 School Year



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<p>Student Testimonial "My training, in CTE courses in high school, prepared me for life after high school by helping me discover my love of drafting. I discovered the need for drafters in the world of engineering. I focused my CTE Pathway toward this career goal, and have taken some advanced drafting classes to improve both my knowledge of the field and my employability in the field." Calvin Hill</p>	<h3>HIGH SCHOOL TO POSTSECONDARY EDUCATION AND TRAINING</h3> <p>There are a number of options for education and training beyond high school, depending on your career goals.</p> <table border="1" data-bbox="394 1040 1711 1149"> <tr> <td style="background-color: #00a0c0; color: white; text-align: center;">12th Grade</td> <td style="background-color: #ff8c00; color: white; text-align: center;">1-Year Certificate</td> <td style="background-color: #92d050; color: white; text-align: center;">2-Year Associate or Technical Degree</td> <td style="background-color: #ffd966; color: white; text-align: center;">4-Year Bachelor's Degree</td> <td style="background-color: #808080; color: white; text-align: center;">More Graduate or Prof. Degree</td> </tr> </table> <div style="display: flex; justify-content: space-between;"> <div data-bbox="394 1154 945 1385" style="width: 45%;"> <p>Certificates are awarded upon the successful completion of a brief course of study, usually one year or less. Upon completion of a course of study, a certificate does not require any further action to retain.</p> <p>In high school a variety of certificates can be earned.</p> </div> <div data-bbox="945 1154 1711 1385" style="width: 45%;"> <p>An academic degree is an award for the completion of a program or course of study over multiple years at postsecondary education institutions.</p> <p>In 2015-2016, 73 percent of secondary students who concentrated in a CTE Career Pathway placed in postsecondary education, advanced training, military service or employment (October 1-December 31).</p> </div> </div>					12th Grade	1-Year Certificate	2-Year Associate or Technical Degree	4-Year Bachelor's Degree	More Graduate or Prof. Degree	<p>Utah Business and Industry Facts According to the Utah Department of Workforce Services, 620 mechanical drafters are employed by more than 3,000 businesses throughout the state. The annual median salary for an experienced mechanical drafter is \$51,690.</p>																																						
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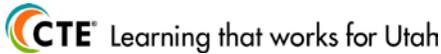
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TSA fosters personal growth, leadership, and opportunities in science, technology, engineering, and mathematics (STEM).</p> <p>Workforce Trends Due to the expansion of jobs in the technical fields and the increasing number of engineers who are retiring, the number of job openings in technology and engineering are increasing.</p> <p>According to the U.S. Bureau of Labor Statistics, 13 percent of U.S. engineering jobs are held by women, with one in four jobs in technology, engineering, and mathematics.</p>	<h3 style="margin: 0;">Career Cluster: Engineering & Technology</h3> <h3 style="margin: 0;">Career Pathway: Mechanical Engineering</h3> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr style="background-color: #00a651; color: white;"> <th style="width: 15%;">CORE CODE</th> <th style="width: 55%;">FOUNDATION COURSES (required)</th> <th style="width: 15%;">CREDITS</th> <th style="width: 15%;"></th> </tr> </thead> <tbody> <tr style="background-color: #00a651; color: white;"> <td colspan="4">CAD Component</td> </tr> <tr> <td>38.01.00.00.051</td> <td>CAD Mechanical Design 1 *</td> <td style="text-align: center;">.50</td> <td rowspan="3" style="text-align: center; vertical-align: middle;">1.00 credit</td> </tr> <tr> <td>38.01.00.00.052</td> <td>CAD Mechanical Design 2</td> <td style="text-align: center;">.50</td> </tr> <tr> <td colspan="2" style="text-align: center;"><i>Or choose the following course:</i></td> <td></td> </tr> <tr> <td>38.01.00.00.300</td> <td>PLTW Introduction to Engineering Design</td> <td style="text-align: center;">1.00</td> <td></td> </tr> <tr style="background-color: #00a651; color: white;"> <td colspan="4">Foundation Component</td> </tr> <tr> <td>38.01.00.00.151</td> <td>Engineering Principles 1</td> <td style="text-align: center;">.50</td> <td rowspan="3" style="text-align: center; vertical-align: middle;">1.00 credit</td> </tr> <tr> <td>38.01.00.00.152</td> <td>Engineering Principles 2</td> <td style="text-align: center;">.50</td> </tr> <tr> <td colspan="2" style="text-align: center;"><i>Or choose the following course:</i></td> <td></td> </tr> <tr> <td>38.01.00.00.310</td> <td>PLTW Principles of Engineering</td> <td style="text-align: center;">1.00</td> <td></td> </tr> <tr style="background-color: #00a651; color: white;"> <td colspan="4">Capstone Component</td> </tr> <tr> <td>38.01.00.00.990</td> <td>Engineering Capstone</td> <td style="text-align: center;">1.00</td> <td rowspan="3" style="text-align: center; vertical-align: middle;">1.00 credit</td> </tr> <tr> <td colspan="2" style="text-align: center;"><i>Or choose the following course:</i></td> <td></td> </tr> <tr> <td>38.01.00.00.390</td> <td>PLTW Engineering Design and Development</td> <td style="text-align: center;">1.00</td> </tr> <tr style="background-color: #00a651; color: white;"> <td colspan="4" style="text-align: center;">ELECTIVE COURSES</td> </tr> <tr> <td>38.03.00.00.010</td> <td>Engineering Technology</td> <td style="text-align: center;">.50</td> <td rowspan="3"></td> </tr> <tr> <td>38.01.00.00.211</td> <td>Physics with Technology</td> <td style="text-align: center;">1.00</td> </tr> <tr> <td>41.00.00.00.030</td> <td>Workplace Skills</td> <td style="text-align: center;">.50</td> </tr> <tr> <td colspan="4" style="text-align: center; background-color: #00a651; color: white;">3.00 credits for completion</td> </tr> </tbody> </table> <p style="font-size: small; margin-top: 5px;">* Course can be taken up to 1.00 credit. 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<p>Student Testimonial</p> <p>"I have always liked doing hands-on projects and thinking of different ways to make something better. With the CTE classes I was able to see whole processes, from the design stage on paper to transferring that design and idea into a computer application, then all the way to building a prototype."</p> <p style="text-align: right; font-size: small;">Hunter Okerlund</p>	<h3 style="margin: 0;">HIGH SCHOOL TO POSTSECONDARY EDUCATION AND TRAINING</h3> <p style="margin: 0;">There are a number of options for education and training beyond high school, depending on your career goals.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <tr> <td style="width: 15%; text-align: center; background-color: #00a651; color: white;">12th Grade</td> <td style="width: 15%; text-align: center; background-color: #e67e22; color: white;">1-Year Certificate</td> <td style="width: 15%; text-align: center; background-color: #27ae60; color: white;">2-Year Associate or Technical Degree</td> <td style="width: 15%; text-align: center; background-color: #f1c40f; color: white;">4-Year Bachelor's Degree</td> <td style="width: 15%; text-align: center; background-color: #555; color: white;">More Graduate or Prof. Degree</td> </tr> </table> <div style="display: flex; justify-content: space-between;"> <div style="width: 30%; padding: 5px;"> <p>Certificates are awarded upon the successful completion of a brief course of study, usually one year or less. Upon completion of a course of study, a certificate does not require any further action to retain.</p> <p>In high school a variety of certificates can be earned.</p> </div> <div style="width: 60%; padding: 5px;"> <p>An academic degree is an award for the completion of a program or course of study over multiple years at postsecondary education institutions.</p> <p>In 2015-2016, 73 percent of secondary students who concentrated in a CTE Career Pathway placed in postsecondary education, advanced training, military service or employment (October 1-December 31).</p> </div> </div>	12th Grade	1-Year Certificate	2-Year Associate or Technical Degree	4-Year Bachelor's Degree	More Graduate or Prof. Degree	<p>Utah Business and Industry Facts</p> <p style="font-size: x-small; margin: 0;">The Engineering Initiative, established by the Utah State Legislature in 2001, aimed to triple engineering and computer science graduates. Since 2015, Utah state schools graduated 907 engineering and computer science students per year, 657 more than promised.</p> <p style="font-size: x-small; margin: 0;">According to Richard Brown, Dean of Engineering at the University of Utah, Utah's gross domestic product has more than doubled since the Engineering Initiative started.</p>																																																																			
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Utah Career and Technical Education Career Pathway

2018-2019 School Year



<p>CTSO Information Career and Technical Student Organizations (CTSO) align with the national Career Clusters® and the Utah CTE Career Pathways.</p> <p>TSA is the CTSSO for students in the Robotics and Electronics Career Pathway. TSA fosters personal growth, leadership, and opportunities in science, technology, engineering, and mathematics (STEM).</p> <p>Workforce Trends Most robotics engineers are employed by private companies and work in laboratory or production settings.</p>	<h3 style="margin: 0;">Career Cluster: Engineering & Technology</h3>	<p>Robotics & Electronics is:</p> <ul style="list-style-type: none"> > High skill > High wage <p>Sample Occupations Requiring:</p> <p>High School Diploma</p> <ul style="list-style-type: none"> > N/A <p>Certificate</p> <ul style="list-style-type: none"> > N/A <p>Assoc. or Technical Degree</p> <ul style="list-style-type: none"> > Electro-Mechanical Technicians <p>Baccalaureate Degree</p> <ul style="list-style-type: none"> > Automation Engineer > Career and Technical Education Teacher > Engineer > Industrial Engineer > Robotics Engineer <p>Graduate or Prof. Degree</p> <ul style="list-style-type: none"> > Engineer 																																						
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<p>Student Testimonial</p> <p>"I want to earn an AAS degree in mechatronics. After completing my degree I plan on finding work with a company designing production equipment. My high school engineering instructor was an amazing person and has influenced my love of this field and the path that I have chosen."</p> <p style="text-align: right;">Connor Hendry</p>	<h3 style="margin: 0;">HIGH SCHOOL TO POSTSECONDARY EDUCATION AND TRAINING</h3> <p style="margin: 0;">There are a number of options for education and training beyond high school, depending on your career goals.</p>					<p>Utah Business and Industry Facts</p> <p>From "smart" shoes to flying robots to self-driving cars, throughout Utah there are hundreds of companies that use robotics to streamline the manufacturing process, produce goods, and make daily tasks easier.</p> <p>"We have this idea that robots will help us in the future," said Mark Minor, associate professor, University of Utah. "Well, the future is here. You just have to understand what they're doing." (Deseret News, March 9, 2015)</p>
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