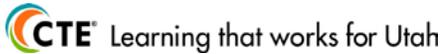


# Utah Career and Technical Education Career Pathway

## 2017-2018 School Year



**CTSO Information**  
 Career and Technical Student Organizations (CTSO) align with the national Career Clusters® and the Utah CTE Career Pathways.

TSA is the CTSO for students in the CAD Mechanical Design Career Pathway. TSA fosters personal growth, leadership, and opportunities in science, technology, engineering, and mathematics (STEM).

**Workforce Trends**  
 Industrial growth and increasingly complex designs will spur growth in drafting services. As technology advances, opportunities will be best for drafters with at least 2 years of postsecondary training, and computer-aided design systems experience.

### Career Cluster: Engineering & Technology

#### Career Pathway: CAD Mechanical Design

CORE CODE	FOUNDATION COURSES (required)	CREDITS	
38.01.00.00.051	CAD Mechanical Design 1 *	.50	1.50-2.00 credits
38.01.00.00.052	CAD Mechanical Design 2	.50	
38.01.00.00.053	CAD Mechanical Design 3	.50	
<b>Or choose the following courses:</b>			
38.01.00.00.300	PLTW Introduction to Engineering Design	1.00	1.00-1.50 credits
38.01.00.00.310	PLTW Principles of Engineering	1.00	
ELECTIVE COURSES			
38.03.00.00.010	Engineering Technology	.50	1.00-1.50 credits
40.13.00.00.030	Industrial Design *	1.00	
40.10.00.00.072	Machining 1 *	.50	
40.10.00.00.070	Machining 2 *	.50	
38.01.00.00.011	Manufacturing Principles 1	.50	
38.01.00.00.012	Manufacturing Principles 2	.50	
38.01.00.00.211	Physics with Technology	1.00	
40.10.00.00.110	Welding Technician, Entry Level *	.50	
41.00.00.00.030	Workplace Skills	.50	
<b>3.00 credits for completion</b>			

\* Course can be taken up to 1.00 credit.  
 Foundation courses taken beyond the required credits can be used as elective credit.

**Career and Technical Education provides all students access to high-quality, rigorous career-focused programs that result in attainment of credentials with labor market value.**

**CAD Mechanical Design is:**  
 > High skill  
 > High wage

**Sample Occupations Requiring:**  
[High School Diploma](#)  
 > N/A

**Certificate**  
 > N/A

**Assoc. or Technical Degree**  
 > Engineering Technician  
 > Mechanical Drafter  
 > Mechanical Engineering Technician

**Baccalaureate Degree**  
 > Aerospace Engineer  
 > Career and Technical Education Teacher  
 > Civil Engineer  
 > Industrial Designer  
 > Mechanical Engineer  
 > Secondary Education Teacher

**Graduate or Prof. Degree**  
 > Mechanical Engineer

**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

### HIGH SCHOOL TO POSTSECONDARY EDUCATION AND TRAINING

There are a number of options for education and training beyond high school, depending on your career goals.

12th Grade	1-Year Certificate	2-Year Associate or Technical Degree	4-Year Bachelor's Degree	More Graduate or Prof. Degree
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. In high school a variety of certificates can be earned.		An academic degree is an award for the completion of a program or course of study over multiple years at postsecondary education institutions. 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).		

**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.

**CTE Skill Certificates**

Competency-based student assessments, measured by core standards and competencies needed to be successful in the workforce.

**UtahFutures: College and Career Planning**

Visit [UtahFutures.org](http://UtahFutures.org) for salary projections, labor market demand, and training options.

In 2015-2016, 96,190 CTE skill certificates were awarded to high school students. Students' knowledge and performance is demonstrated as part of the Skill Certificate process.

In 2015-2016, the graduation rate for students who concentrated in a CTE Career Pathway was 96.6 percent, compared to Utah's statewide graduation rate of 85 percent.