

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

## Area of Study: Technology and Engineering Education

### Pathway: Mechanical Design (CAD/Drafting)

#### Get the Facts

In today's technologically advanced business world, drafters must have excellent drawing and graphic skills along with a high level of computer skills.

In 2013, 21.2 percent of the people employed as drafters were women.

#### 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 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
<b>Mechanical Design Engineering track</b>		
15.1351	CAD Mechanical Design 1	.50
15.1352	CAD Mechanical Design 2	.50
15.1353	CAD Mechanical Design 3	.50
<b>Or choose the following courses:</b>		
14.1300	PLTW Introduction to Engineering Design	1.00
14.1310	PLTW Principles of Engineering	1.00
<b>Elective Courses</b>		
15.1510	Engineering Technology	.50
50.0404	Industrial Design	1.00
48.0501	Machining 1 *	.50
48.0503	Machining 2 *	.50
14.3611	Manufacturing Principles 1	.50
14.3612	Manufacturing Principles 2	.50
14.1211	Physics with Technology	1.00
48.0508	Welding Technician – Entry Level *	.50
32.0199	Workplace Skills	.50

1.50-2.00 credits

1.00-1.50 credits

**3.00 credits for completion**

#### Mechanical Design (CAD/Drafting) is:

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

#### Sample Career Occupations

- > Aeronautical Designer
- > Civil Engineer
- > Drafting/CAD Teacher
- > Industrial Designer
- > Mechanical Designer
- > Mechanical Drafter

\* Course can be taken up to 1.00 credit.

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	<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>For more information on salary projections, labor market demand, and training options, visit <a href="http://UtahFutures.org">UtahFutures.org</a>.</p>
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	Earth Systems 1.00	Physics or Physics with Technology 1.00	Chemistry 1.00	Biology 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	
			General Financial Literacy .50			General Financial Literacy .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				
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	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.