

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Building Trades – Carpentry

Get the Facts

Carpentry is the largest occupation of the construction trades. Over 36 percent of all carpenters are self-employed.

In 2013, 1.6 percent of the people employed as carpenters were women.

Workforce Trends

As construction continues to increase in the public and private sector demand for skilled carpenters will increase. Those individuals with the proper training and skills will have abundant job opportunities to choose from. Carpenters who complete a formal apprenticeship program receive certification as journeymen.



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
46.0201	Carpentry 1	1.00
46.0000	Construction Trades Foundation	.50
	Elective Courses:	
52.0312	Accounting 1	.50
52.0211	Business Management	.50
15.1351	CAD Mechanical Design 1 *	.50
15.1341	CAD Architectural Design 1 *	.50
15.1342	CAD Architectural Design 2 *	.50
48.0703	Cabinetmaking	1.00
46.0202	Carpentry 2	1.00
46.0302	Electrician 1	1.00
15.0321	Electronics 1	.50
52.0621	Entrepreneurship	.50
48.0702	Furniture Design & Manufacturing *	.50
47.0201	HVAC	1.00
46.0501	Plumbing 1	1.00
48.0701	Woodworking *	.50
32.0199	Workplace Skills	.50

1.50 credits

1.50 credits

3.00 credits for completion

Carpentry is:

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

Sample Career Occupations

- > Carpenter
- > Carpenter Helper
- > Carpentry Teacher
- > Construction Laborer
- > Construction Manager
- > Finish Carpenter
- > Foreman

Nationwide, employment of carpenters is projected to increase 24 percent through the year 2022.

In Utah, a construction manager and a building inspector must be licensed.

* Course can be taken up to 1.00 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"> > Certificate > Associate degree > Bachelor's degree > Professional degree > On-the-job training > Apprenticeship > Military training <p>For more information on salary projections, labor market demand, and training options, visit UtahFutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Physics 1.00 or Physics with Technology 1.00	Additional Credit 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	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		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.

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Building Trades – Electrician

Get the Facts

Compact florescent light bulbs use 75 percent less energy and last 10 times as long as regular incandescent.

Workforce Trends

As the population and economy grow, more electricians will be needed to install and maintain electrical devices and wiring in homes, offices, and other structures. Job opportunities are expected to be excellent, largely arising from the need to replace electricians who leave the occupation permanently.



**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
46.0000	Construction Trades Foundation	.50
46.0302	Electrician 1	1.00
Elective Courses:		
52.0312	Accounting 1	.50
52.0211	Business Management	.50
15.1341	CAD Architectural Design 1 *	.50
15.1342	CAD Architectural Design 2 *	.50
15.1351	CAD Mechanical Design 1 *	.50
46.0201	Carpentry 1	1.00
46.0304	Electrician 2	1.00
15.0321	Electronics 1	.50
15.0322	Electronics 2	.50
15.0323	Electronics 3	.50
52.0621	Entrepreneurship	.50
47.0201	HVAC	1.00
46.0501	Plumbing 1	1.00
48.0701	Woodworking *	.50
32.0199	Workplace Skills	.50

1.50 credits

1.50 credits

3.00 credits for completion

Electrician is:

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

Sample Career Occupations

- > Electrical Drafter
- > Electrical Engineer
- > Electrical Equipment Assembler
- > Electrical Teacher
- > Electrician
- > Electrician Helper

In 2013, 1.8 percent of the people employed as electricians were women.
In Utah, an electrician must be licensed.

* Course can be taken up to 1.00 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. > 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		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Physics 1.00 or Physics with Technology 1.00	Additional Credit 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	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		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.
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High School to College and Career Pathway: Secondary Career and Technical Education

Area of Study: Skilled and Technical Sciences Education

Pathway: Building Trades – HVAC

Get the Facts

Energy-efficient homes can reduce home energy needs by 20 to 30 percent, saving Americans thousands of dollars in their utility bills.

In Utah, an HVAC mechanic/installer must be licensed.

Workforce Trends

Advances in computer technology have revolutionized the way we monitor and control the engineering systems in buildings. In Utah, the job outlook for HVAC mechanics and installers is projected to increase 3.1 percent through 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
46.0000	Construction Trades Foundation	.50
47.0201	Heating/Air Conditioning/Refrigeration (HVAC)	1.00
Elective Courses:		
52.0312	Accounting 1	.50
52.0211	Business Management	.50
15.1341	CAD Architectural Design 1 *	.50
15.1342	CAD Architectural Design 2 *	.50
15.1351	CAD Mechanical Design 1 *	.50
46.0201	Carpentry 1	1.00
46.0302	Electrician 1	1.00
15.0321	Electronics 1 *	.50
15.0322	Electronics 2 *	.50
15.0323	Electronics 3 *	.50
52.0621	Entrepreneurship	.50
46.0501	Plumbing 1	1.00
32.0199	Workplace Skills	.50

1.50 credits

1.50 credits

3.00 credits for completion

HVAC is:

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

Sample Career Occupations

- > HVAC Mechanic and Installer
- > HVAC Teacher
- > Stationary Engineer

In 2013, 1.2 percent of the people employed as HVAC mechanics or installers were women.

* Course can be taken up to 1.00 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"> > Certificate > Associate degree > Bachelor's degree > Professional degree > On-the-job training > Apprenticeship > Military training <p>For more information on salary projections, labor market demand, and training options, visit UtahFutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math	3.00	Math * 1.00	Math * 1.00	Math * 1.00		
Science .50	Science 1.00	1.50	Science	3.00	Earth Systems 1.00	Physics 1.00 or Physics with Technology 1.00	Additional Credit 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	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		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.
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High School to College and Career Pathway: Secondary Career and Technical Education

Area of Study: Skilled and Technical Sciences Education

Pathway: Building Trades – Plumbing

Get the Facts

Wooden pipes were common until the early 1800s, when a change was made to iron.

In Utah, a plumber, pipefitter, and steamfitter must be licensed.

Workforce Trends

Demand for plumbers will stem from new construction and renovation, repair and maintenance of existing buildings.



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
46.0000	Construction Trades Foundation	.50
46.0501	Plumbing 1	1.00
	Elective Courses:	
52.0312	Accounting 1	.50
52.0211	Business Management	.50
15.1341	CAD Architectural Design 1 *	.50
15.1342	CAD Architectural Design 2 *	.50
15.1351	CAD Mechanical Design 1 *	.50
46.0201	Carpentry 1	1.00
46.0302	Electrician 1	1.00
15.0321	Electronics 1 *	.50
52.0621	Entrepreneurship	.50
47.0201	HVAC	1.00
46.0502	Plumbing 2	1.00
32.0199	Workplace Skills	.50

1.50 credits

1.50 credits

3.00 credits for completion

Plumbing is:

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

Sample Career Occupations

- > Plumber/Pipefitter Helper
- > Plumbing Teacher
- > Steamfitter

In 2013, 1.1 percent of the people employed as pipe layers, plumbers, pipe fitters, and pipe steamfitters were women.

* Course can be taken up to 1.00 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"> > Certificate > Associate degree > Bachelor's degree > Professional degree > On-the-job training > Apprenticeship > Military training <p>For more information on salary projections, labor market demand, and training options, visit UtahFutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math	3.00	Math * 1.00	Math * 1.00	Math * 1.00		
Science .50	Science 1.00	1.50	Science	3.00	Earth Systems 1.00	Physics 1.00 or Physics with Technology 1.00	Additional Credit 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	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		1.00	CTE	1.00	Refer to Career and Technical Education box above.				

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Communication – Radio Broadcasting Technician

Get the Facts

Throughout the U.S., there are 15,433 licensed radio stations—including commercial and non-commercial stations.

Workforce Trends

Technological improvements in the industry mean greater efficiencies in the workplace, contributing to lessened pressure for broadcast employees.

According to the U.S. Bureau of Labor, employment of broadcast and sound engineering technicians is projected to grow 9 percent through the year 2022. Growth is expected to stem from businesses, schools, and radio and television stations seeking new equipment to improve their audio and video capabilities.



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
10.0205	Radio Broadcasting 1 *	.50
10.0206	Radio Broadcasting 2 *	.50
Elective Courses:		
52.0312	Accounting 1	.50
50.0407	Basic Digital Photography *	.50
50.0406	Basic Film Photography *	.50
52.0211	Business Management	.50
11.0201	Computer Programming 1	1.00
11.0210	Digital Media 1	1.00
15.0321	Electronics 1	.50
15.0322	Electronics 2	.50
52.0621	Entrepreneurship	.50
10.0301	Introduction Graphic Communications *	.50
10.0201	Television Broadcasting 1 *	.50
10.0202	Television Broadcasting 2 *	.50
10.0203	Video Production 1 *	.50
10.0204	Video Production 2 *	.50
32.0199	Workplace Skills	.50

1.00 credit

2.00 credits

3.00 credits for completion

* Course can be taken up to 1.00 credit.

Radio Broadcasting is:

> High skill

Sample Career Occupations

- > Audio Operator
- > Electric and Electronic Repairer
- > Radio Mechanic
- > Radio Broadcasting Teacher
- > Telecommunications Equipment Installer and Repairer

In 2013, 10 percent of the people employed as radio and telecommunications equipment installers and repairers were women.

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"> > Certificate > Associate degree > Bachelor's degree > Professional degree > On-the-job training > Apprenticeship > Military training <p>For more information on salary projections, labor market demand, and training options, visit UtahFutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math	3.00	Math * 1.00	Math * 1.00	Math * 1.00		
Science .50	Science 1.00	1.50	Science	3.00	Earth Systems 1.00	Physics 1.00 or Physics with Technology 1.00	Additional Credit 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	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		1.00	CTE	1.00	Refer to Career and Technical Education box above.				

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Communication – Television Broadcasting Technician

Get the Facts

Nielsen's new definition of a TV household states that homes must have at least one operable TV/monitor with the ability to deliver video via traditional means of antennae, cable set-top-box, or satellite receiver and/or with a broadband connection.

Workforce Trends

As businesses, schools, and radio and television stations demand new equipment, to improve their audio and video capabilities, the demand for broadcast and sound engineering technicians is expected to increase.

In Utah, employment of sound engineering technicians is projected to increase 2.9 percent through 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
10.0201	TV Broadcasting 1 *	.50
10.0202	TV Broadcasting 2 *	.50
Or choose the following courses:		
10.0203	Video Production 1 *	.50
10.0204	Video Production 2 *	.50
Elective Courses:		
52.0312	Accounting 1	.50
52.0408	Advanced Commercial Photography	.50
50.0407	Basic Digital Photography *	.50
50.0406	Basic Film Photography *	.50
52.0211	Business Management	.50
50.0402	Commercial and Advertising Art *	.50
11.0201	Computer Programming 1	1.00
50.0401	Design and Visual Communications *	.50
11.0210	Digital Media 1	1.00
15.0321	Electronics 1	.50
15.0322	Electronics 2	.50
52.0621	Entrepreneurship	.50
10.0301	Introduction Graphic Communications *	.50
10.0205	Radio Broadcasting 1 *	.50
10.0206	Radio Broadcasting 2 *	.50
32.0199	Workplace Skills	.50

1.00 credit

2.00 credits

* Course can be taken up to 1.00 credit.

3.00 credits for completion

Television Broadcasting Technician is:

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

Sample Career Occupations

- > Audio and Video
- > Equipment Tech.
- > TV Broadcasting Teacher

In 2013, 15.9 percent of people employed as television, video, and motion picture camera operators and editors were women.

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. > 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		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Biological Science 1.00	Additional Credit 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	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		1.00	CTE 1.00	Refer to Career and Technical Education box above.				

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Mechanics and Repairs – Automotive Collision Repair

Get the Facts

The work of automotive service technicians and mechanics has evolved from simply mechanical to high technology.

Over 97 percent of all cars taken out of service are recycled, making them the most recycled product in the world.

Workforce Trends

Job opportunities in the automotive industry are very good for persons with formal training in automotive body repair and mechanics.



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
47.0633	Basic Auto Collision Repair *	.50
Choose one of the following courses:		
47.0603	Collision Non-Structural Repair *	.50
47.0623	Collision Refinishing and Painting *	.50
47.0643	Collision Structural Repair *	.50
Elective Courses:		
52.0312	Accounting 1	.50
52.0211	Business Management	.50
50.0401	Design and Visual Communications *	.50
47.0605	Diesel Technician *	.50
15.0321	Electronics 1 *	.50
52.0621	Entrepreneurship	.50
47.0604	Introduction to Automotive *	.50
10.0301	Introduction to Graphic Communications *	.50
48.0501	Machining 1 *	.50
48.0514	Metalworking 1 *	.50
47.0606	Small Vehicle Technician *	.50
48.0508	Welding Technician – Entry Level *	.50
32.0199	Workplace Skills	.50

1.00 credits

2.00 credits

3.00 credits for completion

Automotive Collision Repair is:

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

Sample Career Occupations

- > Automotive Body Repairer
- > Automotive Collision Repairer
- > Automotive Collision Repair Teacher
- > Automotive Specialty Technician

In 2013, 1.5 percent of the people employed as automotive body and related repairs were women.

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

* Course can be taken up to 1.00 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"> > Certificate > Associate degree > Bachelor's degree > Professional degree > On-the-job training > Apprenticeship > Military training <p>For more information on salary projections, labor market demand, and training options, visit UtahFutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Physics 1.00 or Physics with Technology 1.00	Additional Credit 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		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.

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Mechanics and Repairs – Automotive Service Technician

Get the Facts

According to the U.S. Department of Labor, the automotive industry is rapidly growing and "the work of automotive service technicians and mechanics has evolved from simply mechanical to high technology."

Workforce Trends

Job opportunities in the automotive industry are expected to be very good for persons with formal training, strong diagnostic and problem-solving skills, and knowledge of electronics and mathematics. Nationwide, employment of automotive service technicians and mechanics is projected to increase 9 percent through the year 2022.

In 2013, 1.8 percent of the people employed as automotive service technicians were women.



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)	Course #
47.0604	Introduction to Automotive *	.50
Choose two of the following courses:		
47.0634	ASE Brakes *	.50
47.0624	ASE Chassis MLR *	.50
47.0654	ASE Electrical/Electronics *	.50
47.0674	ASE Engine MLR *	.50
47.0664	ASE Engine Performance *	.50
47.0644	ASE Steering and Suspension *	.50
Elective Courses:		
52.0312	Accounting 1	.50
47.0633	Basic Automotive Collision Repair *	.50
52.0211	Business Management	.50
47.0603	Collision Non-Structural Repair *	.50
47.0605	Diesel Technician *	.50
15.0321	Electronics 1	.50
15.0322	Electronics 2	.50
52.0621	Entrepreneurship	.50
48.0501	Machining 1 *	.50
48.0514	Metalworking *	.50
14.1320	PLTW Digital Electronics	1.00
47.0606	Small Vehicle Technician *	.50
48.0508	Welding Technician – Entry Level *	.50

1.50 credits

1.50 credits

3.00 credits for completion

Automotive Service Technician is:

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

Sample Career Occupations

- > Aircraft Mechanic Technician
- > Automotive Service Technician
- > Automotive Service Technician Teacher
- > Mechanic
- > Motorboat Mechanic

ASE (Automotive Service Excellence) is a national certification for automotive service technicians.
www.ase.com/

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

* Course can be taken up to 1.00 credit. | Visit UtahCTE.org to learn how to earn industry certification in this Pathway.

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"> > Certificate > Associate degree > Bachelor's degree > Professional degree > On-the-job training > Apprenticeship > Military training <p>For more information on salary projections, labor market demand, and training options, visit UtahFutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Physics 1.00 or Physics with Technology 1.00	Additional Credit 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	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			Computer Tech. .50	Computer Technology .50				
College & Career Awareness 1.00		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.

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Mechanics and Repairs – Heavy Duty Diesel

Get the Facts

The Environmental Protection Agency (EPA) imposes strict emissions standards for diesel trucks. Clean diesel technologies reduce diesel emissions and their impact on human health.

Workforce Trends

Employment growth will result from the increased manufacturing of buses and trucks powered by durable, economical diesel engines. Opportunities are good for those with formal diesel mechanic training and experience with electronic and diagnostic equipment. In 2013, less than 1 percent of the people employed as diesel engine specialists were women.



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
47.0605	Diesel Technician *	.50
47.0613	Medium/Heavy Vehicle Systems *	.50
Elective Courses:		
52.0312	Accounting 1	.50
47.0634	ASE Brakes *	.50
47.0624	ASE Chassis MLR *	.50
47.0654	ASE Electrical/Electronics *	.50
47.0674	ASE Engine MLR *	.50
47.0664	ASE Engine Performance *	.50
47.0644	ASE Steering and Suspension *	.50
47.0633	Basic Automotive Collision Repair *	.50
52.0211	Business Management	.50
15.0321	Electronics 1	.50
15.0322	Electronics 2	.50
52.0621	Entrepreneurship	.50
47.0604	Introduction to Automotive *	.50
48.0514	Metalworking 1 *	.50
14.1320	PLTW Digital Electronics	1.00
47.0606	Small Vehicle Technician *	.50
32.0199	Workplace Skills	.50

1.00 credits

2.00 credit

3.00 credits for completion

Heavy Duty Diesel is:

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

Sample Career Occupations

- > Diesel Engine Specialist
- > Heavy Duty Diesel Teacher
- > Mechanics and Repairer Helper

ASE (Automotive Service Excellence) www.ase.com/ is a national certification for automotive service technicians.

* Course can be taken up to 1.00 credit.

Visit UtahCTE.org to learn how to earn industry certification in this Pathway.

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		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Physics 1.00 or Physics with Technology 1.00	Additional Credit 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	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		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.

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Personal Services – Cosmetology/Barbering

Get the Facts

Human hair is being used to clean up oil spills. Hair has a natural ability to absorb oils. Researchers have begun to use scrap hair from barbershops and beauty salons to keep our water clean.

In Utah, a hairdresser, hairstylist, and cosmetologist or barber must be licensed.

Workforce Trends

Population growth and expanding services are expected to create good job prospects among hairstylists. In 2013, 19.2 percent of people employed as barbers were women.



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
12.0403	Cosmetology (Will include advanced Cosmetology courses.)	1.00
Or choose the following course:		
12.0402	Barbering (Will include advanced Barbering courses.)	1.00
Elective Courses:		
52.0312	Accounting 1	.50
52.0322	Accounting 2	.50
12.0409	Basic Esthetician and Skin Care	1.00
52.0211	Business Management	.50
52.0311	Business Mathematics and Personal Finance	.50
52.0621	Entrepreneurship	.50
12.0410	Nail Technician	1.00
32.0199	Workplace Skills	.50

2.00 credits—
Cosmetology

2.00 credits—
Barbering

1.00 credit

3.00 credits for completion—
Cosmetology

3.00 credits for completion—
Barbering

Cosmetology/ Barbering is:

- > High skill
- > High demand

Sample Career Occupations

- > Barber
- > Cosmetologist
- > Cosmetology/Barbering Teacher

Foundation courses taken beyond the required credits can be used as elective credit.
Visit UtahCTE.org to learn how to earn industry certification in this Pathway.

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"> > Certificate > Associate degree > Bachelor's degree > Professional degree > On-the-job training > Apprenticeship > Military training <p>For more information on salary projections, labor market demand, and training options, visit UtahFutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Biological Science 1.00 or Chemistry 1.00	Additional Credit 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	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		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.

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Personal Services – Esthetician/Nail Technician

Get the Facts

Having nails manicured is an ancient activity. There is evidence that, even 4,000 years ago, it was known to our predecessors.

In Utah, an electrologist and nail technician (manicurist and pedicurist) must be licensed.

Workforce Trends

Population growth and expanding services are expected to create good job prospects among manicurists and pedicurists.



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
12.0410	Nail Technician	1.00
<i>Or choose the following course:</i>		
12.0409	Basic Esthetician and Skin Care	1.00
Elective Courses:		
52.0312	Accounting 1	.50
52.0322	Accounting 2	.50
12.0402	Barbering (Will include advanced Barbering courses.)	1.00
52.0211	Business Management	.50
52.0311	Business Mathematics and Personal Finance	.50
12.0403	Cosmetology (Will include advanced Cosmetology courses.)	1.00
52.0621	Entrepreneurship	.50
32.0199	Workplace Skills	.50

Foundation courses taken beyond the required credits can be used as elective credit. Visit UtahCTE.org to learn how to earn industry certification in this Pathway.

1.00 credit—
Esthetician

1.00 credit—
Nail Technician

2.00 credit

3.00 credits for completion—
Esthetician
3.00 credits for completion—
Nail Technician

Esthetician/Nail Technician is:

- > High skill
- > High demand

Sample Career Occupations

- > Manicurist
- > Nail Technician Teacher
- > Pedicurist
- > Esthetician
- > Esthetician Teacher
- > Skin Care Specialist

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		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Biological Science 1.00 or Chemistry 1.00	Additional Credit 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	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		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.



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

Area of Study: Skilled and Technical Sciences Education

Pathway: Precision Production Trades – Aerospace Manufacturing

Get the Facts

Aerospace operations technicians install and maintain equipment used in testing new aircraft and spacecraft. They are physically active in constructing the designs that aerospace engineers develop.

Aerospace engineering and operations technicians work directly in manufacturing or industrial plants.

Workforce Trends

Aerospace operations technicians work on many projects related to national defense and therefore require security clearances.

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
15.1351	CAD Mechanical Design 1	.50
48.0520	Composites 1	.50
32.9902	CTE Internship	.50
08.0211	Leadership Principles	.50
14.3611	Manufacturing Principles 1	.50
48.0514	Metalworking 1 *	.50

* Course can be taken up to 1.00 credit.

3.00 credit

3.00 credits for completion

Aerospace Manufacturing is:

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

Sample Career Occupations

- > Aerospace Engineer
- > Composite Technician
- > Drafter
- > Industrial Engineering Technician
- > Mechanical Engineering Technician
- > Skilled Assembler
- > Weld Engineer
- > Weld Inspector
- > Welder

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"> > Certificate > Associate degree > Bachelor's degree > Professional degree > On-the-job training > Apprenticeship > Military training <p>For more information on salary projections, labor market demand, and training options, visit UtahFutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Physics 1.00 or Physics with Technology 1.00	Additional Credit 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 1.00 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.

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Precision Production Trades – Cabinetmaking/Millwork

Get the Facts

Those individuals who work in the cabinetmaking/millwork occupation are highly skilled and require extensive on-the-job training. Mathematics, especially geometry, is an essential skill and computer skills are increasingly important.

In Utah, construction managers, construction inspectors, and building inspectors must be licensed.

Workforce Trends

Job prospects will be best for highly skilled workers and those with knowledge of computerized machine tool operation.



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
48.0702	Furniture Design & Manufacturing *	.50
48.0701	Woodworking *	.50
Elective Courses:		
52.0312	Accounting 1	.50
52.0211	Business Management	.50
48.0703	Cabinetmaking	1.00
15.1341	CAD Architectural Design 1	.50
15.1351	CAD Mechanical Design 1	.50
46.0201	Carpentry 1	1.00
50.0402	Commercial and Advertising Art *	.50
50.0401	Design and Visual Communications *	.50
52.0621	Entrepreneurship	.50
50.0404	Industrial Design	1.00
48.0501	Machining 1 *	.50
48.0503	Machining 2 *	.50
48.0514	Metalworking 1 *	.50
14.1330	PLTW Civil Engineering and Architecture	1.00
14.1390	PLTW Engineering Design and Development	1.00
48.0508	Welding Technician – Entry Level *	.50
32.0199	Workplace Skills	.50

* Course can be taken up to 1.00 credit.

3.00 credits for completion

Cabinetmaking/ Millwork is:
> High demand

Sample Career Occupations

- > Cabinetmaker
- > Cabinetmaking/ Millwork Teacher
- > Carpenter
- > Carpenter Helper
- > Finish Carpenter
- > Foreman
- > Line Supervisor

1.00 credit

2.00 credits

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"> > Certificate > Associate degree > Bachelor's degree > Professional degree > On-the-job training > Apprenticeship > Military training <p>For more information on salary projections, labor market demand, and training options, visit UtahFutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Physics 1.00 or Physics with Technology 1.00	Additional Credit 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	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		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.

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Precision Production Trades – Graphics/Printing

Get the Facts

The United States and Canada are the world's largest producers of paper and paper products. Per year, the average American consumes more than 500 pounds of paper.

Workforce Trends

Working conditions in paper and printing manufacturing plants have become less hazardous as the industry has become more automated. Companies now use fewer chemicals and solutions resulting in fewer equipment related accidents.



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
<i>Choose two of the following courses:</i>		
10.0303	Advanced Production Graphics *	.50
10.0304	Digital Print Design *	.50
10.0302	Intermediate Graphic Communications *	.50
10.0301	Introduction Graphic Communications*	.50
10.0305	Screen Printing Technology *	.50
Elective Courses:		
11.0210	Digital Media 1	1.00
50.0401	Design and Visual Communications *	.50
50.0402	Commercial and Advertising Art *	.50
50.0404	Industrial Design *	.50
50.0406	Basic Film Photography *	.50
50.0407	Basic Digital Photography *	.50
50.0408	Advanced Commercial Photography *	.50
52.0211	Business Management	.50
52.0312	Accounting 1	.50
52.0621	Entrepreneurship	.50
32.0199	Workplace Skills	.50

1.00 credit

2.00 credits

3.00 credits for completion

* Course can be taken up to 1.00 credit.

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

Graphics/Printing is:

- > High skill
- > High wage

Sample Career Occupations

- > Graphic Designer
- > Graphics/Printing Teacher
- > Printing Machine Operator

In 2013, 18.1 percent of the people employed as printing press operators were women.

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		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Chemistry 1.00 or Physics 1.00 or Physics with Tech. 1.00	Additional Credit 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	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		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.

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Precision Production Trades – Machine Tool

Get the Facts

No two countries were more responsible for the Industrial Revolution than America and England. In England, machines served to make talented artisans better. In America, machines served to make entrepreneurs more productive.

Workforce Trends

Despite rising productivity that is expected to limit employment growth, opportunities should be excellent because not enough qualified people are attracted to production-related occupations.



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
48.0501	Machining 1 *	.50
48.0503	Machining 2 *	.50
Elective Courses:		
52.0312	Accounting 1	.50
52.0211	Business Management	.50
15.1351	CAD Mechanical Design 1	.50
15.1352	CAD Mechanical Design 2	.50
52.0621	Entrepreneurship	.50
47.0604	Introduction to Automotive *	.50
48.0514	Metalworking 1 *	.50
14.1340	PLTW Computer Integrated Manufacturing	1.00
14.1390	PLTW Engineering Design and Development	1.00
48.0508	Welding Technician – Entry Level *	.50
48.0701	Woodworking *	.50
32.0199	Workplace Skills	.50

1.00 credit

2.00 credits

3.00 credits for completion

Machine Tool is:

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

Sample Career Occupations

- > Machine Tool Cutter
- > Machine Tool Teacher
- > Machinist
- > Machinery Mechanic

In 2013, 14.2 percent of the people employed as machine tool setters were women.

* Course can be taken up to 1.00 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"> > Certificate > Associate degree > Bachelor's degree > Professional degree > On-the-job training > Apprenticeship > Military training <p>For more information on salary projections, labor market demand, and training options, visit UtahFutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Physics 1.00 or Physics with Technology 1.00	Additional Credit 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	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		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.

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Precision Production Trades – Welding

Get the Facts

During the Middle Ages, the art of blacksmithing was developed and many items of iron were produced which were welded by hammering. It was not until the 19th century that welding as we know it today was invented.

The nation's aging infrastructure will require the expertise of welders, cutters, solderers, and brazers to help rebuild bridges, highways, and buildings. The construction of new infrastructure will result in new jobs.

Workforce Trends

In Utah, the employment of welders is projected to grow 4.2 percent through the year 2022. Job prospects should be excellent for skilled candidates.



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
48.0508	Welding Technician – Entry Level *	.50
48.0510	Welding Technician – Intermediate Level *	.50
Elective Courses:		
52.0312	Accounting 1	.50
52.0211	Business Management	.50
15.1351	CAD Mechanical Design 1	.50
15.1352	CAD Mechanical Design 2	.50
15.0321	Electronics 1	.50
52.0621	Entrepreneurship	.50
48.0501	Machining 1 *	.50
48.0503	Machining 2 *	.50
48.0514	Metalworking 1 *	.50
14.1340	PLTW Computer Integrated Manufacturing	1.00
14.1390	PLTW Engineering Design and Development	1.00
48.0506	Sheet Metal *	.50
48.0512	Welding Technician – Advanced Level *	.50
32.0199	Workplace Skills	.50

1.00 credit

2.00 credits

3.00 credits for completion

Welding is:

- > High skill
- > High demand

Sample Career Occupations

- > Agricultural Education Teacher
- > Welder/Cutter
- > Welding Machine Operator
- > Welding Teacher

In 2013, 4.6 percent of the people employed as welders were women.

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. > 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		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Physics 1.00 or Physics with Technology 1.00	Additional Credit 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	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		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.



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

Area of Study: Skilled and Technical Sciences Education

Pathway: Protective Services

Get the Facts

There are over 1 million firefighters in the United States. In Utah, approximately 85 percent of firefighters are volunteers and approximately 14 percent are career firefighters.

In the U.S. approximately 6,200 women currently work as full-time career firefighters and officers. It is estimated that an additional 35- 40,000 women are in the volunteer fire service.

Workforce Trends

In Utah, employment of firefighters is projected to grow 1.8 percent through the year 2022. Those who have completed some firefighter education at a community college and have an EMT certification will have an advantage.

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
51.0810	Emergency Medical Responder	.50
Choose one of the following courses:		
43.0203	Fire Science *	.50
43.0107	Law Enforcement *	.50
Elective Courses:		
50.0407	Basic Digital Photography *	.50
15.1351	CAD Architectural Design 1	.50
43.0105	Careers in Law Enforcement	.50
46.0000	Construction Trades Foundation	.50
43.0108	Criminal Law *	.50
15.0507	Environmental Technician *	.50
43.0301	Homeland Security *	.50
47.0604	Introduction to Automotive *	.50
43.0102	Introduction to Corrections	.50
43.0103	Introduction to Criminal Justice	.50
51.1004	Medical Forensics	.50
10.0203	Video Production 1 *	.50
32.0199	Workplace Skills	.50

1.00 credit

1.50 credits

* Course can be taken up to 1.00 credit.

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

2.50 credits for completion

Protective Services is:

- > High skill
- > High demand

Sample Career Occupations

- > Battalion Chief
- > Fire Chief's Aide
- > Firefighter Supervisor
- > Firefighting Teacher
- > Fire Inspector
- > Fire Marshall
- > Forest Firefighter

In 2013, 3.5 percent of the people employed as firefighters were women.

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"> > Certificate > Associate degree > Bachelor's degree > Professional degree > On-the-job training > Apprenticeship > Military training <p>For more information on salary projections, labor market demand, and training options, visit UtahFutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Biological Science 1.00 or Chemistry 1.00	Additional Credit 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		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.

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Transportation and Material Moving – Aviation Technology

Get the Facts

A Boeing 747-400ER airliner holds 63,000 gallons of fuel!
 In 2013, 2.2 percent of people employed as aircraft mechanics or service technicians were women.
 In Utah, an aircraft mechanic, an aircraft service technician, and an aircraft pilot must be licensed.

Workforce Trends

Rising population and income will drive demand for airline travel and the need for commercial aviation workers. Those who have attended college for at least 2 years and have experience dealing with the public should have the best prospects.



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
49.0112	Aircraft Systems *	.50
49.0102	Private Pilot *	.50
Elective Courses:		
52.0312	Accounting 1	.50
49.0132	Air Transportation *	.50
47.0609	Aircraft Mechanics Technician/A&P *	.50
49.0122	Aviation History *	.50
50.0407	Basic Digital Photography *	.50
50.0406	Basic Film Photography *	.50
52.0211	Business Management	.50
15.0321	Electronics 1	.50
15.0322	Electronics 2	.50
52.0621	Entrepreneurship	.50
49.0142	Flight Simulator *	.50
47.0604	Introduction to Automotive *	.50
14.1350	PLTW Aerospace Engineering	1.00
14.1320	PLTW Digital Electronics	1.00
32.0199	Workplace Skills	.50

* Course can be taken up to 1.00 credit.

3.00 credits for completion

Aviation Technology is:

- > High skill
- > High wage
- > High demand (general aviation)

Sample Career Occupations

- > Air Traffic Controller
- > Aircraft Mechanic
- > Aircraft Pilot
- > Aircraft Service Technician
- > Commercial Pilot

In 2012, 4.1 percent of the people employed as aircraft pilots and flight engineers were women.

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"> > Certificate > Associate degree > Bachelor's degree > Professional degree > On-the-job training > Apprenticeship > Military training <p>For more information on salary projections, labor market demand, and training options, visit UtahFutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Physics 1.00 or Physics with Technology 1.00	Additional Credit 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	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		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.

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Visual Arts – Commercial Art

Get the Facts

Many graphic designers create visual concepts, by hand or using computer software, to communicate ideas that inspire, inform, or captivate consumers. They develop the overall layout and production design for advertisements, brochures, magazines, and corporate reports.

Workforce Trends

The expanding electronic media and entertainment industries will offer opportunities for animators, illustrators, and graphic artists.

In Utah, the employment of graphic designers is projected to grow 2.8 percent through 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
50.0402	Commercial and Advertising Art *	.50
50.0401	Design and Visual Communications *	.50
50.0404	Industrial Design	1.00
Elective Courses:		
11.0216	3D Animation	.50
11.0215	3D Graphics	.50
52.0312	Accounting 1	.50
10.0303	Advanced Production Graphics *	.50
50.0407	Basic Digital Photography *	.50
50.0406	Basic Film Photography *	.50
52.0211	Business Management	.50
15.1341	CAD Architectural Design 1	.50
15.1351	CAD Mechanical Design 1	.50
11.0210	Digital Media 1	1.00
10.0304	Digital Print Design *	.50
52.0621	Entrepreneurship	.50
10.0302	Intermediate Graphic Communications *	.50
10.0301	Introduction Graphic Communications *	.50
10.0305	Screen Printing Technology *	.50
32.0199	Workplace Skills	.50

1.00 credit

2.00 credits

3.00 credits for completion

Commercial Art is:
> High wage

Sample Career Occupations

- > Advertising Designer
- > Animator/Illustrator
- > Commercial Art Teacher
- > Commercial Designer
- > Fashion Artist
- > Graphic Designer
- > Painter/Illustrator
- > Photographer
- > Sketch Artist

* 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	There are a number of options for education and training beyond high school, depending on your career goals. > 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		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Chemistry 1.00	Additional Credit 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	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		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.

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

Area of Study: Skilled and Technical Sciences Education

Pathway: Visual Arts – Commercial Photography

Get the Facts

Daguerreotype was the first successful photographic process. This process took 10 to 20 minutes to properly expose to available light. Therefore, people were required to sit still for that period of time to have their picture taken.

The word “photography” comes from the Greek words for light and writing.

Workforce Trends

The number of portrait photographers is projected to increase along with the population. New opportunities should arise with Internet-based media companies, but keen competition is expected.



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) <i>Choose two of the following courses:</i>	Credit
50.0406	Basic Film Photography *	.50
50.0407	Basic Digital Photography *	.50
50.0408	Advanced Commercial Photography *	.50
Elective Courses:		
11.0216	3D Animation	.50
11.0215	3D Graphics	.50
52.0312	Accounting 1	.50
52.0211	Business Management	.50
15.1351	CAD Mechanical Design 1	.50
50.0402	Commercial and Advertising Art *	.50
50.0401	Design and Visual Communications *	.50
11.0210	Digital Media 1	1.00
52.0621	Entrepreneurship	.50
10.0302	Intermediate Graphics Communications *	.50
10.0301	Introduction Graphic Communications *	.50
10.0201	Television Broadcasting 1 *	.50
10.0203	Video Production 1 *	.50
32.0199	Workplace Skills	.50

1.00 credit

2.00 credits

Commercial Photography is:
> High wage

Sample Career Occupations

- > Camera Operator
- > Commercial Photography Teacher
- > Photographer

* Course can be taken up to 1.00 credit.

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

3.00 credits for completion

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"> > Certificate > Associate degree > Bachelor's degree > Professional degree > On-the-job training > Apprenticeship > Military training <p>For more information on salary projections, labor market demand, and training options, visit UtahFutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00		
Science .50	Science 1.00	1.50	Science 3.00	Earth Systems 1.00	Chemistry 1.00 or Physics 1.00 or Physics with Technology 1.00	Additional Credit 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	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		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.

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