

# High School to College and Career Pathway: Secondary

Career and Technical Education: Preparing Students for College and Career!



## 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 32 percent of all carpenters are self-employed.

In Utah, a carpenter must be licensed.

#### 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
46.0000	Construction Trades Foundation	.50
46.0201	Carpentry 1	1.00
	<b>Elective Courses:</b>	
15.1301	Technical Design 1	.50
15.1302	Architectural Design 1	.50
15.1303	Architectural Design 2	.50
46.0101	Masonry/Tile	1.00
46.0202	Carpentry 2	1.00
46.0302	Electrician 1	1.00
46.0499	Concrete Placing & Finishing	1.00
46.0501	Plumbing 1	1.00
48.0701	Woodworking	.50
48.0702	Furniture Design & Manufacturing	1.00
48.0703	Cabinetmaking	1.00
32.0199	Student Internship (Critical Workplace Skills)	.50

1.50 credits

1.50 credits

3.00 credits for completion

#### Carpentry is:

- > High skill
- > High wage
- > High demand
- > Nontraditional for females

#### Sample Career Occupations

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

This is a nontraditional occupation for women. In 2007, 1.9 percent of the people employed in this occupation 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"> <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> For more information on salary projections, labor market demand, and training options, visit <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## 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.  
In Utah, an electrician must be licensed.

**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
	<b>Elective Courses:</b>	
15.1301	Technical Design 1	.50
15.1302	Architectural Design 1	.50
15.1303	Architectural Design 2	.50
46.0201	Carpentry 1	1.00
46.0304	Electrician 2	1.00
46.0501	Plumbing 1	1.00
47.0105	Basic Electronics	.50
47.0107	Advanced Electronics	1.00
47.0108	Digital Electronics	1.00
48.0701	Woodworking	.50
32.0199	Student Internship (Critical Workplace Skills)	.50

3.00 credits for completion

**Electrician is:**

- > High skill
- > High wage
- > High demand
- > Nontraditional for females

**Sample Career Occupations**

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

This is a nontraditional occupation for women. In 2007, 1.7 percent of the people employed in this occupation 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"> <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> For more information on salary projections, labor market demand, and training options, visit <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## 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 3.8 percent through the year 2018.



#### 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
<b>Elective Courses:</b>		
15.1301	Technical Design 1	.50
15.1302	Architectural Design 1	.50
15.1303	Architectural Design 2	.50
46.0201	Carpentry 1	1.00
46.0302	Electrician 1	1.00
46.0501	Plumbing 1	1.00
47.0105	Basic Electronics	.50
47.0107	Advanced Electronics	1.00
47.0108	Digital Electronics	1.00
32.0199	Student Internship (Critical Workplace Skills)	.50

1.50 credits

1.50 credits

3.00 credits for completion

#### HVAC is:

- > High skill
- > High wage
- > High demand
- > Nontraditional for females

#### Sample Career Occupations

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

This is a nontraditional occupation for women. In 2007, less than 1 percent of the people employed in this occupation 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"> <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://www.utahfutures.org">www.utahfutures.org</a>.</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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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

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## 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 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
<b>Elective Courses:</b>		
15.1301	Technical Design 1	.50
15.1302	Architectural Design 1	.50
15.1303	Architectural Design 2	.50
46.0201	Carpentry 1	1.00
46.0302	Electrician 1	1.00
46.0502	Plumbing 2	1.00
47.0105	Basic Electronics	1.00
32.0199	Student Internship (Critical Workplace Skills)	.50

1.50 credits

1.50 credits

3.00 credits for completion

#### Plumbing is:

- > High skill
- > High wage
- > High demand
- > Nontraditional for females

#### Sample Career Occupations

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

This is a nontraditional occupation for women. In 2007, 1.5 percent of the people employed in this occupation 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"> <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> For more information on salary projections, labor market demand, and training options, visit <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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

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## Area of Study: Skilled and Technical Sciences Education

### Pathway: Communication – Radio Broadcasting Technician

**Get the Facts**  
Throughout the U.S., there are over 14,000 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.

**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
<b>Elective Courses:</b>		
10.0201	Television Broadcasting 1	.50
10.0202	Television Broadcasting 2	.50
10.0203	Video Production 1	.50
10.0204	Video Production 2	.50
11.0201	Computer Programming 1	1.00
11.0210	Graphic Communications, Introduction	.50
11.0210	Multimedia	1.00
47.0105	Basic Electronics	.50
50.0406	Basic Film Photography	.50
50.0407	Basic Digital Photography	.50
32.0199	Student Internship (Critical Workplace Skills)	.50

3.00 credits for completion

**Radio Broadcasting is:**

- > High skill
- > Nontraditional for females

**Sample Career Occupations**

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

Radio and telecommunications equipment installers and repairers is a nontraditional occupation for women. Over 14 percent of the people employed in this occupation are 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	<b>Beyond High School</b> There are a number of options for education and training beyond high school, depending on your career goals. <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> For more information on salary projections, labor market demand, and training options, visit <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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	
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 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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## Area of Study: Skilled and Technical Sciences Education

### Pathway: Communication – Television Broadcasting Technician

**Get the Facts**  
 Nearly 25 percent of all American households watch TV online. Two-thirds of online TV viewers access programs through streaming video, while 41 percent choose free downloads.

**Workforce Trends**  
 Employment growth will result from increased hours of programming, but will be offset by labor saving technology.

In 2010, 3D television is expected to enter the homes of Americans. This new technology will equal the transition from black-and-white to color television.

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
<i>Or choose the following courses:</i>		
10.0203	Video Production 1	.50
10.0204	Video Production 2	.50
<b>Elective Courses:</b>		
10.0205	Radio Broadcasting 1	.50
10.0206	Radio Broadcasting 2	.50
11.0201	Computer Programming 1	1.00
11.0210	Graphic Communications, Introduction	.50
11.0210	Multimedia	1.00
47.0105	Basic Electronics	.50
50.0406	Basic Film Photography	.50
50.0407	Basic Digital Photography	.50
32.0199	Student Internship (Critical Workplace Skills)	.50

1.00 credit

2.00 credits

3.00 credits for completion

**Television Broadcasting Technician is:**

- > High skill
- > High wage
- > High demand
- > Nontraditional for females

**Sample Career Occupations**

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

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://www.utahfutures.org">www.utahfutures.org</a>.</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	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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!*



## Area of Study: Skilled and Technical Sciences Education

### Pathway: Mechanics and Repairs – Automotive Collision Repair

#### Get the Facts

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

This is a nontraditional occupation for women. In 2007, 1.6 percent of the people employed in this occupation were women.

#### 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
<i>Choose one of the following courses:</i>		
47.0603	Collision Non-Structural and Structural Repair	1.00
47.0623	Collision Refinishing and Painting	1.00
<b>Elective Courses:</b>		
47.0105	Basic Electronics	.50
47.0604	Introduction to Automotive	.50
47.0606	Small Vehicle Technician	.50
48.0508	Welding Technician – Entry Level	1.00
32.0199	Student Internship (Critical Workplace Skills)	.50

1.50 credits

1.50 credits

3.00 credits for completion

\* Will include advanced Automotive Collision Repair courses.

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

Visit [UtahCTE.org](http://UtahCTE.org) to learn how to earn industry certification in this Pathway.

#### Automotive Collision Repair is:

- > High skill
- > High wage
- > High demand
- > Nontraditional for females

#### Sample Career Occupations

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

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	<b>There are a number of options for education and training beyond high school, depending on your career goals.</b> <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> For more information on salary projections, labor market demand, and training options, visit <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## 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 5 percent through the year 2018.



#### 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
47.0604	Introduction to Automotive	.50
<i>Choose one of the following courses:</i>		
47.0612	Vehicle Inspection Technician	.50
47.0624	ASE General Service Technician *	1.00
47.0634	ASE Brakes	1.00
47.0644	ASE Steering and Suspension	1.00
47.0654	ASE Electrical/Electronics	2.00
47.0664	ASE Engine Performance	2.00
<b>Elective Courses:</b>		
47.0633	Basic Automotive Collision Repair	.50
47.0105	Basic Electronics	.50
47.0603	Collision Non-Structural and Structural Repair	1.00
47.0606	Small Vehicle Technician	.50
32.0199	Student Internship (Critical Workplace Skills)	.50

1.50 credits

1.50 credits

3.00 credits for completion

\* This course can be taken multiple times to meet the ASE standard.

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

Visit [UtahCTE.org](http://UtahCTE.org) to learn how to earn industry certification in this Pathway.

#### Automotive Service Technician is:

- > High skill
- > High wage
- > High demand
- > Nontraditional for females

#### Sample Career Occupations

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

This is a nontraditional occupation for women. In 2007, 1.6 percent of the people employed in this occupation 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"> <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> For more information on salary projections, labor market demand, and training options, visit <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## Area of Study: Skilled and Technical Sciences Education

### Pathway: Mechanics and Repairs – Electronics

#### Get the Facts

A typical American household owns 23 electronic products, spending over \$1,200 per year on such devices.

#### Workforce Trends

Employment will be limited by computer-aided design and other technologies that increase productivity. Opportunities will be best for those who have an associate degree or extensive job training.



#### 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
47.0105	Basic Electronics	.50
47.0108	Digital Electronics	1.00
	<b>Elective Courses:</b>	
15.1301	Technical Design 1	.50
46.0302	Electrician 1	1.00
47.0107	Advanced Electronics	1.00
47.0604	Introduction to Automotive	.50
48.0701	Woodworking	.50
32.0199	Student Internship (Critical Workplace Skills)	.50

1.50 credits

1.50 credits

3.00 credits for completion

#### Electronics is:

- > High skill
- > High wage
- > High demand
- > Nontraditional for females

#### Sample Career Occupations

- > Electronics Equipment Assembler
- > Electronics Drafter
- > Electronics Engineer
- > Electronics Installer Repairer
- > Electronics Teacher

This is a nontraditional occupation for women. In 2007, 8.6 percent of the people employed in this occupation 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"> <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> For more information on salary projections, labor market demand, and training options, visit <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## Area of Study: Skilled and Technical Sciences Education

### Pathway: Mechanics and Repairs – Heavy Duty Diesel

#### Get the Facts

In 2006, the Environmental Protection Agency (EPA) imposed stricter emissions standards for diesel trucks. This regulation is designed to reduce diesel truck emissions by 90 percent.

#### 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.



#### 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*	1.00
47.0613	Medium/Heavy Vehicle Systems	1.00
	<b>Elective Courses:</b>	
47.0633	Basic Automotive Collision Repair	.50
47.0105	Basic Electronics	.50
47.0604	Introduction to Automotive	.50
47.0606	Small Vehicle Technician	.50
47.0612	Vehicle Inspection Technician	1.00
47.0624	ASE General Service Technician	1.00
47.0634	ASE Brakes	1.00
47.0644	ASE Steering and Suspension	1.00
47.0654	ASE Electrical/Electronics	1.00
47.0664	ASE Engine Performance	1.00
32.0199	Student Internship (Critical Workplace Skills)	

2.00 credits

1.00 credit

3.00 credits for completion

#### Heavy Duty Diesel is:

- > High skill
- > High wage
- > High demand
- > Nontraditional for females

#### Sample Career Occupations

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

This is a nontraditional occupation for women. In 2007, 5.3 percent of the people employed in this occupation 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"> <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> For more information on salary projections, labor market demand, and training options, visit <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## 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.

**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
48.0701	Woodworking	.50
48.0702	Furniture Design & Manufacturing	1.00
<b>Elective Courses:</b>		
15.1301	Technical Design 1	.50
15.1302	Architectural Design 1	.50
15.1303	Architectural Design 2	.50
46.0201	Carpentry 1	1.00
48.0703	Cabinetmaking	1.00
52.0312	Accounting 1	.50
32.0199	Student Internship (Critical Workplace Skills)	.50

3.00 credits for completion

**Cabinetmaking/ Millwork is:**  
> High demand  
> Nontraditional for females

**Sample Career Occupations**  
> Cabinetmaker  
> Cabinetmaking/ Millwork Teacher  
> Carpenter  
> Carpenter Helper  
> Finish Carpenter  
> Foreman  
> Line Supervisor

This is a nontraditional occupation for women. In 2007, 6.5 percent of the people employed in this occupation 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 <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## Area of Study: Skilled and Technical Sciences Education

### Pathway: Precision Production Trades – Design Technology (formerly Drafting/CAD)

#### 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 Utah, an architect and a landscape architect must be licensed.

#### 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 post-secondary 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
15.1301	Technical Design 1	.50
15.1302	Architectural Design 1	.50
15.1303	Architectural Design 2	1.00
15.1306	Technical Design 2	1.00
<b>Elective Courses:</b>		
46.0201	Carpentry 1	1.00
48.0503	Machine Tool	1.00
48.0508	Welding Technician, Entry Level	.50
48.0701	Woodworking	.50
48.0702	Furniture Design & Manufacturing	1.00
32.0199	Student Internship (Critical Workplace Skills)	.50

1.00 credit

1.50 credits

2.50 credits for completion

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

#### Design Technology is:

- > High skill
- > High wage
- > High demand
- > Nontraditional for females

#### Sample Career Occupations

- > Architectural Drafter
- > Civil Engineer
- > Computer-Aided Drafter
- > Drafting/CAD Teacher
- > Interior Designer
- > Landscape Designer
- > Mechanical Drafter
- > Surveyor
- > Urban Planner

This is a nontraditional occupation for women. In 2007, 20.6 percent of the people employed in this occupation 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"> <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> For more information on salary projections, labor market demand, and training options, visit <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## 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 700 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
10.0301	Introduction Graphic Communications	.50
10.0302	Intermediate Graphic Communications	.50
	<b>Elective Courses:</b>	
10.0303	Advanced Graphic Communications	1.00
10.0304	Digital File Preparation	1.00
10.0305	Introduction Screen Printing	.50
11.0210	Digital Media I	1.00
47.0105	Basic Electronics	.50
32.0199	Student Internship (Critical Workplace Skills)	.50

1.00 credit

2.00 credits

3.00 credits for completion

#### Graphics/Printing is:

- > High skill
- > High wage
- > Nontraditional for females

#### Sample Career Occupations

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

A printing machine operator is a nontraditional occupation for women. IN 2007, 17.2 percent of the people employed in this occupation 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"> <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> For more information on salary projections, labor market demand, and training options, visit <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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			Computer Tech. .50	Computer Technology .50				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## 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
48.0503	Machine Tool *	.50
<b>Elective Courses:</b>		
15.1301	Technical Design 1	.50
15.1302	Architectural Design 1	.50
15.1303	Architectural Design 2	.50
15.1306	Mechanical Drafting	.50
48.0508	Welding Technician – Entry Level	1.00
48.0701	Woodworking	.50
32.0199	Student Internship (Critical Workplace Skills)	.50

2.00 credits

1.00 credit

3.00 credits for completion

\* Will include advanced Machine Tool courses.

#### Machine Tool is:

- > High skill
- > High wage
- > High demand
- > Nontraditional for females

#### Sample Career Occupations

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

This is a nontraditional occupation for women. In 2007, 13.2 percent of the people employed in this occupation 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"> <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://www.utahfutures.org">www.utahfutures.org</a>.</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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## 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.

#### Workforce Trends

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	1.00
48.0510	Welding Technician – Intermediate Level	1.00
<b>Elective Courses:</b>		
15.1301	Technical Design 1	.50
15.1302	Architectural Design 1	.50
15.1303	Architectural Design 2	.50
15.1306	Mechanical Drafting	.50
47.0105	Basic Electronics	.50
48.0503	Machine Tool	1.00
48.0506	Sheet Metal	.50
48.0512	Welding Technician – Advanced Level	1.00
32.0199	Student Internship (Critical Workplace Skills)	.50

2.00 credits

1.00 credit

3.00 credits for completion

#### Welding is:

- > High skill
- > High demand
- > Nontraditional for females

#### Sample Career Occupations

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

This is a nontraditional occupation for women. In 2007, 5.6 percent of the people employed in this occupation were women.



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"> <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://www.utahfutures.org">www.utahfutures.org</a>.</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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## Area of Study: Skilled and Technical Sciences Education

### Pathway: Personal Service – 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 cosmetologist or barber must be licensed.

#### Workforce Trends

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



#### 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
12.0401	Cosmetology*	1.00
	<i>Or choose the following course:</i>	
12.0402	Barbering**	1.00
	<b>Elective Courses:</b>	
12.0410	Nail Technician	1.00
12.0409	Basic Esthetician and Skin Care	1.00
52.0211	Business Management	.50
52.0311	Business Math	.50
52.0312	Accounting I	.50
32.0199	Student Internship (Critical Workplace Skills)	.50

3.00 credits—  
Cosmetology

2.00 credits—  
Barbering

1.00 credit

4.00 credits for completion—  
Cosmetology

3.00 credits for completion—  
Barbering

\* Will include advanced Cosmetology courses.

\*\* Will include advanced Barbering courses.

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

#### Cosmetology/ Barbering is:

- > High skill
- > High demand

#### Sample Career Occupations

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

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"> <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> For more information on salary projections, labor market demand, and training options, visit <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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			Computer Tech. .50	Computer Technology .50				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## Area of Study: Skilled and Technical Sciences Education

### Pathway: Personal Service – 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 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
	<b>Elective Courses:</b>	
12.0401	Cosmetology*	1.00
12.0402	Barbering**	1.00
52.0211	Business Management	.50
52.0311	Business Math	.50
52.0312	Accounting I	.50
32.0199	Student Internship (Critical Workplace Skills)	.50

1.00 credit—  
Esthetician

1.00 credit—  
Nail Technician

1.00 credit

2.00 credits for completion—  
Esthetician

2.00 credits for completion—  
Nail Technician

\* Will include advanced Cosmetology courses.

\*\* Will include advanced Barbering courses.

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



#### Esthetician/Nail Technician is:

- > High skill
- > High demand
- > Nontraditional for males

#### 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"> <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> For more information on salary projections, labor market demand, and training options, visit <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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			Computer Tech. .50	Computer Technology .50				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## Area of Study: Skilled and Technical Sciences Education

### Pathway: Protective Services – Firefighting

#### 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 2009, there were approximately 9,700 female firefighters nationwide.

#### Workforce Trends

In Utah, employment of firefighters is projected to grow 3.4 percent through the year 2018. Those who have completed some firefighter education at a community college and have an EMT certification will have an additional 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
43.0203	Fire Science	.50
51.0810	EMS, Introduction	.50
<b>Elective Courses:</b>		
15.0507	Environmental Science	.50
21.0105	Physics with Technology	1.00
32.0199	Student Internship (Critical Workplace Skills)	.50

1.00 credit

1.00 credit

2.00 credits for completion

#### Firefighting is:

- > High skill
- > High demand
- > Nontraditional for females

#### Sample Career Occupations

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

This is a nontraditional occupation for women. In 2007, 5.3 percent of the people employed in this occupation 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"> <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> For more information on salary projections, labor market demand, and training options, visit <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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			Computer Tech.	.50	Computer Technology .50				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## Area of Study: Skilled and Technical Sciences Education

### Pathway: Protective Services – Law Enforcement

#### Get the Facts

There are approximately 800,000 sworn law enforcement officers now serving in the United States. Approximately 13.7 percent of all police and sheriff patrol officers are women.

In 2009, there were 111,000 female police officers nationwide.

#### Workforce Trends

In Utah, employment of law enforcement workers is projected to increase 2.2 percent through the year 2018. A more security-conscious society and concern about drug-related crimes will contribute to the increasing demand for police services.



#### 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
43.0107	Law Enforcement	.50
51.0810	EMS, Introduction	.50
<b>Elective Courses:</b>		
15.0507	Environmental Science	.50
21.0105	Physic with Technology	1.00
32.0199	Student Internship (Critical Workplace Skills)	.50

1.50 credits

1.50 credits

3.00 credits for completion

#### Law Enforcement is:

- > High skill
- > High wage
- > High demand
- > Nontraditional for females

#### Sample Career Occupations

- > Correctional Officer
- > Deputy Sheriff
- > Law Enforcement Teacher
- > Police Detective & Criminal Investigator
- > Police Patrol Officer
- > Police Supervisor Sheriff

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"> <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> For more information on salary projections, labor market demand, and training options, visit <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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			Computer Tech. .50	Computer Technology .50				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## Area of Study: Skilled and Technical Sciences Education

### Pathway: Visual Arts – Commercial Art

#### Get the Facts

Vincent Van Gogh painted four still-life canvases devoted entirely to the potato.

#### Workforce Trends

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

#### 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
50.0401	Design and Visual Communications	.50
50.0402	Commercial and Advertising Art	.50
<b>Elective Courses:</b>		
11.0210	Multimedia I	1.00
11.0215	3D Graphics	.50
11.0216	3D Animation	.50
50.0404	Industrial Design	1.00
50.0406	Basic Film Photography	.50
50.0407	Basic Digital Photography	.50
32.0199	Student Internship (Critical 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



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://www.utahfutures.org">www.utahfutures.org</a>.</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	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				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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: Preparing Students for College and Career!



## 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)	Credit
<i>Choose one of the following “Basic” courses:</i>		
50.0406	Basic Film Photography	.50
50.0407	Basic Digital Photography	.50
50.0408	Advanced Commercial Photography	.50
<b>Elective Courses:</b>		
11.0210	Multimedia	1.00
11.0215	3D Graphics	.50
11.0216	3D Animation	.50
50.0401	Design and Visual Communications	.50
50.0402	Commercial and Advertising Art	.50
32.0199	Student Internship (Critical Workplace Skills)	.50

1.00 credit

1.50 credits

2.50 credits for completion

**Commercial Photography is:**  
> High wage

#### Sample Career Occupations

- > Certificate
- > Associate degree
- > Bachelor's degree
- > Professional degree
- > On-the-job training
- > Apprenticeship
- > Military training

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 <a href="http://www.utahfutures.org">www.utahfutures.org</a> .
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			Computer Tech.	.50	Computer Technology .50				
CTE Intro 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 new common core curriculum. Core curriculum and elective requirements may vary district to district.

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.