

High School to College and Career Pathway: Secondary

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



Area of Study: Information Technology Education

Pathway: Database Development Administration

Get the Facts

Information Technology workers are needed in nearly every industry. The demand for technically skilled workers is growing in almost every industry, not just in those considered high-tech.

Workforce Trends

Computer systems analysts, database administrators, and computer scientists are projected to be among the fastest growing occupations 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
11.0301	Database Development I	1.00
<i>Choose one of the following courses:</i>		
11.0201	Computer Programming I	1.00
11.0301	Database Development II	1.00
Elective Courses:		
11.0101	Information Technology, Introduction	.50
11.0202	Computer Programming II	1.00
32.0199	Student Internship (Critical Workplace Skills)	.50

2.00 credits

1.00 credit

3.00 credits for completion

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

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



Database Development Administration is:

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

Sample Career Occupations

- > Database Administrator
- > Database Architect
- > Database Design Analyst
- > Database Developer
- > Database Engineer
- > Information Scientist
- > Information Technology Education 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"> > 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 www.utahfutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00	Computer Programming 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: Information Technology Education

Pathway: Technical Support

Get the Facts

According to an Arbitron Edison Research study, more than six in ten households with Internet access have a Wi-Fi network at home, enabling the consumption of digital media in any room of the house.

Workforce Trends

Growth will be driven by rapid increases in the computer and data processing services industry. Employment prospects should be favorable, especially for candidates who have either a degree in computer science or computer engineering.



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
11.9920	A+ (Computer Maintenance)	1.00
<i>Choose one of the following courses:</i>		
11.0101	Information Technology, Introduction	.50
11.9940	Linux Fundamentals	1.00
11.0440	Network Fundamentals	.50
11.0450	Security Fundamentals	.50
Elective Courses:		
11.0430	Microsoft Certified Professional (MCP)	1.00
32.0199	Student Internship (Critical Workplace Skills)	.50

2.00 credits

1.00 credit

3.00 credits for completion

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

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

Technical Support is:

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

Sample Career Occupations

- > Computer Operator
- > Help Desk Technician
- > Information Technology Education Teacher
- > Microcomputer Support
- > Network Control Operator
- > Technical Support 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 www.utahfutures.org .
Math * 1.00	Math * 1.00	2.00	Math	3.00	Math * 1.00	Math * 1.00	Math * 1.00	Computer Programming 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 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: Information Technology Education

Pathway: Digital Media (Multimedia)

Get the Facts
Multimedia programs combine art and technology to present text, images and sound in digital form.

Workforce Trends
Multimedia is the field of the future and is rapidly growing. Because our global economy is driven by technology, multimedia has become one of the most in-demand fields around. With 77.3 percent of Americans using the Internet and over 122 million domains registered worldwide, the demand for individuals skilled in interactive media is high.

**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
11.0210	Digital Media I	1.00
<i>Choose one of the following courses:</i>		
11.0211	Digital Media II	1.00
11.0215	3D Graphics	.50
11.0216	3D Animation	.50
Elective Courses:		
11.0101	Information Technology, Introduction	.50
11.0201	Computer Programming I	1.00
11.0230	Web Development I	1.00
52.0254	Business Web Design	.50
52.0264	Business Web Design, Advanced	.50
08.0802	Social Media Marketing	.50
50.0401	Digital and Visual Communications	.50
50.0407	Basic Digital Photography	.50
10.0201	Television Broadcasting 1	.50
32.0199	Student Internship (Critical Workplace Skills)	.50

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

Digital Media is:

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

Sample Career Occupations

- > 3D Animator
- > Information Technology Education Teacher
- > Instructional Designer
- > Multimedia Artist
- > Multimedia Designer
- > Multimedia Developer
- > Multimedia Engineer
- > Product Manager
- > Web Administrator
- > Web Developer

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

2.00 credits

1.00 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 www.utahfutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00	Computer Programming 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: Information Technology Education

Pathway: Web Development and Administration

Get the Facts

The American Institute of Graphic Arts reports that nine out of 10 artists have a college degree, most with a major in graphic design.

Workforce Trends

The World Wide Web has changed the way we communicate and consume information. Millions of Web pages already exist, with more in the works. However, most people don't possess the technical know-how to launch an eye-catching website. That's the reason so many self-employed website designers are taking advantage of plentiful opportunities in this line of work.



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
11.0230	Web Development I	1.00
<i>Choose one of the following courses:</i>		
11.0201	Computer Programming	1.00
11.0210	Digital Media I	1.00
11.0801	Web Development II	1.00
Elective Courses:		
52.0264	Business Web Design, Advanced	.50
11.0101	Information Technology, Introduction	.50
11.0301	Database Development I	1.00
08.0802	Social Media Marketing	.50
32.0199	Student Internship (Critical Workplace Skills)	.50

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

3.00 credits for completion

Web Development and Administration is:

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

Sample Career Occupations

- > Internet Project Manager
- > Information Technology Education Teacher
- > Webmaster
- > Web Administrator
- > Web Developer
- > Web Graphic Designer
- > Web Programmer/Analyst

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. <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 www.utahfutures.org .
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00	Computer Programming 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: Information Technology Education

Pathway: Network Systems

Get the Facts

The term “computer bug” was coined in the 1940s when an insect got into a relay in a primitive electromechanical computer causing computer malfunctions.

Workforce Trends

Growth will be driven by rapid increases in the computer and data processing services industry.

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
Choose 1.5 credits from the following courses:		
11.0101	Information Technology, Introduction	.50
11.0420	Cisco Certified Network Administrator (CCNA)	1.00
11.0430	Microsoft Certified Professional (MCP)	1.00
11.0440	Network Fundamentals	.50
Elective Courses:		
11.9920	A+ (Computer Maintenance)	1.00
11.9940	Linux Fundamentals	1.00
11.0450	Security Fundamentals	.50
32.0199	Student Internship (Critical Workplace Skills)	.50

1.50 credits

1.50 credits

3.00 credits for completion

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



Network Systems is:

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

Sample Career Occupations

- > Information Technology Education Teacher
- > LAN Administrator
- > Network Analyst
- > Network Engineer
- > Telecommunication Manager

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. <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 www.utahfutures.org .
Math * 1.00	Math * 1.00	2.00	Math	3.00	Math * 1.00	Math * 1.00	Math * 1.00	Computer Programming 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: Information Technology Education

Pathway: Programming/Software Development

Get the Facts

A 3D graphics programmer must have a firm grasp of advanced mathematical concepts.

Workforce Trends

Demand for programmers to help organizations keep up with changing technology will continue. Prospects should be best for college graduates with knowledge of various programming languages and tools; those with less formal education or work experience should face keen competition.



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
11.0201	Computer Programming I	1.00
<i>Choose one of the following courses:</i>		
11.0202	Computer Programming II	1.00
11.0301	Database Development I	1.00
Elective Courses:		
11.0101	Information Technology, Introduction	.50
11.0210	Digital Media I	1.00
11.0230	Web Development I	1.00
32.0199	Student Internship (Critical Workplace Skills)	.50

2.00 credits

1.00 credit

3.00 credits for completion

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

Programming/Software Development is:

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

Sample Career Occupations

- > Computer Programmer
- > Computer Systems Analyst
- > Game Programmer
- > Information Technology Education Teacher
- > Software Engineer

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

Middle School		State Requirements		High School Suggested Education Plan				College and Career
7th Grade	8th Grade	Middle School	High School	9th Grade Suggested	10th Grade Suggested	11th Grade Suggested	12th Grade Suggested	Beyond High School
Language Arts 7 1.00	Language Arts 8 1.00	2.00	Language Arts 4.00	Language Arts 9 1.00	Language Arts 10 1.00	Language Arts 11 1.00	Language Arts 12 1.00	<p>There are a number of options for education and training beyond high school, depending on your career goals.</p> <ul style="list-style-type: none"> > 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 www.utahfutures.org.</p>
Math * 1.00	Math * 1.00	2.00	Math 3.00	Math * 1.00	Math * 1.00	Math * 1.00	Computer Programming 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.