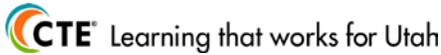


Utah Career and Technical Education Career Pathway

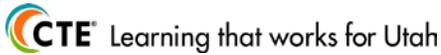
2017-2018 School Year



<p>CTSO Information Career and Technical Student Organizations (CTSO) align with the national Career Clusters® and the Utah CTE Career Pathways.</p> <p>FFA is the CTSO for students in the Agricultural Systems Technology Career Pathway. FFA brings relevance to the classroom through industry-based competitive events and community service.</p> <p>Workforce Trends According to the U.S. Department of Labor, the growing interest in worldwide standardization of agricultural equipment should result in increased employment of agricultural engineers. Job opportunities should result from the increasing demand for agricultural products, the continued efforts for more efficient agricultural production, and the increasing emphasis on the conservation of resources.</p>	<h3 style="margin: 0;">Career Cluster: Agriculture, Food & Natural Resources</h3> <h4 style="margin: 0;">Career Pathway: Agricultural Systems Technology</h4> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <thead> <tr style="background-color: #00a6c9; color: white;"> <th style="width: 15%;">CORE CODE</th> <th style="width: 55%;">FOUNDATION COURSES (required)</th> <th style="width: 15%;">CREDITS</th> <th style="width: 15%;"></th> </tr> </thead> <tbody> <tr> <td>30.01.00.00.030</td> <td>Agricultural Systems Technology 1</td> <td style="text-align: center;">1.00</td> <td rowspan="2" style="text-align: center; vertical-align: middle;">2.00 credits</td> </tr> <tr> <td>30.01.00.00.040</td> <td>Agricultural Systems Technology 2</td> <td style="text-align: center;">1.00</td> </tr> <tr style="background-color: #00a6c9; 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<p>Student Testimonial “The CTE classes I took in high school, such as agricultural systems and technology, animal science, and floriculture, have given me the basic skills, knowledge and abilities to allow me to obtain employment in any of those fields.” Colton Zilles</p>	<h3 style="margin: 0;">HIGH SCHOOL TO POSTSECONDARY EDUCATION AND TRAINING</h3> <p style="margin: 0;">There are a number of options for education and training beyond high school, depending on your career goals.</p> <table border="1" style="width: 100%; border-collapse: collapse; margin: 10px 0;"> <tr> <td style="width: 15%; background-color: #00a6c9; color: white; text-align: center; padding: 5px;">12th Grade</td> <td style="width: 15%; background-color: #ff7f0e; color: white; text-align: center; padding: 5px;">1-Year Certificate</td> <td style="width: 15%; background-color: #2ca02c; color: white; text-align: center; padding: 5px;">2-Year Associate or Technical Degree</td> <td style="width: 15%; background-color: #ffc107; color: white; text-align: center; padding: 5px;">4-Year Bachelor's Degree</td> <td style="width: 15%; background-color: #6c757d; color: white; text-align: center; padding: 5px;">More Graduate or Prof. Degree</td> </tr> </table> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%; padding: 5px;"> <p>Certificates are awarded upon the successful completion of a brief course of study, usually one year or less. Upon completion of a course of study, a certificate does not require any further action to retain.</p> <p>In high school a variety of certificates can be earned.</p> </div> <div style="width: 45%; padding: 5px;"> <p>An academic degree is an award for the completion of a program or course of study over multiple years at postsecondary education institutions.</p> <p>In 2015-2016, 73 percent of secondary students who concentrated in a CTE Career Pathway placed in postsecondary education, advanced training, military service or employment (October 1-December 31).</p> </div> </div>	12th Grade	1-Year Certificate	2-Year Associate or Technical Degree	4-Year Bachelor's Degree	More Graduate or Prof. Degree	<p>Utah Business and Industry Facts Utah agriculturists produce crops and livestock worth over \$1.8 billion annually.</p> <p>Students enrolled in high school agricultural courses are looking to join a \$22 billion industry in Utah and a \$992 billion industry nationwide. (Utah Department of Agriculture and Food)</p>																																																															
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Utah Career and Technical Education Career Pathway

2017-2018 School Year



CTSO Information
 Career and Technical Student Organizations (CTSO) align with the national Career Clusters® and the Utah CTE Career Pathways.
 FFA is the CTSO for students in the Animal Systems Career Pathway. FFA brings relevance to the classroom through industry-based competitive events and community service.

Workforce Trends
 Twenty-one million people (or 18.5 percent of the American workforce) are employed in the agricultural industry. Farmers and ranchers provide food and habitat for 75 percent of the nation's wildlife. One-fourth of the world's beef and one-fifth of the world's grain, milk, and eggs are produced in the United States.

Career Cluster: Agriculture, Food & Natural Resources

Career Pathway: Animal Systems

CORE CODE	FOUNDATION COURSES (required)	CREDITS	
30.02.00.00.040	Animal Science 1	1.00	2.00 credits
<i>Choose one of the following courses:</i>			
30.02.00.00.001	Animal Science 2	1.00	
30.02.00.00.070	Equine Science	1.00	
30.01.00.00.005	Small and Companion Animal Science	1.00	
30.02.00.00.090	Veterinary Assistant 1	1.00	
ELECTIVE COURSES			
30.01.00.00.116	Aquaculture, Introduction	1.00	1.00 credit
30.01.00.00.115	Aquaculture, Advanced	1.00	
30.02.00.00.050	Biology-Agricultural Science	1.00	
32.02.00.00.110	Business Communication 1	.50	
32.02.00.00.111	Business Communication 2	.50	
32.02.00.00.140	Business Management	.50	
30.02.00.00.072	Equine Science A	.50	
30.02.00.00.074	Equine Science B	.50	
37.01.00.00.150	Leadership Management Principles	1.00	
30.02.00.00.095	Veterinary Assistant 2	1.00	
30.01.00.00.200	Summer Agriculture Program	.25	
	Supervised Agriculture Experience Program (capstone experience)		
41.00.00.00.030	Workplace Skills	.50	
3.00 credits for completion			

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

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

Animal Systems is:
 > High skill
 > High wage

Sample Occupations Requiring:
High School Diploma
 > Livestock Handler
 > Swine Farm Worker
 > Veterinary Assistant and Laboratory Animal Caretaker

Certificate
 > Artificial Inseminator
 > Livestock Auctioneer
 > Shipping Coordinator

Assoc. or Technical Degree
 > Herdsman
 > Livestock Buyer
 > Veterinary Assistant/Technologist and Technician

Baccalaureate Degree
 > Animal Nutrition Specialist
 > Career and Technical Education Teacher
 > Farm/Ranch Manager

Graduate or Prof. Degree
 > Animal Scientists
 > Extension Specialist
 > Veterinarian

Student Testimonial
 "I took many CTE classes in high school that were beneficial in preparation for my college education to become a veterinary technician. Biology, chemistry, animal science, and veterinary assisting helped me understand cells and how a body functions. I have a passion for animals and their well-being and want to pursue a career in agriculture."
 Karlie Ault

HIGH SCHOOL TO POSTSECONDARY EDUCATION AND TRAINING

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

12th Grade	1-Year Certificate	2-Year Associate or Technical Degree	4-Year Bachelor's Degree	More Graduate or Prof. Degree
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Utah Business and Industry Facts
 Agriculture is a vital industry to Utah's economy. There are 18,100 farms in the state, totaling approximately 11 million acres, where Utah agriculturists produce crops and livestock worth \$1.8 billion annually.
 (Utah Department of Agriculture and Food)

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

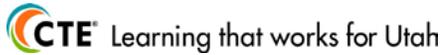
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In 2015-2016, the graduation rate for students who concentrated in a CTE Career Pathway was 96.6 percent, compared to Utah's statewide graduation rate of 85 percent.

Utah Career and Technical Education Career Pathway

2017-2018 School Year



CTSO Information
 Career and Technical Student Organizations (CTSO) align with the national Career Clusters® and the Utah CTE Career Pathways.
 FFA is the CTSO for students in the Food Production and Processing Systems Career Pathway. FFA brings relevance to the classroom through industry-based competitive events and community service.

Workforce Trends
 According to the U.S. Department of Labor, 1 in 7 Americans work in agriculture-related jobs.
 According to the Utah Farm Bureau Federation, more than 100,000 people are employed by agriculture and agribusiness in the state of Utah.

Career Cluster: Agriculture, Food & Natural Resources

Career Pathway: Food Production & Processing Systems

CORE CODE	FOUNDATION COURSES (required)	CREDITS	
30.01.00.00.050	Agricultural Science 1	1.00	2.00 credits
30.01.00.00.060	Agricultural Science 2	1.00	
<i>Or choose the following courses:</i>			
30.02.00.00.040	Animal Science 1	1.00	2.00 credits
30.02.00.00.080	Plant and Soil Science 1	1.00	
ELECTIVE COURSES			
30.01.00.00.070	Agricultural Science 3	1.00	1.00 credit
30.02.00.00.001	Animal Science 2	1.00	
30.01.00.00.116	Aquaculture, Introduction	1.00	
30.01.00.00.115	Aquaculture, Advanced	1.00	
30.02.00.00.050	Biology-Agricultural Science	1.00	
32.02.00.00.140	Business Management	.50	
32.02.00.00.110	Business Communication 1	.50	
32.02.00.00.111	Business Communication 2	.50	
30.01.00.00.140	Farm and Ranch Management	1.00	
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30.01.00.00.200	Summer Agriculture Program	.25	
	Supervised Agriculture Experience Program (capstone experience)		
41.00.00.00.030	Workplace Skills	.50	
3.00 credits for completion			

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

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Food Production & Processing Systems is:

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

Sample Occupations Requiring:

High School Diploma

- > Buyer and Purchasing Agent, Farm Products
- > Farm/Ranch Worker/Manager
- > Pesticide Handler, Sprayer, and Applicator

Certificate

- > Crop Scout
- > Pesticide Handler/Applicator
- > Storage and Hygiene Coord.

Assoc. or Technical Degree

- > Agricultural Engineer Tech.
- > Sales Representative
- > Slaughter/Processor

Baccalaureate Degree

- > Agricultural Inspectors
- > Career and Technical Education Teacher
- > Farm/Ranch Manager

Graduate or Prof. Degree

- > Biotechnology Research
- > Extension Specialist
- > Research Scientist

Student Testimonial

"My CTE classes and my leadership experience in 4-H and FFA have laid a strong foundation on which I can build upon. I have learned crucial values, including hard work, dedication, and responsibility. I plan to go college to complete a teaching degree. I like the idea of 'paying it forward.' I have had a wonderful education experience and I hope to provide that for the future students I will teach."

Kaitlin Hallam

HIGH SCHOOL TO POSTSECONDARY EDUCATION AND TRAINING

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Utah Business and Industry Facts

In Utah, there are 18,100 farms with 11,000 acres in production. The poultry industry is huge with 7.5 million birds, layers, pullets, and turkeys.

Utah is also home to 777,000 head of cattle and 732,000 head of hogs.

Utah Agriculture contributes more than 15 percent to the state's economy.

CTE Skill Certificates

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

UtahFutures: College and Career Planning

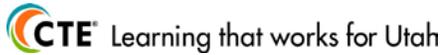
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Utah Career and Technical Education Career Pathway

2017-2018 School Year



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

FCCLA is the CTSO for students in the Food Science, Dietetics and Nutrition Career Pathway. FCCLA provides students with opportunities to attain the knowledge, skills, and leadership characteristics necessary to succeed in life and careers.

Workforce Trends
 Nationwide, dietitians and nutritionists held 66,700 jobs in 2014. Employment of dietitians and nutritionists is projected to increase 16.4 percent through the year 2024.

In Utah, a dietitian and a nutritionist must be licensed.

Career Cluster: Agriculture, Food & Natural Resources

Career Pathway: Food Science, Dietetics & Nutrition

CORE CODE	FOUNDATION COURSES (required)	CREDITS	
34.01.00.00.180	Food Science	.50	1.00 credit
34.01.00.00.185	Foundations of Nutrition *	.50	
ELECTIVE COURSES			
34.01.00.00.150	Food and Nutrition 1	.50	2.00 credits
34.01.00.00.160	Food and Nutrition 2	.50	
36.01.00.00.090	Health Science, Introduction	.50	
34.01.00.00.197	Human Development	1.00	
36.01.00.00.110	Medical Anatomy and Physiology	1.00	
41.00.00.00.030	Workplace Skills	.50	
3.00 credits for completion			

* Course can be taken up to 1.00 credit.

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

Food Science, Dietetics & Nutrition is:
 > High skill

Sample Occupations Requiring:
High School Diploma
 > Nutrition and Wellness Coach
 > Food Product Technician
 > Packaging Manager Product Grader

Certificate
 > Food Protections Manager
 > Food Inspector Assistant
 > Food Sanitation Coordinator

Assoc. or Technical Degree
 > Research and Development Technician

Baccalaureate Degree
 > Career and Technical Education Teacher
 > Dietitian/Nutritionist
 > Food Scientist
 > Nutrition Education Specialist
 > Research Technician

Graduate or Prof. Degree
 > Food Microbiologist
 > Food Nutritionist
 > Food/Research Scientist

Student Testimonial
 "Participating in a CTE Internship helped me to experience the reality of being a dietitian. I participated in a number of activities, including recipe construction, consultations, and food preparation. I learned of the mandatory jobs and skills one must have, the schooling and preparation required."
 Melissa DeFriez

HIGH SCHOOL TO POSTSECONDARY EDUCATION AND TRAINING

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

12th Grade	1-Year Certificate	2-Year Associate or Technical Degree	4-Year Bachelor's Degree	More Graduate or Prof. Degree
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Utah Business and Industry Facts
 From hospitals to care facilities to grocery stores to schools, businesses and organizations in Utah utilize the expertise of dietitians and nutritionists.

According to the Utah Department of Workforce Services, there are more than 400 dietitians and nutritionists in the state. By the year 2020, an additional 100 nutrition professionals are projected to join the workforce.

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

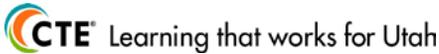
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Utah Career and Technical Education Career Pathway

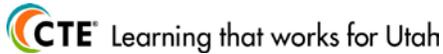
2017-2018 School Year



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FFA brings relevance to the classroom through industry-based competitive events and community service.</p> <p>Workforce Trends With the multitude of natural resources in Utah there are a vast number of career opportunities within eight federal and state divisions.</p>	<h3 style="margin: 0;">Career Cluster: Agriculture, Food & Natural Resources</h3> <h4 style="margin: 0;">Career Pathway: Natural Resource Systems</h4> <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr style="background-color: #00a651; color: white;"> <th style="width: 15%;">CORE CODE</th> <th style="width: 55%;">FOUNDATION COURSES (required)</th> <th style="width: 10%;">CREDITS</th> <th style="width: 20%;"></th> </tr> </thead> <tbody> <tr> <td></td> <td colspan="2" style="text-align: center;"><i>Choose two of the following courses:</i></td> <td></td> </tr> <tr> <td>30.01.00.00.116</td> <td>Aquaculture, Introduction</td> <td style="text-align: center;">1.00</td> <td rowspan="3" style="text-align: center; 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color: #00a651;"><u>High School Diploma</u></p> <ul style="list-style-type: none"> > Forest/Conservation Worker > Logger > Truck Driver <p style="font-size: x-small; color: #00a651;"><u>Certificate</u></p> <ul style="list-style-type: none"> > Firefighter > Heavy Equipment Operator > Pesticide Handler/Applicator <p style="font-size: x-small; color: #00a651;"><u>Assoc. or Technical Degree</u></p> <ul style="list-style-type: none"> > Arborist > Fisheries Technician > Forestry Technician <p style="font-size: x-small; color: #00a651;"><u>Baccalaureate Degree</u></p> <ul style="list-style-type: none"> > Career and Technical Education Teacher > Conservation Officer/Scientist > Wildlife Biologist <p style="font-size: x-small; color: #00a651;"><u>Graduate or Prof. Degree</u></p> <ul style="list-style-type: none"> > Extension specialist > Forester > Marine Biologist
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Utah Career and Technical Education Career Pathway

2017-2018 School Year



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

FFA is the CTSO for students in the Plant Systems Career Pathway. FFA brings relevance to the classroom through industry-based competitive events and community service.

Workforce Trends
 According to the U.S. Department of Labor, employment of conservation scientists and foresters is projected to grow 7 percent through the year 2024.

Nationwide, employment of landscape architects is projected to grow 5 percent through the year 2024.

Career Cluster: Agriculture, Food & Natural Resources

Career Pathway: Plant Systems

CORE CODE	FOUNDATION COURSES (required)	CREDITS	
<i>Choose two credits from the following courses:</i>			
30.01.00.00.152	Floriculture	.50	2.00 credits
30.01.00.00.150	Floriculture and Greenhouse Management	1.00	
30.01.00.00.154	Greenhouse Management	.50	
30.01.00.00.160	Landscape Management	.50	
30.01.00.00.165	Nursery Operation	.50	
30.02.00.00.080	Plant and Soil Science 1	1.00	
30.02.00.00.010	Plant and Soil Science 2	1.00	
ELECTIVE COURSES			
30.01.00.00.050	Agricultural Science 1	1.00	1.00 credit
30.02.00.00.050	Biology-Agricultural Science	1.00	
32.02.00.00.110	Business Communication 1	.50	
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3.00 credits for completion			

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

Plant Systems is:
 > High demand

Sample Occupations Requiring:
High School Diploma
 > Florist
 > Greenhouse Worker
 > Tree Trimmers and Pruners

Certificate
 > Crop Scout
 > Irrigation Specialist
 > Pesticide Handler/Applicator

Assoc. or Technical Degree
 > Arborist
 > Landscape Technician
 > Turf Manager

Baccalaureate Degree
 > Career and Technical Education Teacher
 > Crop Advisor
 > Landscape Designer/Architect

Graduate or Prof. Degree
 > Agronomist
 > Extension Specialist
 > Microbiologist

Student Testimonial

"I took my first agriculture class, which everyone assumes is strictly about farm animals, and it introduced me to plant biology. The classes took place mostly in the school greenhouse, where I learned to grow plants and flowers from seeds. This is where I found my passion."
 Madyson Smith

HIGH SCHOOL TO POSTSECONDARY EDUCATION AND TRAINING

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

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Utah Business and Industry Facts

In Utah, the value of crops including nursery and greenhouse crops is \$575 million. Hay and forage has the highest values of sales at \$297 million.

CTE Skill Certificates

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

UtahFutures: College and Career Planning

Visit UtahFutures.org for salary projections, labor market demand, and training options.

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