

# STRANDS AND STANDARDS

## Sustainable Urban Agriculture



### Course Description

This course provides a broad overview of food systems as they relate to ethical, economic, and environmental issues. The complex challenges involved with feeding the world's population are discussed through topics such as sustainable agriculture, genetic engineering, organic crop production, and food security. Popular media, science-based research, and hands-on experiences will be used to engage students. Utah agriculture and the impact on our local communities will be emphasized.

<b>Intended Grade Level</b>	9-12
Units of Credit	1.0
Core Code	30.10.00.00.090
Concurrent Enrollment Core Code	N/A
Prerequisite	None
Skill Certification Test Number	135
Test Weight	1.0
<b>License Area of Concentration</b>	CTE and/or Secondary Education 6-12
<b>Required Endorsement(s)</b>	
Endorsement 1	Agriculture (CTE/General)
Endorsement 2	Animal Science & Technology
Endorsement 3	Plant and Soil Science & Technology
Endorsement 4	Agriculture Science (Career and Technical)

## STRAND 1

Student will participate in personal and leadership development activities through the FFA.

### Standard 1

Student will use communication skills to effectively communicate with others.

- Understand when it is appropriate to listen and to speak.
- Understand and follow verbal and written instructions for classroom and laboratory activities.
- Will practice communication skills through public speaking using one or more of the following activities: memorized speech, prepared speech, extemporaneous speech, parliamentary practice, group presentation, or serving in a leadership capacity.

### Standard 2

Student will effectively use teamwork to respectfully work with others.

- Identify and understand different roles in working with a team.
- Lead a group discussion or serve in a leadership capacity.

### Standard 3

Student will use critical thinking and problem-solving skills.

- Analyze the cause of the problem.
- Develop a solution to address the problem.
- Implement the plan.
- Evaluate the effectiveness of the plan.

### Standard 4

Student will be dependable, reliable, steady, trustworthy, and consistent in performance and behavior.

- Set and meet goals on attendance and punctuality.
- Prioritize, plan, and manage work to complete assignments and projects on time.

### Standard 5

Student will be accountable for results.

- Use an achievement chart for activities and behaviors in class that encourages a personal evaluation of classroom performance.
- Use reflection to describe what was learned, what went well, what could have been improved, and what are the implications to the learning process.
- Track and communicate progress toward completion of assignments and projects.

### Standard 6

Be familiar with the legal requirements and expectations of the course.

- Be familiar with the course disclosure statement and all requirements for successful completion of the course.
- Demonstrate workplace ethics, e.g. fair, honest, disciplined.

## Performance Skills

- Student will practice communication skills through public speaking using one or more of the following activities: memorized speech, prepared speech, extemporaneous speech, parliamentary practice, group presentation, or serving in a leadership capacity.

## STRAND 2

Student will participate in work-based learning activities through the Supervised Agricultural Experience (SAE) Program.

### Standard 1

Student will demonstrate employability skills.

- Use a career search network to find career choices.
- Identify appropriate CTE Pathway for selected career choice.
- Prepare for entry into the work force by completing one of the following: list of required skills needed for a career choice, a resume including a list of demonstrated skills, a cover letter or letter of application, a job application, or participate in an actual or simulated job interview.

### Standard 2

Student will participate in a work-based learning experience outside the classroom.

- Student will plan and implement a Supervised Agricultural Experience Program:
  - Foundational SAE: Career exploration and planning, employability skills for college and career readiness, personal financial management and planning, workplace safety, and agricultural literacy.
  - Immersion SAE: Ownership/entrepreneurship, placement/internship, research, school-based enterprise, and/or service-learning experiences.

### Standard 3

Student will develop a job portfolio specific to their selected SAE/WBL experience.

- Student will keep a personal record/journal/log of their SAE/WBL experience; including pictures, financial records or log of their hours, skills learned, goals, reflection, etc.

## Performance Skills

- Student will keep a personal record/journal/log of their SAE/WBL experience; including pictures, financial records or log of their hours, skills learned, goals, reflection, etc.

## STRAND 3

Student will understand the concept of sustainability in agriculture.

### Standard 1

Student will understand the importance of sustainable agriculture.

- Student will be able to define the term sustainable agriculture.
- Student will identify the three components of sustainable agriculture.
- Student will be able to discuss the impacts of the three components of sustainable agriculture.
- Student will be able to distinguish between the goals and the practices used to achieve sustainable agriculture and food systems.
- Student will be able to determine if organic farming practices meet the definition of sustainable agriculture.
- Student will demonstrate an awareness of economic, environmental, and community impacts of agriculture.

### Standard 2

Student will identify agronomic practices that support sustainability.

- Student will identify ways that agroecosystems function to support sustainable agriculture.
- Student will identify the parts of a local food system.

- Student will identify and explain practices used in sustainable agriculture, such as organic production, crop rotation, rotational grazing, value-added marketing, and natural habitat restoration.

### Standard 3

Student will be able to analyze and evaluate sustainable agriculture enterprises.

- Student will analyze real-life (preferably local) examples of sustainability in working farms, food systems, and natural resource enterprises.
- Student will evaluate the sustainability of an enterprise based on its contributions to economic, environmental, and community benefits.

### Performance Skills

- Student will evaluate the sustainability of an enterprise based on its contributions to economic, environmental, and community benefits.

## STRAND 4

**Student will understand the concept of sustainable field crop production.**

### Standard 1

Student will be able to identify field crops that are a part of the food system.

- Student will be able to identify the principal field crops produced in Utah and how they contribute to the food system.
- Student will be able to discuss how the field crops grown in Utah fit into the world food system.
- Student will examine the complexity of the relationship between crop production and food distribution.

### Standard 2

Student will learn and apply field crop production practices in an agroecosystem.

- Students will learn about key agroecological management practices, including soil and fertility management, crop rotation, and pest management.
- Students will apply ecological analysis to cropping systems.

### Standard 3

Student will analyze the economics of field crop production.

- Student will identify how sustainable practices can affect farm profitability.
- Student will examine how government programs can affect farm profitability.
- Student will analyze the hidden costs of cheap food, including:
  - Environmental costs.
  - Farm business failures.
  - Increase in obesity and persistence of hunger in US and worldwide.

### Performance Skills

- Student will analyze the hidden costs of cheap food, including:
  - Environmental costs.
  - Farm business failures.
  - Increase in obesity and persistence of hunger in US and worldwide.

## STRAND 5

**Student will understand the concept of sustainable animal production.**

### Standard 1

Student will be able to identify the animals that are a part of the food system.

- Student will be able to identify the animal production available in Utah and how they contribute to the food system.
- Student will be able to discuss how the animal production in Utah fits into the world food system.
- Student will examine the complexity of the relationship between animal production and food distribution.
- Student will examine the role of animal products in nutrition.
- Student will critique the pros and cons of animal agriculture.

### Standard 2

Student will be able to discuss the economics of animal production.

- Student will describe how sustainable animal production practices can affect farm profitability.
- Student will consider the effects of government agriculture programs on the profitability of sustainable farms.
- Student will compare/contrast alternative marketing strategies in animal production.
- Student will examine the costs and benefits of different animal production systems at the community and regional levels.

### Performance Skills

- Student will examine the costs and benefits of different animal production systems at the community and regional levels.

## STRAND 6

**Student will understand the concept of sustainable production in horticulture.**

### Standard 1

Student will be able to identify the fruits and vegetables that are a part of the food system.

- Student will identify the fruit and vegetable production available in Utah and how they contribute to the food system.
- Student will be able to discuss how the fruit and vegetable production in Utah fits into the world food system.
- Student will examine the complexity of the relationship between fruit and vegetable production and food distribution.
- Student will examine the role of fruits and vegetables in nutrition.
- Student will analyze the positive and negative consequences of the modern global food system.

### Standard 2

Student will learn and apply fruit and vegetable production practices in an agroecosystem.

- Student will apply ecological analysis to vegetable and fruit production systems.
- Student will discuss key agroecological management practices, including soil and fertility management, crop rotation, and pest management.
- Student will examine the complexity and variety of the agroecology of horticultural crops.

## Performance Skills

- Student will examine the role of fruits and vegetables in nutrition.

## STRAND 7

**Student will understand the concept of sustainable production using organic farming practices.**

### Standard 1

Student will be able to define organic farming and identify current practices.

- Student will identify the components of organic agriculture as defined by the USDA.
- Student will discuss the history of the organic agriculture movement and market.
- Student will examine the politics of organic agriculture.

### Standard 2

Student will learn and apply organic farming practices in an agroecosystem.

- Student will apply ecological analysis to vegetable and fruit production systems.
- Student will identify key organic practices for both crop and animal production.
- Student will explore sources of technical information about organic agriculture.

### Standard 3

Student will be able to discuss the economics of organic farming practices.

- Student will examine the impacts of organic agriculture on-farm profitability.
- Student will analyze government programs and their effect on organic agriculture.
- Student will discuss the current state of the organic food market.
- Student will critique the pros and cons of organic farming practices.

## Performance Skills

- Student will critique the pros and cons of organic farming practices.

## STRAND 8

**Student will understand the concept of Genetically Engineered (GE) crops.**

### Standard 1

Student will be able to define Genetically Engineered and identify current practices in agriculture.

- Student will compare the two concepts, Genetically Modified Organism (GMO) and Genetically Engineered (GE).
- Student will identify current uses of GE crops in agriculture and the food system.
- Student will identify the benefits that GE crops provide to agriculture and the food system.
- Student will identify the costs and risks that are associated with GE crops in agriculture and the food system.
- Student will evaluate current claims regarding GE crops and their future costs and benefits to agriculture and the food system.

## Performance Skills

- Student will evaluate current claims regarding GE crops and their future costs and benefits to agriculture and the food system.

## Skill Certification Test Points by Strand

Test Name	Test #	Number of Test Points by Strand												Total Points	Total Questions
		1	2	3	4	5	6	7	8	9	10	11	12		