

# STRANDS AND STANDARDS

## AGRICULTURAL MACHINERY TECHNOLOGY



### Course Description

This capstone course is a part of a pathway sequence of courses in agricultural mechanics. This course prepares individuals for employment in careers that repair, maintain, or restore agricultural machinery and equipment. Because of the rigorous nature of this hands-on course it is recommended that enrollment not exceed 15 students.

<b>Intended Grade Level</b>	11-12
Units of Credit	1.0
Core Code	30.01.00.00.020
Concurrent Enrollment Core Code	N/A
Prerequisite	Agricultural Mechanics & Technology 1 Agricultural Mechanics & Technology 2
Skill Certification Test Number	114
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	Agriculture Mechanization
Endorsement 3	N/A

## STRAND 1

**FFA/Personal and Leadership Development; students will understand the importance of workplace skills and will implement and practice these skills in the classroom, laboratory and work-based experiences.**

### Standard 1

Use communication skills to effectively interact with others.

- Understand when it is appropriate to listen and to speak.
- Understand and follow verbal and written instructions for classroom and laboratory activities.
- Reflect on assigned work and then communicate progress relative to completion.

### Standard 2

Effectively use teamwork to respectfully work with others.

- Work with a team to complete assignments and projects.

### Standard 3

Use the critical thinking and problem-solving skills; reason, analyze, reflect, evaluate and interpret information to make judgements and decisions to solve problems.

- Use generally accepted industry standards to analyze, evaluate, troubleshoot and diagnose the challenges associated with a specific repair, maintenance, or restoration project.

### Standard 4

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

Be accountable for results.

- Assure work quality by using industry standards for process, procedure and evaluation.
- File a weekly/bi-weekly written report on 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 requirement for successful completion of the course.
- Demonstrate workplace ethics.

### Standard 7

Demonstrate employment skills.

- Build a job search network and find job leads.
- Write a resume and create a job portfolio.
- Write a letter of application.
- Complete a job application.
- Participate in an actual or simulated job interview.

### Performance Skills

- Set and meet goals on attendance and punctuality.
- File a weekly/bi-weekly written report on progress toward completion of assignments and projects.
- Write a resume and create a job portfolio.

## STRAND 2

Student will participate in a Supervised Agricultural Experience (SAE).

### Standard 1

Students will participate in an entrepreneurial, paid employment, research or exploratory focused work-based experience outside the classroom.

### Standard 2

Students are required to keep a personal record/journal/log of their work-based experience.

### Performance Skills

- Keep a personal record/journal/log of their work-based experience.

## STRAND 3

Students will understand agricultural machinery/equipment safety.

### Standard 1

Identification of and safety pertaining to Shear and Cutting Points.

### Standard 2

Identification of and safety pertaining to Pinch Points.

### Standard 3

Identification of and safety pertaining to Wrap Points.

### Standard 4

Identification of and safety pertaining to Free-Wheeling Points.

### Standard 5

Identification of and safety pertaining to Pull-in Points.

### Standard 6

Identify the appropriate use of the ROPS (Roll-Over Protective Structure) on agricultural machinery.

### Standard 7

Discuss the importance of terrain in the operation of agricultural machinery.

### Performance Skills

- Identify shear and cutting points, pinch points, wrap points, free-wheeling points, and pull-in points on all types of agricultural machinery.

## STRAND 4

Students will work to create a culture of safety.

### Standard 1

Complete a student safety pledge (disclosure statement).

### Standard 2

Respond to first aid requirements as allowed by school policy.

- Locate first-aid kits and investigate their contents and discuss the use of the items as allowed by school

policy.

- Discuss appropriate safety responses in an accident or emergency.
- Demonstrate the use of simple first aid in an accident with an injury.

### **Standard 3**

Follow safe practices.

- Use appropriate PPE (Personal Protective Equipment) at all times.
- Eliminate workplace practices that distract attention and create an unsafe environment; e.g. cell phones and other electronic devices.

### **Standard 4**

Perform housekeeping duties.

- Keep personal workspace clean and work with others to clean and organize community space.

### **Standard 5**

Successfully complete safety tests or demonstrations on equipment use and equipment safety.

- Student will demonstrate an understanding of safe practices with 100% accuracy.

### **Performance Skills**

- Use appropriate PPE (Personal Protective Equipment) at all times.
- Keep personal workspace clean and work with others to clean and organize community space.
- Demonstrate an understanding of safe practices with 100% accuracy.

## **STRAND 5**

**Students will be able to program and operate autonomous systems and technology.**

### **Standard 1**

Students will be able to differentiate between different types and functions of autonomous systems.

### **Standard 2**

Students will be able to apply autonomous systems in agricultural applications.

### **Standard 3**

Students will be able to operate autonomous systems in agricultural applications.

### **Performance Skills**

- Program and operate autonomous systems in agricultural application.

## **STRAND 6**

**Students will develop a plan to repair/maintain/restore agricultural machinery/equipment.**

### **Standard 1**

Select agricultural machinery/equipment for repair/maintenance/restoration.

- Analyze the process to make sure that it is cost affective to repair/maintain or restore the project.

### **Standard 2**

Interpret and analyze manuals, schematics or other resources required for the repair/maintenance/restoration of project.

**Standard 3**

Develop a written estimate including itemization of parts, labor, time, and total cost.

**Standard 4**

Prepare a parts list, parts order, and secure the parts.

**Standard 5**

Develop a production schedule.

**Performance Skills**

- Develop a written estimate including itemization of parts, labor, time, and total cost.
- Develop a production schedule.

**STRAND 7**

**Students will repair/maintain/restore agricultural machinery/equipment.**

**Standard 1**

Demonstrate proper equipment and tool setup and usage.

**Standard 2**

Diagnose, troubleshoot, and disassemble as needed.

**Standard 3**

Clean and evaluate parts for manufacturer specifications.

**Standard 4**

Reflect on progress, evaluate next steps, and make adjustments relative to completion of project.

**Standard 5**

Successfully complete the project.

**Performance Skills**

- Successfully complete the repair/maintenance/restoration of agricultural machinery/equipment.

**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			