Nevada CTE

Agricultural Mechanics Technology: High school

DEMONSTRATE GENERAL SHOP SAFETY PROCEDURES 1.0

PS1.1 UNDERSTAND PERSONAL AND GROUP SAFETY 1.1

- 1.1.1 Demonstrate personal safety precautions in an agricultural mechanics environment 1.1.1
- 1.1.2 Describe group safety precautions in an agricultural mechanics environment, including lockout/tagout procedures 1.1.2
- 1.1.3 Identify safe and unsafe working conditions in the agricultural mechanics environment 1.13
- 1.1.4 Distinguish between the different types of fires 1.14
- 1.1.5 Classify the three components of the fire triangle 1.1.5
- 1.1.6 Describe the different types of fire extinguishers 1.1.6
- 1.1.7 Demonstrate appropriate fire extinguisher use 1.1.7
- 1.1.8 Identify general shop housekeeping procedures 1.1.8

DEMONSTRATE SAFE AND PROPER WELDING PROCEDURES 2.0

PS2.1 : DEMONSTRATE SAFE AND PROPER TECHNIQUES IN OXY/FUEL CUTTING (OFC) 2.1

- 2.1.1 Demonstrate proper safety practices while operating all welding and cutting equipment 2.1.1
- 2.1.2 Select appropriate welding and cutting tips for specific applications 2.1.2
- 2.1.3 Properly assemble oxy/fuel apparatus 2.1.3
- 2.1.4 Properly diagnose equipment failure 2.1.4
- 2.1.5 Properly cut mild steel to specification 2.1.5

PS 2.2 : DEMONSTRATE SAFE AND PROPER TECHNIQUES IN SHIELDED METAL ARC WELDING (SMAW) 2.2

- 2.2.1 Demonstrate proper safety practices while operating SMAW equipment 2.2.1
- 2.2.2 Select appropriate electrodes for specific applications 2.2.2
- 2.2.3 Properly adjust SMAW apparatus 2.2.3
- 2.2.4 Properly diagnose equipment failure 2.2.4

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2.2.5 Produce three AWS standard welds in the flat and horizontal position 2.2.5

2.2.6 Identify welding electrodes using AWS electrode classification system 2.2.6

2.2.7 Determine the correct shade of lens used for a given application and type of welding process 2.2.7

PS2.3 : DEMONSTRATE SAFE AND PROPER TECHNIQUES IN GAS METAL ARC WELDING (GMAW) 2.3

2.3.1 Demonstrate proper safety practices while operating GMAW equipment 2.3.1

2.3.2 Select appropriate electrodes, contact tips, gas nozzles and diffusers, and shielding gas for specific applications 2.3.2

2.3.3 Properly adjust GMAW apparatus for specific application 2.3.3

2.3.4 Properly diagnose equipment failure 2.3.4

2.3.5 Produce three AWS standard welds in the flat and horizontal position 2.3.5

PS2.4 : DEMONSTRATE SAFE AND PROPER TECHNIQUES IN GAS TUNGSTEN ARC WELDING (GTAW) 2.4

2.4.1 Demonstrate proper safety practices while operating GTAW equipment 2.4.1

2.4.2 Select appropriate consumables and shielding gas for specific applications 2.4.2

2.4.3 Properly adjust GTAW apparatus for specific application 2.4.3

2.4.4 2.4.4 Properly diagnose equipment failure 2.4.4

2.4.5 Produce three AWS standard welds in the flat and horizontal position on ferrous metals 2.4.5

PS2.5 : DEMONSTRATE SAFE AND PROPER TECHNIQUES IN PLASMA CUTTING (PAC) PROCEDURES 2.5

2.5.1 Demonstrate proper safety practices while operating plasma cutting equipment 2.5.1

2.5.2 Select appropriate consumables for specific applications 2.5.2

2.5.3 Properly assemble plasma cutting apparatus 2.5.3

2.5.4 Properly diagnose equipment failure 2.5.4

2.5.5 Properly cut ferrous metals 2.5.5

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PS3.1 : UNDERSTAND PRINCIPLES AND THEORIES OF ELECTRICITY 3.1

3.1.1 Describe proper safety practices applicable to agricultural electrification 3.1.1

3.1.2 Describe the principles of generation, transmission and distribution of electricity 3.1.2

3.1.3 Describe voltage, current, and resistance 3.1.3

3.1.4 Differentiate between direct and alternating current 3.1.4

PS 3.2 : APPLY THE PRINCIPLES AND THEORIES OF ELECTRICAL CIRCUITS 3.2

3.2.1 Determine the proper conductor for specific applications 3.2.1

3.2.2 Explain the function of circuit breakers and overcurrent protection devices 3.2.2

3.2.3 Explain the function and importance of grounding in electrical circuits 3.2.3

3.2.4 Use the multimeter to measure voltage, current, and resistance 3.2.4

UNDERSTAND WATER AND WASTEWATER MANAGEMENT IN AGRICULTURAL AND INDUSTRIAL SETTINGS 4.0

PS4.1 : DEMONSTRATE SAFE PRACTICES AND PROCEDURES IN AGRICULTURAL AND INDUSTRIAL WATER MANAGEMENT 4.1

4.1.1 Explain the role of water use, management and conservation in the agricultural industry 4.1.1

4.1.2 Select and use safety equipment appropriate to working conditions 4.1.2

PS4.2 : DEMONSTRATE BASIC PIPE FITTING SKILLS 4.2

4.2.1 Describe how to select and identify fittings and pipe 4.2.1

4.2.2 Describe how to measure, mark, cut, ream, thread, and join pipe 4.2.2

UNDERSTAND PRINCIPLES AND APPLICATIONS IN AGRICULTURAL CONSTRUCTION 5.0

PS5.1 : DEMONSTRATE PRACTICES, APPLICATIONS AND PROCEDURES OF DRAFTING IN AGRICULTURAL PROJECTS 5.1

5.1.1 Differentiate between the various plans used in projects (blueprints, shop plans and wiring schematics) 5.1.1

5.1.2 Draw basic plans using proper drafting techniques 5.1.2

5.1.3 Develop a bill of materials from a selected set of plans 5.1.3

PS5.2 : DEMONSTRATE PRACTICES AND PROCEDURES IN CONSTRUCTION OF AGRICULTURAL PROJECTS 5.2

5.2.1 Explain safety procedures required while working on a project site, including personal safety, hand and power tools and equipment 5.2.1

5.2.2 Select appropriate design, type and materials to meet the building needs while considering use, environment and budget 5.2.2

UNDERSTAND PRINCIPLES AND AP SI CY

PS6.1 : DEMONSTRATE SAFE PRACTICES AND PROCEDURES OF THE OPERATION, MAINTENANCE AND REPAIR OF SMALL GAS ENGINES AND EQUIPMENT 6.1

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6.1.1 Describe personal and environmental safety practices associated with the operation, maintenance and repair of small gas engines and equipment 6.1.1

6.1.2 Describe personal and environmental safety practices associated with the operation, maintenance and repair of gas and diesel power as applied to agricultural equipment 6.1.2

PS6.2 : DEMONSTRATE A WORKING KNOWLEDGE OF THE ESSENTIAL ENGINE OPERATING SYSTEMS 6.2

6.2.1 Classify small gas engines according to ignition, fuel, cooling, lubrication and compression systems 6.2.1

6.2.2 Explain functions of ignition, fuel, cooling, lubrication and compression systems and their interrelationships 6.2.2

PS6.3 : RECOGNIZE APPROPRIATE POWER ATTACHMENTS AND THEIR APPLICATIONS 6.3

6.3.1 List and describe appropriate uses and applications of small engine attachments 6.3.1

6.3.2 Explain the various methods of connecting attachments to small engines 6.3.2

PS6.4 : DEMONSTRATE MAINTENANCE AND REPAIR PROCEDURES ON SINGLE AND MULTIPLE CYLINDER ENGINES AND ATTACHMENTS 6.4

6.4.1 Identify common failures relating to ignition, fuel, cooling, lubrication and compression systems and attachments 6.4.1

6.4.2 Interpret service manual information for small engine and equipment maintenance and repair 6.4.2

6.4.3 Diagnose and repair common failures relating to ignition, fuel, cooling, lubrication, electrical and compression systems 6.4.3

DEMONSTRATE BASIC SKILLS IN OPERATION, MAINTENANCE AND REPAIR OF AGRICULTURAL MACHINERY 7.0

PS7.1 : DEMONSTRATE SAFE PRACTICES AND PROCEDURES OF OPERATION, MAINTENANCE AND REPAIR OF AGRICULTURAL MACHINERY AND EQUIPMENT 7.1

7.1.1 Demonstrate the safety practices and procedures that must be practiced when working with agricultural machinery 7.1.1

7.1.2 Classify agricultural machinery according to function, type, and style 7.1.2

7.1.3 Explain the importance of preventive maintenance programs and keeping accurate maintenance records 7.1.3

7.1.4 Prepare an applicable piece of equipment for storage 7.1.4

7.1.5 Determine the cost of routine equipment maintenance 7.1.5

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7.1.6 Repair common failures relating to agricultural machinery by utilizing repair and parts manuals 7.1.6

7.1.7 Perform manufacturers recommended pre-operation safety inspection 7.1.7

IDENTIFY AND DEMONSTRATE THE PROPER USE OF AGRICULTURAL HAND AND POWER TOOLS 8.0

PS8.1 : IDENTIFY GENERAL SHOP HAND AND POWER TOOLS 8.1

8.1.1 Identify and explain the safe and proper use of shop hand and power tools 8.1.1

PS8.2 : DEMONSTRATE APPROPRIATE PROCEDURES FOR THE MAINTENANCE AND REPAIR OF HAND TOOLS 8.2

8.2.1 Determine if the tool can be safely used in its present condition or, if damaged, reconditioned/replaced 8.2.1

8.2.2 Demonstrate proper care and storage of tools 8.2.2

8.2.3 Repair a damaged tool to a safe working condition 8.2.3

DEMONSTRATE THE OPERATION, MAINTENANCE AND USE OF ELECTRICAL POWER, MOTORS AND CONTROLS IN AGRICULTURAL APPLICATIONS 9.0

PS9.1 : DEMONSTRATE PROCEDURES ASSOCIATED WITH THE OPERATION, MAINTENANCE AND REPAIR OF ELECTRICAL POWER 9.1

9.1.1 Recognize possible safety hazards while working with electrical motors and controls 9.1.1

9.1.2 Select and properly use safety equipment appropriate to working conditions 9.1.2

9.1.3 Explain the function of various controls used in electrical applications 9.1.3

9.1.4 Demonstrate a working knowledge of repair manuals and parts manuals 9.1.4

9.1.5 Diagnose and repair common failures relating to electrical motors and controls 9.1.5

UNDERSTAND AGRICULTURAL HYDRAULIC SYSTEMS 10.0

P10.1 : DEMONSTRATE KNOWLEDGE OF THE BASIC PRINCIPLES, OPERATION AND MAINTENANCE OF HYDRAULIC SYSTEMS IN THE AGRICULTURAL INDUSTRY 10.1

10.1.1 Identify essential safety practices relating to the operation of agricultural equipment using hydraulics 10.1.1

10.1.2 Explain the four basic principles of hydraulics 10.1.2

10.1.3 Describe the functions and relationships of the basic components of a hydraulic system 10.1.3

10.1.4 Perform routine service and maintenance utilizing appropriate service manuals 10.1.4

10.1.5 Identify problems associated with hydraulic systems 10.1.5

DE RE BE Skip to main content **.1 : ACTIVELY DEVELOP AND PARTICIPATE IN SUPERVISED AGRICULTURAL EXPERIENCE, WHICH ENABLES STUDENTS TO OBTAIN WORK-BASED SKILLS** 11.1

TWEEN A SUPERVISED

AGRICULTURAL EXPERIENCE (SAE) AND PREPARATION OF STUDENTS FOR A CAREER IN AGRICULTURE 11.0

- 11.1.1 Identify and describe a career interest in agriculture or agriculture related occupation 11.1.1
- 11.1.2 Participate in and manage their individual Supervised Agricultural Experience 11.1.2
- 11.1.3 Keep accurate records as prescribed by the Nevada State FFA policies and procedures 11.1.3

PARTICIPATE IN LEADERSHIP TRAINING THROUGH MEMBERSHIP IN FFA 12.0

PS12.1 : RECOGNIZE THE TRAITS OF EFFECTIVE LEADERS AND PARTICIPATE IN LEADERSHIP TRAINING THROUGH INVOLVEMENT IN FFA 12.1

- 12.1.1 Recognize opportunities in high-wage, high-skill careers in leadership and communications 12.1.1
- 12.1.2 Explain the FFA creed, motto, salute, and FFA Mission Statement 12.1.2
- 12.1.3 Demonstrate knowledge of the history of the organization, the chapter constitution and bylaws, and the chapter program of activities 12.1.3
- 12.1.4 Demonstrate knowledge of the FFA Code of Ethics, official dress, and the proper use of the FFA jacket 12.1.4
- 12.1.5 Describe the meaning of the FFA colors 12.1.5

PS12.2 : UNDERSTAND THE OPPORTUNITIES IN FFA 12.2

- 12.2.1 Describe how FFA develops leadership skills, personal growth, and career success 12.2.1
- 12.2.2 Identify major state and national activities and awards available to FFA members 12.2.2
- 12.2.3 Participate in at least one Career Development Event at the local level 12.2.3

PS12.3 : UNDERSTAND THE IMPORTANCE OF SCHOOL AND COMMUNITY AWARENESS 12.3

- 12.3.1 Discuss the meaning and importance of community service 12.3.1
- 12.3.2 Identify and describe some community service organizations 12.3.2
- 12.3.3 Explain how FFA members can become involved in community improvement and development 12.3.3