North Carolina CTE

# Agricultural Mechanics II (2005): Grades 9, 10, 11, 12

Adopted 2005

## Leadership Development

**AM01. Demonstrate the major components of leadership involved in successful employment.** AM01

01. Identify leadership qualities desired by the agricultural mechanics industry. AM01.01
02. Develop leadership qualities through participation in the agricultural mechanics instructional program. AM01.02

**AM02. Adapt public speaking techniques to the audience and purpose of the communication.** AM02

01. Describe the major types of speeches and the variables to be considered when presenting the speeches. AM02.01
02. Use principles of public speaking to deliver a speech on an agricultural mechanics topic. AM02.02

**AM03. Apply Robert's Rules of Order to conduct business meetings of agricultural mechanics organizations.** AM03

01. Analyze the role of Robert's Rules of Order in the orderly conduct of business. AM03.01
02. Use principles of parliamentary procedure to conduct an orderly transaction of business utilizing Robert's Rules of Order. AM03.02

## Supervised Agricultural Experience Program

**AM04. Use career objectives to design a school-to-work employment plan.** AM04

01. Describe the procedures for planning and implementing a school-to-work employment plan. AM04.01
02. Use career objectives to create an individual written school-to-work employment plan. AM04.02

**AM05. Develop a financial record system for use in the agricultural mechanics industry.** AM05

01. Identify the elements of a financial statement. AM05.01
02. Use principles of financial literacy to compose a financial statement. AM05.02

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**Safe Work Practices In Agricultural Mechanics**

**AM06. Investigate safety practices that apply to agricultural mechanics.** AM06

01. Explain safety rules related to agricultural mechanics. AM06.01
02. Describe fire prevention as it relates to agricultural mechanics. AM06.02

**AM07. Demonstrate the proper use of agricultural mechanics tools, equipment, and facilities.** AM07

01. Describe tools and equipment used in agricultural mechanics. AM07.01
02. Explain procedures for using tools, equipment, and facilities. AM07.02
03. Use tools and equipment properly and safely. AM07.03
04. Determine design criteria for safe and effective use and management of agricultural mechanics service centers. AM07.04
05. Use design criteria to design plans for an agricultural mechanics service center. AM07.05

**Metal Fabrication**

**AM08. Investigate procedures for fastening metal.** AM08

01. Explain the purposes of different metal fasteners. AM08.01
02. Use proper procedures for fastening with bolts, nuts, washers, screws, rivets, taps, and dies. AM08.02

**AM09. Use oxy-fuel welding equipment and materials.** AM09

01. Explain procedures for using oxyacetylene equipment and materials. AM09.01
02. Demonstrate welding various types of joints and metals. AM09.02
03. Demonstrate safe assembly of an oxyacetylene rig. AM09.03
04. Demonstrate cutting low carbon steel. AM09.04
05. Use proper procedures to solder and braze various metals. AM09.05
06. Heat, bend, harden, temper, and anneal metal. AM09.06

**AM10. Use arc welding equipment and materials.** AM10

01. Explain procedures for using arc welding equipment. AM10.01
02. Weld using SMAW, GMAW, and GTAW procedures. AM10.02

**AM11. Demonstrate plasma arc cutting and welding.** AM11

01. Examine procedures of plasma arc cutting and plasma arc welding. AM11.01
02. Cut and weld using plasma arc. AM11.02

**AM12. Weld cast iron.** AM12

01. Recognize the characteristics and proper welding techniques of cast iron. AM12.01
02. Explain procedures for welding cast iron. AM12.02
03. Weld cast iron in agricultural metal fabrication. AM12.03

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**AM13. Construct a metal fabrication project.** AM13

01. Identify common symbols, abbreviations, and numbering systems used for various metals in metal fabrication. AM13.01
02. Explain procedures to design a metal fabrication project. AM13.02
03. Use correct procedures to design a metal fabrication project. AM13.03
04. Use proper procedures to construct a metal fabrication project. AM13.04

**AM14. Examine techniques for welding plastics.** AM14

01. Research the types of equipment and supplies needed to weld plastics. AM14.01
02. Use proper techniques to weld plastics. AM14.02

**AM15. Investigate techniques for repairing synthetic materials.** AM15

01. Research common types of fiberglass repairs and the materials needed. AM15.01
02. Repair synthetic materials. AM15.02

**Agricultural Power**

**AM16. Research types of tractors and their safe uses.** AM16

01. Describe types of agricultural tractors and their uses. AM16.01
02. Explain principles and procedures for safe operation of tractors. AM16.02
03. Demonstrate the safe operation of tractors. AM16.03

**AM17. Research preventive maintenance procedures for tractors, equipment, and small engines.** AM17

01. Explain preventive maintenance procedures for tractors, equipment, and small engines. AM17.01
02. Discuss how to service tractors, equipment and small engines. AM17.02
03. Use owner's manuals to troubleshoot agricultural tractors, equipment, and small engines. AM17.03

**Agricultural Construction**

**AM18. Use blueprints to plan layout and framing.** AM18

01. Identify blueprint terms and symbols. AM18.01
02. Read blueprints to plan layout and framing. AM18.02

**AM19. Demonstrate safe use of layout tools and equipment.** AM19

01. Use builder's level, tripod, and laser level. AM19.01
02. Demonstrate the 3-4-5 method to lay out a building. AM19.02

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**20. Build the framing of a wood structure.** AM20

01. Identify framing terms and materials. AM20.01

02. Explain procedures used to calculate rafter lengths and angles. AM20.02

03. Explain procedures used to cut and install framing materials. AM20.03

04. Demonstrate the proper procedures to frame a wood building. AM20.04

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**AM21. Maintain an agricultural water system.** AM21

01. Describe pipe tools, types of pipe, fixtures, and supplies. AM21.01

02. Explain principles and procedures to maintain and repair pipes, fixtures, and water systems. AM21.02

03. Maintain and repair pipes, fixtures, and water systems. AM21.03

04. Use principles and procedures to plan water systems. AM21.04

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**AM22. Construct a fence.** AM22

01. Explain principles and procedures for constructing fences. AM22.01

02. Demonstrate correct principles and procedures to build a fence. AM22.02