Will Burt
Ag Mech 1

Agricultural Mechanics I Pacing Guide

Unit 1: FFA Basics	**AFNR-AMTI-2** Orient and apply the comprehensive program of agricultural education, learn to work safely in the agriculture lab and work sites, demonstrate selected competencies in leadership through the FFA and agricultural industry organizations, and develop plans for a Supervised Agricultural Experience Program (SAEP). **2.1** Explain the role of the Agriculture Education program and the FFA in personal development. **2.2** Demonstrate knowledge learned through a SAEP. **2.3** Designs, implements, and documents SAE by recording steps, skills acquired, and financial information. **2.4** Develop leadership and personal development skills through participation in the FFA. **2.5** Explore the history and background of the FFA.	1 Week
Unit 2: Safety	**AFNR-AMTI-4** Recognize potential hazards in agricultural mechanics, identify how to create a safe work environment, and demonstrate proper safety practices. **4.1** Identify and eliminate potential hazards in the agricultural mechanics laboratory and/or work setting. **4.2** Discuss the importance of safety in agricultural occupations. **4.3** Describe features of a safe work environment in various agricultural mechanical locations. **4.4** Select safety equipment and procedures for various agriculture related activities. **4.5** Demonstrate safety procedures and appropriate behavior while working in the agriculture classroom, labs, and/or work sites. **4.6** Distinguish the areas identified by various safety colors and the importance of the coding. **4.7** Describe the meaning of each safety color. **4.8** Identify and describe personal protective equipment required for various activities conducted in the agricultural mechanics laboratory and industry. **4.9** Recognize potential hazards related to working with electricity, electric arc welders, hand tools, portable and stationary power equipment, power machinery, fasteners and fuels, lubricants, solvents, paints and other chemicals used in agricultural mechanics.	1 Week

	4.10 Safely operate all hand tools, power tools, and equipment in the agricultural mechanics laboratory.	
Unit 3: Tractor Operations and Maintenance	**AFNR-AMTI-12** Demonstrate and explain the skills necessary to safely and efficiently operate agricultural tractors and related equipment including mowers used in lawn maintenance. **12.1** Identify operating instructions and safety procedures for proper operation of agricultural machinery. **12.2** Identify common types of machinery used in the agricultural industry. **12.3** Describe the functions and purposes of common types of machinery used in the agriculture industry. **12.4** Compare and contrast the operating instructions and safety procedures for operating a tractor between various manufacturers. **12.5** Operate the tractor and or lawn equipment safely as recommended by the manufacturer.	5 Weeks
Unit 4: Woodworking	**AFNR-AMTI-5** Identify and explain the correct use of common woodworking hand tools and layout tools used in woodworking and agricultural construction. **5.1** Identify common woodworking hand tools, layout tools and measuring tools. **5.2** Demonstrate the proper care and use of hand tools, layout tools and measuring tools. **5.3** Select and demonstrate appropriate techniques for restoring worn, damaged, or abused tools to good working condition. **AFNR-AMTI-6** Examine, identify, and select common types of lumber, fasteners, and finish materials used in woodworking and agricultural construction. **6.1** Describe and identify common woods; including hardness and uses. **6.2** Examine wood materials and assess the characteristics of assigned industry grades. **6.3** Classify common dimensions of wood materials.	5 Weeks

	6.4 Identify screws, nails, bolts, and other fasteners. **6.5** Select appropriate screws, nails, bolts, and other fasteners for various uses. **6.6** Compare different types of wood glues and their recommended uses. **6.7** Display proper techniques for making basic glue joints. **6.8** Identify proper woodworking and agricultural construction preserving/finishing materials.	
Unit 5: Electrical Wiring	**AFNR-AMTI-7** Demonstrate appropriate knowledge of electrical terms and theory, and explain the operating principles of various types of electrical circuits. **7.1** Describes and identifies the basic principles of electrical theory. **7.2** Describes types of electrical circuits. **7.3** Defines electrical terms. **7.4** Describes the relationship between watts, volts, amps and resistance. **7.5** Explains the purpose of the National Electrical Code. **7.6** Identify electrical symbols used in electrical schematics and floor plans. **7.7** Create electrical schematics that use appropriate electrical symbols and follow National Electrical Code requirements **AFNR-AMTI-8** Demonstrate skills in selecting tools, conductors, devices, electrical enclosures and related materials necessary for planning and installation of electrical circuits for agricultural and residential applications. **8.1** Identify tools commonly used in the electrical industry. **8.2** Demonstrate the proper use of electrical tools. **8.3** Identify types of electrical cable used in agricultural applications. **8.4** Calculate load for specific circuit applications and describe potential hazards of overloads on a circuit. **8.5** Select conductors for circuit applications based on given load, location, temperature and distance parameters. **8.6** Compare and contrast switches, receptacles, lighting outlet devices, grounding conductors, solderless connectors and related materials for use in agricultural and residential electric circuits. **8.7** Demonstrate proper use of tools for preparing conductors, mounting electrical enclosures	6 Weeks

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	and connecting devices for branch and feeder circuits. **8.8** Install branch circuit enclosures, conductors and devices and explain how each installation is completed in accordance with the National Electrical Code.	