

Standards and Competencies for Agricultural Power & Equipment (Course # 5152)

	Begin-End
Standard 1 - Demonstrate the safe use of agricultural tools and equipment.	2009 -
1.1 - Demonstrate the safe use of shop tools and equipment. 1	2009 -
1.2 - Specify the safety color codes used in a shop environment. 1	2009 -
1.3 - Differentiate the classes of fire and correlate them with the appropriate fire extinguishers. 1	2009 -
1.4 - Determine safety procedures to be used in a shop environment. 1	2009 -
1.5 - Complete a shop safety test with 100 percent accuracy. 1	2009 -
Standard 2 - Summarize the theory of engine operation.	2009 -
2.1 - Compare the difference characteristics of a motor and an engine. 1	2009 -
2.2 - Summarize the four-stroke cycle and the events that occur during each stroke. 1	2009 -
2.3 - Specify and explain the function of the basic engine parts involved in the four-stroke cycle engine. 1	2009 -
2.4 - Summarize the two-stroke cycle and the events that occur during each stroke. 1	2009 -
2.5 - Specify and explain the basic engine parts involved in the two-stroke cycle. 1	2009 -
2.6 - Distinguish between gasoline and diesel engines. 1	2009 -
Standard 3 - Prescribe the basic operation of agricultural machinery.	2009 -
3.1 - Assess the routine maintenance procedures for safe and proper operation of agricultural machinery. 2	2009 -
3.2 - Specify and explain the functions of agricultural equipment. 2	2009 -
3.3 - Demonstrate the principles of restoring Agricultural equipment and prepare a written project report. 2	2009 -
Standard 4 - Specify the correct use of precision instruments and basic tools to make settings on agricultural power equipment and small engines to manufacturer specifications.	2009 -
4.1 - Demonstrate the proper used of tools in making precision measurement. 1	2009 -
4.2 - Record and interpret data from precision measurements. 1	2009 -
4.3 - Demonstrate safe use of precision tools and equipment. 1	2009 -
Standard 5 - Evaluate troubleshooting techniques to assess engine failure problems.	2009 -
5.1 - Diagnose common engine problems and explain the cause and preventative measures. 1	2009 -
5.2 - Write an inspection customer report including parts and repair cost. 1	2009 -
5.3 - Categorize and explain prevention of major causes of engine failures. 1	2009 -
Standard 6 - Relate engine components to various systems.	2009 -
6.1 - Differentiate the parts and function of each engine system. 2	2009 -
6.2 - Specify the components and functions of hydraulic systems. 2	2009 -
Standard 7 - Read and interpret diagrams and schematics related to agricultural equipment.	2009 -
7.1 - Read and interpret hydraulic system schematics. 2	2009 -
7.2 - Read and interpret electrical schematics. 2	2009 -
7.3 - Read and use information from service manuals. 2	2009 -
Standard 8 - Compare the characteristics and uses for a variety of fuels and lubricants.	2009 -
8.1 - Evaluate and explain the grades of diesel and their uses. 1	2009 -
8.2 - Evaluate and explain gasoline octane ratings and purposes. 1	2009 -
8.3 - Evaluate and explain lubricants by service, grade and function. 1	2009 -
Standard 9 - Demonstrate electrical motor operation, maintenance, and application.	2009 -
9.1 - Evaluate types of electric motors and their agricultural applications. 2	2009 -
9.2 - Analyze and explain the basic parts of an electric motor. 2	2009 -
9.3 - Perform an electric motor installation. 2	2009 -
9.4 - Specify and explain the procedures for maintaining electric motors. 2	2009 -
9.5 - Evaluate control systems using electric motors. 2	2009 -
Standard 10 - Evaluate career opportunities available in Agricultural power and equipment.	2009 -
10.1 - Research and prepare a written report on careers and jobs associated with agricultural power. 1	2009 -
10.2 - Specify training and skills needed for careers in agricultural power industries. 1	2009 -
Standard 11 - Integrate academic competencies in agricultural power and equipment.	2009 -
11.1 - Use current resources to research and write a report on modern improvements in agricultural equipment. 1	2009 -
11.2 - Apply appropriate grammar and spelling in filling out reports and forms. 1	2009 -
11.3 - Read instruments in metric and English. 1	2009 -
11.4 - Convert English/metric ratios. 1	2009 -
11.5 - Calculate ratios and percentages in basic shop skills. 1	2009 -
11.6 - Explain physical properties involved in combustion. 1	2009 -
11.7 - Explain basic hydraulic principles using Pascal's law. 1	2009 -
11.8 - Explain basic laws of electricity. 1	2009 -
Standard 12 - Demonstrate premier leadership and personal growth needed for success and advancement in the career area of agricultural mechanics.	2009 -
12.1 - Analyze careers in agricultural power and equipment. 1	2009 -
12.2 - Use FFA activities to develop leadership skills. 1	2009 -
12.3 - Develop a supervised agricultural experience program related to agricultural power and equipment. 1	2009 -
12.4 - Demonstrate proficiency in agricultural mechanics through FFA Career Development Events. 1	2009 -
12.5 - Prepare agricultural mechanic and power exhibits for displays. 1	2009 -