AE.EPT2. Engine and Power Technology 2

Essential Discipline Goals

-Develop and apply the technical competency and related academic skills that allow for economic independence and career satisfaction.
-Acquire the essential learning and values that foster continued education throughout life. Demonstrate the ability to communicate, solve problems, work individually and in teams, and apply information effectively.
-Develop technological literacy and the ability to adapt to future change.

Standards

Indicators

AE.EPT2.10 Develop written and verbal communication skills

- AE.EPT2.10.01 Discuss the personal qualities of a successful employee
- AE.EPT2.10.02 Participate in a mock employer interview and/or sales presentation
- AE.EPT2.10.03 Review the opportunities available through participation in FFA activities
- AE.EPT2.10.03 Develop/revise a personal resume
- AE.EPT2.10.04 Demonstrate leadership skills
- AE.EPT2.10.05 Fill out a sample service order
- AE.EPT2.10.06 Demonstrate customer relations skills as a service manager

AE.EPT2.20 Review and demonstrate safe work habits, and proper use of tools and equipment

- AE.EPT2.20.01 Review and demonstrate the safe use of hand tools
- AE.EPT2.20.02 Review and develop knowledge of safe and proper use of power equipment
- AE.EPT2.20.03 Review and demonstrate safe use of equipment available in the laboratory
- AE.EPT2.20.04 Review and demonstrate the use of safety rules and procedures
- AE.EPT2.30.01 Identify specialized tools used in making engine repairs
- AE.EPT2.30.02 Review and demonstrate proper use of measuring instruments
- AE.EPT2.30.03 Select testing and measuring equipment to service engines

AE.EPT.30 Develop an understanding of the operating theory of multi-cylinder engines

- AE.EPT.30.01 Identify the parts of a multi-cylinder engine 1.5.7
- AE.EPT.30.02 Describe the function of each part in a multi-cylinder engine EG2.3.3
- AE.EPT.30.03 Compare the compression, ignition, and fuel systems of a multi-cylinder engine to those of a single cylinder engine 1.5.8
- AE.EPT.30.04 Disassemble and reassemble a multi-cylinder engine 1.3.4
- AE.EPT.30.05 Perform recommended maintenance procedures on multi-cylinder engines 1.3.4

AE.EPT2.40 Diagnose and service support system problems

- AE.EPT2.40.01 Maintain and service the power train
- AE.EPT2.40.02 Maintain and service the diesel fuel system
- AE.EPT2.40.03 Maintain and service the gasoline fuel system
- AE.EPT2.40.04 Maintain and service the charging circuit
- AE.EPT2.40.05 Maintain and service the electrical system

AE.EPT2.50 Develop the ability to service and troubleshoot gasoline and diesel engines

- AE.EPT2.50.01 Troubleshoot engine failures
- AE.EPT2.50.02 Perform engine failure analysis

AE.EPT2.60 Maintain and Service Hydraulic Systems

- AE.EPT2.60.01 Describe fundamental principles of hydraulics
- AE.EPT2.60.02 Explain the relationship between velocity, flow, and power in hydraulic applications
- AE.EPT2.60.03 Clean and flush hydraulic system

AE.EPT2.70 Demonstrate safe and proper operation of commercial power equipment

AE.EPT2.70.01 Demonstrate safe use of lawn and garden equipment
AE.EPT2.70.02 Demonstrate safe operation of large machinery

AE.EPT2.80 Understand, identify, and utilize procedures in the operation and repair of electrical motors

AE.EPT2.80.01 Explain the theory of electrical motors and demonstrate their operation 5.2.A2
AE.EPT2.80.02 Identify the parts of an electrical motor and explain their function 1.5.7
AE.EPT2.80.03 Utilize electrical motor testing and measure equipment 1.3.1
AE.EPT2.80.04 Participate in the disassembly and reassemble of an electrical motor 1.3.4
AE.EPT2.80.05 Use diagnostic thinking skills to troubleshoot electrical systems 1.1.1

AE.EPT2.90 Weld all positions utilizing the SMAW and GMAW welder

AE.EPT2.90.01 Demonstrate SMAW welding techniques in the flat, vertical, horizontal and overhead positions 1.3.4
AE.EPT2.90.02 Demonstrate MIG welding techniques in the flat, vertical, horizontal, and overhead positions 1.3.4
AE.EPT2.90.03 Demonstrate TIG welding techniques in the flat, vertical, horizontal, and overhead positions 1.3.4
AE.EPT2.90.04 Construct project utilizing SMAW and GMAW the welders 1.3.4

AE.EPT2.95 Demonstrate the safe use of welding and cutting torches 1.3.3

AE.EPT2.95 Operate oxyacetylene torches for cutting and welding
AE.EPT2.95.01 Demonstrate oxyacetylene cutting and welding techniques 1.3.4
AE.EPT2.95.02Construct projects utilizing the oxyacetylene torches 1.3.4
AE.EPT.95.03 Demonstrate the ability to complete a puddle bead, fusion weld and braze bead on light gage steel 1.3.4