



*Department of Teaching & Learning*  
*Parent/Student Course Information*

***Outdoor Power Equipment I***  
***(VO 8722)***  
***Three Credits, One Year***  
***Grades 11 or 12***

*Counselors are available to assist parents and students with course selections and career planning. Parents may arrange to meet with the counselor by calling the school's guidance department.*

**COURSE DESCRIPTION**

Outdoor Power Equipment Technology is a two-year program which provides students with the knowledge and skills required to service and repair air-cooled, engine-powered lawn and garden equipment, outboard motors, motorcycles, ATVs, etc. Areas of study include drivelines, hydraulics, hydrostatic transmissions and electrical systems. Students will become power equipment certified by passing the Equipment and Engine Training Council (EETC) third party examination.

**CERTIFICATION**

Equipment and Engine Training Council (EETC): Four and Two Stroke Technician Certification  
National Occupational Competency Testing Institute (NOCTI) Assessment: Small Engine Technology

**STUDENT ORGANIZATION**

SkillsUSA is a co-curricular organization for all students enrolled in trade and industrial education programs. SkillsUSA is a partnership of students, teachers and industry working together to ensure America has a skilled workforce. SkillsUSA helps students excel by providing educational programs, events and competitions that support career and technical education (CTE) in the nation's classrooms. Students are highly encouraged to participate.

**PREREQUISITE**

None

**OPTIONS FOR NEXT COURSE**

Outdoor Power Equipment II

**REQUIRED STUDENT TEXTBOOK**

None

## COMPETENCIES FOR OUTDOOR POWER EQUIPMENT I

### **Demonstrating Workplace Readiness Skills: Personal Qualities and People Skills**

- 1 Demonstrate positive work ethic.
- 2 Demonstrate integrity.
- 3 Demonstrate teamwork skills.
- 4 Demonstrate self-representation skills.
- 5 Demonstrate diversity awareness.
- 6 Demonstrate conflict-resolution skills.
- 7 Demonstrate creativity and resourcefulness.

### **Demonstrating Workplace Readiness Skills: Professional Knowledge and Skills**

- 8 Demonstrate effective speaking and listening skills.
- 9 Demonstrate effective reading and writing skills.
- 10 Demonstrate critical-thinking and problem-solving skills.
- 11 Demonstrate healthy behaviors and safety skills.
- 12 Demonstrate an understanding of workplace organizations, systems, and climates.
- 13 Demonstrate lifelong-learning skills.
- 14 Demonstrate job-acquisition and advancement skills.
- 15 Demonstrate time-, task-, and resource-management skills.
- 16 Demonstrate job-specific mathematics skills.
- 17 Demonstrate customer-service skills.

### **Demonstrating Workplace Readiness Skills: Technology Knowledge and Skills**

- 18 Demonstrate proficiency with technologies common to a specific occupation.
- 19 Demonstrate information technology skills.
- 20 Demonstrate an understanding of Internet use and security issues.
- 21 Demonstrate telecommunications skills.

### **Examining All Aspects of an Industry**

- 22 Examine aspects of planning within an industry/organization.
- 23 Examine aspects of management within an industry/organization.
- 24 Examine aspects of financial responsibility within an industry/organization.
- 25 Examine technical and production skills required of workers within an industry/organization.
- 26 Examine principles of technology that underlie an industry/organization.
- 27 Examine labor issues related to an industry/organization.
- 28 Examine community issues related to an industry/organization.
- 29 Examine health, safety, and environmental issues related to an industry/organization.

### **Addressing Elements of Student Life**

- 30 Identify the purposes and goals of the student organization.
- 31 Explain the benefits and responsibilities of membership in the student organization as a student and in professional/civic organizations as an adult.
- 32 Demonstrate leadership skills through participation in student organization activities, such as meetings, programs, and projects.
- 33 Identify Internet safety issues and procedures for complying with acceptable use standards.

### **Applying Safety Practices on the Job**

- 34 Identify marked safety areas.
- 35 Identify the location and use of eye wash stations.
- 36 Identify the location of the posted evacuation routes.

- 37 Locate and demonstrate knowledge of safety data sheets (SDS).
- 38 Demonstrate the safe use of chemicals.
- 39 Demonstrate the safe use of standard and metric hand tools.
- 40 Demonstrate the safe use of power tools.
- 41 Demonstrate the safe use of precision standard and metric measuring tools.
- 42 Demonstrate the safe use of protective clothing and equipment.
- 43 Demonstrate the safe use of fire protection equipment.
- 44 Demonstrate the safe use of equipment.
- 45 Follow safety standards and regulations of the U.S. Environmental Protection Agency (EPA), Occupational Safety and Health Administration (OSHA), the Equipment and Engine Training Council (EETC) Education Committee, and Safety Data Sheets (SDS).

### **Using Tools and Equipment**

- 46 Identify standard and metric designation.
- 47 Demonstrate safe handling and use of appropriate tools.
- 48 Demonstrate proper cleaning, storage, and maintenance of tools and equipment.
- 49 Demonstrate proper use of precision measuring tools (i.e., micrometer, dial-indicator, dial-caliper).

### **Performing Lab Operations**

- 50 Use a technical manual.
- 51 Maintain a clean and orderly work area.
- 52 Prepare equipment for delivery.

### **Identifying Fasteners and Their Uses**

- 53 Identify type and grade of standard and metric fasteners.
- 54 Choose appropriate fastener for corresponding job.
- 55 Repair damaged thread using a tap and die set.
- 56 Repair damaged thread using thread inserts (i.e., heli-coil thread insert).

### **Understanding the Interaction of 4-Cycle Engine Components**

- 57 Explain 4-cycle engine theory.
- 58 Replace connecting rods.
- 59 Install a crankshaft.
- 60 Install a camshaft.
- 61 Install oil seals and gaskets.
- 62 Install valve train components.
- 63 Install piston.
- 64 Install piston rings.
- 65 Disassemble 4-cycle engine.

### **Diagnosing and Servicing Fuel System**

- 66 Describe the principles of fuel delivery.
- 67 Evaluate the operation of a carburetor.
- 68 Determine fuel quality.
- 69 Remove and replace the fuel tank and fuel lines.
- 70 Inspect fuel tank vent.
- 71 Remove and replace the fuel filter systems.
- 72 Service various types of air cleaner.
- 73 Disassemble, clean, and inspect diaphragm-type carburetor.
- 74 Reassemble and adjust a diaphragm-type carburetor.
- 75 Disassemble, clean, and inspect a float-type carburetor.

- 76 Reassemble and adjust a float-type carburetor.
- 77 Clean crankcase breather.

### **Diagnosing and Servicing General Electrical System**

- 78 Read a multimeter.
- 79 Apply electrical theory.
- 80 Diagnose and repair starting circuit.
- 81 Test and charge the battery.
- 82 Repair and replace starter.

### **Servicing Manual Starting System**

- 83 Replace starter spring.
- 84 Replace a starter clutch if needed.
- 85 Replace starter pawls.
- 86 Replace a worn or defective cup.
- 87 Replace starter rope.
- 88 Describe the operation of a kickstart system.

### **Servicing Ignition System**

- 89 Remove, inspect, adjust, and install the spark plugs.
- 90 Remove, inspect, and replace the flywheel.
- 91 Adjust armature air gap.
- 92 Test and replace ignition wires.
- 93 Time the ignition system.
- 94 Test and replace safety switch.

### **Understanding the Interaction of 2-Cycle Engine Components**

- 95 Explain 2-cycle engine theory.
- 96 Describe valving systems commonly found in 2-cycle engines.
- 97 Disassemble 2-cycle engine.
- 98 Install a piston.
- 99 Install piston rings.
- 100 Replace a cylinder.
- 101 Replace connecting rods.
- 102 Replace a crankshaft.
- 103 Replace oil seals.
- 104 Mix fuel at appropriate ratio.

### **Servicing Cooling Systems**

- 105 Explain cooling system theory.
- 106 Identify liquid cooling system components.
- 107 Identify air cooling system components.

### **Servicing Governor Systems**

- 108 Explain governor system theory.
- 109 Inspect, adjust, and replace pneumatic system.
- 110 Inspect, adjust, and replace mechanical system.

### **Servicing Exhaust Systems**

- 111 Explain exhaust system theory, 2-cycle engine.
- 112 Diagnose common equipment problems in a damaged exhaust system, 2-cycle engine.

- 113 Identify exhaust components, 2-cycle engine.
- 114 Explain exhaust system theory, 4-cycle engine.
- 115 Identify cleaning procedures for exhaust ports and spark arrestor screens, 2-cycle engine.

**Diagnosing and Servicing Small-Engine Equipment**

- 116 Demonstrate the steps of the troubleshooting and repair process.
- 117 Inspect and service supporting systems and components.

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