



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

***Outdoor Power Equipment II***  
***(VO 8723)***  
***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**

Outdoor Power Equipment I

**OPTIONS FOR NEXT COURSE**

None

**REQUIRED STUDENT TEXTBOOK**

None

## COMPETENCIES FOR OUTDOOR POWER EQUIPMENT II

### **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).

### **Performing Lab Operations**

- 46 Use a technical manual.
- 47 Maintain a time record for each lab job.
- 48 Maintain a daily and weekly work schedule and assign individuals to job positions.
- 49 Determine economic feasibility of repair.
- 50 Write a service order.
- 51 Calculate labor cost using a flat rate manual.
- 52 Identify work performed on work orders.
- 53 Interpret parts lists and schematics using associated manuals, microfiche, and computer.
- 54 Prepare warranty reports.
- 55 Adhere to inventory controls.
- 56 Identify superseded replacement parts.
- 57 Maintain a clean and orderly work area.
- 58 Prepare equipment for delivery.

### **Diagnosing and Servicing 4-Cycle Engine**

- 59 Determine wear on internal engine parts using precision standard and metric measuring tools.
- 60 Ridge ream top of cylinder.
- 61 Bore and deglaze cylinder.
- 62 Replace connecting rods.
- 63 Install a crankshaft.
- 64 Install a camshaft.
- 65 Install oil seals and gaskets.
- 66 Install valve train components.
- 67 Reassemble long block.
- 68 Apply lubrication systems theory.
- 69 Diagnose needed repair on 4-cycle engine components.

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

- 70 Disassemble, clean, and inspect fuel pump.
- 71 Reassemble and install fuel pump.
- 72 Diagnose needed repair on fuel system.
- 73 Describe the components and operation of an electronic fuel injection system.

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

- 74 Service and repair DC electric starter/generator.
- 75 Troubleshoot the charging circuit, using a manufacturer's guide.
- 76 Remove, clean, and inspect starter/generator pulley and belt.
- 77 Replace starter/generator pulley and belt.

- 78 Remove, clean, and inspect alternator.
- 79 Explain how AC is converted to DC voltage.
- 80 Repair or replace alternator components.
- 81 Diagnose and repair starting circuit.

### **Diagnosing and Servicing Ignition System**

- 82 Test and replace coil/magneto.
- 83 Explain the operation of an electronic ignition system.

### **Diagnosing and Servicing 2-Cycle Engine**

- 84 Diagnose needed repair on 2-cycle engine components.
- 85 Determine wear on internal engine parts using precision standard and metric measuring tools.
- 86 Describe the operation of reed valves.
- 87 Describe the operation of piston port valves.
- 88 Describe the operation of rotary valves.
- 89 Reassemble 2-cycle engine.

### **Diagnosing and Servicing Small-Engine Equipment**

- 90 Adjust controls (i.e., cables, rods, and springs).
- 91 Diagnose needed repair.
- 92 Replace and adjust drive trains and power take-off (PTO) systems.

### **Analyzing Engine Failure**

- 93 Identify the five major categories of failure analysis.

### **Performing Thermal Cutting Processes and Welding Operations**

- 94 Use an oxy acetylene torch.
- 95 Operate gas metal arc welding equipment.
- 96 Operate manual plasma arc cutting equipment.

### **Maintaining Wheels and Tires**

- 97 Inspect tire condition.
- 98 Dismount, inspect, and remount tire on wheel; balance wheel and tire assembly (static and dynamic).
- 99 Repair tire using internal patch.

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