



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

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 Personal Qualities and Abilities

- 1 Demonstrate creativity and innovation.
- 2 Demonstrate critical thinking and problem solving.
- 3 Demonstrate initiative and self-direction.
- 4 Demonstrate integrity.
- 5 Demonstrate work ethic.

Demonstrating Interpersonal Skills

- 6 Demonstrate conflict-resolution skills.
- 7 Demonstrate listening and speaking skills.
- 8 Demonstrate respect for diversity.
- 9 Demonstrate customer service skills.
- 10 Collaborate with team members.

Demonstrating Professional Competencies

- 11 Demonstrate big-picture thinking.
- 12 Demonstrate career- and life-management skills.
- 13 Demonstrate continuous learning and adaptability.
- 14 Manage time and resources.
- 15 Demonstrate information-literacy skills.
- 16 Demonstrate an understanding of information security.
- 17 Maintain working knowledge of current information-technology (IT) systems.
- 18 Demonstrate proficiency with technologies, tools, and machines common to a specific occupation.
- 19 Apply mathematical skills to job-specific tasks.
- 20 Demonstrate professionalism.
- 21 Demonstrate reading and writing skills.
- 22 Demonstrate workplace safety.

Examining All Aspects of an Industry

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

Addressing Elements of Student Life

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

Exploring Work-Based Learning

- 35 Identify the types of work-based learning (WBL) opportunities.

- 36 Reflect on lessons learned during the WBL experience.
- 37 Explore career opportunities related to the WBL experience.
- 38 Participate in a WBL experience, when appropriate.

Applying Safety Practices on the Job

- 39 Identify marked safety areas.
- 40 Identify the location and use of eye wash stations.
- 41 Identify the location of the posted evacuation routes.
- 42 Locate and demonstrate knowledge of safety data sheets (SDS).
- 43 Demonstrate the safe use of chemicals.
- 44 Demonstrate the safe use of standard and metric hand tools.
- 45 Demonstrate the safe use of power tools.
- 46 Demonstrate the safe use of precision standard and metric measuring tools.
- 47 Demonstrate the safe use of protective clothing and equipment.
- 48 Demonstrate the safe use of fire protection equipment.
- 49 Demonstrate the safe use of equipment.
- 50 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

- 51 Identify standard and metric designation.
- 52 Demonstrate safe handling and use of appropriate tools.
- 53 Demonstrate proper cleaning, storage, and maintenance of tools and equipment.
- 54 Demonstrate proper use of precision measuring tools (i.e., micrometer, dial-indicator, dial-caliper).

Performing Lab Operations

- 55 Use a technical manual.
- 56 Maintain a clean and orderly work area.
- 57 Prepare equipment for delivery.

Identifying Fasteners and Their Uses

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

Understanding the Interaction of 4-Cycle Engine Components

- 62 Explain 4-cycle engine theory.
- 63 Replace connecting rods.
- 64 Install a crankshaft.
- 65 Install a camshaft.
- 66 Install oil seals and gaskets.
- 67 Install valve train components.
- 68 Install piston.
- 69 Install piston rings.
- 70 Disassemble 4-cycle engine.

Diagnosing and Servicing Fuel System

- 71 Describe the principles of fuel delivery.

- 72 Evaluate the operation of a carburetor.
- 73 Determine fuel quality.
- 74 Remove and replace the fuel tank and fuel lines.
- 75 Inspect fuel tank vent.
- 76 Remove and replace the fuel filter systems.
- 77 Service various types of air cleaner.
- 78 Disassemble, clean, and inspect diaphragm-type carburetor.
- 79 Reassemble and adjust a diaphragm-type carburetor.
- 80 Disassemble, clean, and inspect a float-type carburetor.
- 81 Reassemble and adjust a float-type carburetor.
- 82 Clean crankcase breather.

Diagnosing and Servicing General Electrical System

- 83 Read a multimeter.
- 84 Apply electrical theory.
- 85 Diagnose and repair starting circuit.
- 86 Test and charge the battery.
- 87 Repair and replace starter.

Servicing Manual Starting System

- 88 Replace starter spring.
- 89 Replace a starter clutch if needed.
- 90 Replace starter pawls.
- 91 Replace a worn or defective cup.
- 92 Replace starter rope.
- 93 Describe the operation of a kickstart system.

Servicing Ignition System

- 94 Remove, inspect, adjust, and install the spark plugs.
- 95 Remove, inspect, and replace the flywheel.
- 96 Adjust armature air gap.
- 97 Test and replace ignition wires.
- 98 Time the ignition system.
- 99 Test and replace safety switch.

Understanding the Interaction of 2-Cycle Engine Components

- 100 Explain 2-cycle engine theory.
- 101 Describe valving systems commonly found in 2-cycle engines.
- 102 Disassemble 2-cycle engine.
- 103 Install a piston.
- 104 Install piston rings.
- 105 Replace a cylinder.
- 106 Replace connecting rods.
- 107 Replace a crankshaft.
- 108 Replace oil seals.
- 109 Mix fuel at appropriate ratio.

Servicing Cooling Systems

- 110 Explain cooling system theory.
- 111 Identify liquid cooling system components.

112 Identify air cooling system components.

Servicing Governor Systems

113 Explain governor system theory.

114 Inspect, adjust, and replace pneumatic system.

115 Inspect, adjust, and replace mechanical system.

Servicing Exhaust Systems

116 Explain exhaust system theory, 2-cycle engine.

117 Diagnose common equipment problems in a damaged exhaust system, 2-cycle engine.

118 Identify exhaust components, 2-cycle engine.

119 Explain exhaust system theory, 4-cycle engine.

120 Identify cleaning procedures for exhaust ports and spark arrestor screens, 2-cycle engine.

Diagnosing and Servicing Small-Engine Equipment

121 Demonstrate the steps of the troubleshooting and repair process.

122 Inspect and service supporting systems and components.

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Produced by the Department of Teaching and Learning.
For further information, please call (757) 263-1070.

Notice of Non-Discrimination Policy

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Title IX Notice: Complaints or concerns regarding discrimination on the basis of sex or sexual harassment should be addressed to the Title IX Coordinator, at the VBCPS Office of Student Leadership, 641 Carriage Hill Road, Suite 200, Virginia Beach, 23452, (757) 263-2020, Mary.Dees@vbschools.com (student complaints) or the VBCPS Department of School Leadership, 2512 George Mason Drive, Municipal Center, Building 6, Virginia Beach, Virginia, 23456 (757) 263-1088, Elizabeth.Bryant@vbschools.com (employee complaints). Additional information regarding Virginia Beach City Public Schools' policies regarding discrimination on the basis of sex and sexual harassment, as well as the procedures for filing a formal complaint and related grievance processes, can be found in School Board Policy 5-44 and School Board Regulations 5-44.1 (students), School Board Policy 4-4 and School Board Regulation 4-4.3 (employees), and on the School Division's website at [Diversity, Equity and Inclusion/Title IX](#). Concerns about the application of [Section 504 of the Rehabilitation Act](#) should be addressed to the Section 504 Coordinator/Executive Director of Student Support Services at (757) 263-1980, 2512 George Mason Drive, Virginia Beach, Virginia, 23456 or the Section 504 Coordinator at the student's school. For students who are eligible or suspected of being eligible for special education or related services under IDEA, please contact the Office of Programs for Exceptional Children at (757) 263-2400, Plaza Annex/Family and Community Engagement Center, 641 Carriage Hill Road, Suite 200, Virginia Beach, VA 23452.

The School Division is committed to providing educational environments that are free of discrimination, harassment, and bullying. Students, staff, parents/guardians who have concerns about discrimination, harassment, or bullying should contact the school administration at their school. Promptly reporting concerns will allow the school to take appropriate actions to investigate and resolve issues. School Board Policy 5-7 addresses non-discrimination and anti-harassment, Policy 5-44 addresses sexual harassment and discrimination based on sex or gender. Policy 5-36 and its supporting regulations address other forms of harassment.

Alternative formats of this publication which may include taped, Braille, or large print materials are available upon request for individuals with disabilities. Call or write The Department of Teaching and Learning, Virginia Beach City Public Schools, 2512 George Mason Drive, P.O. Box 6038, Virginia Beach, VA 23456-0038. Telephone 263-1070 (voice); fax 263-1424; 263-1240 (TDD) or email at Brandon.Martin@vbschools.com.

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