

## Program Overview

The Motorcycle, Marine, and Outdoor Power Products Technician program will prepare you to troubleshoot, service, and repair recreational equipment. Theories of construction and operation of two- and four-cycle engines, new developments in environmental concerns, and engine overhaul are studied, as well as transmissions and chassis service techniques.

Offered at:

**New Richmond**



## Special Feature

This program will give you extensive amounts of time to work in our modern, well-equipped shop.

## Student Profile

As a Motorcycle, Marine, and Outdoor Power Products student, you should be able to:

- Apply scientific principles and technical knowledge
- Use independent judgment
- Visualize using diagrams
- Handle and manipulate equipment
- Work well with others
- Follow precise procedures
- Assume responsibility
- Stand for long periods
- Work with dust, dirt, oil, and grease

## Preparation for Admission

The following experiences will help you prepare for this program:

- Automobile Mechanics
- Chemistry, Physics
- Small Engine Repair
- English/Communications
- Computer Knowledge
- Electricity

## Program Outcomes

Employers will expect you, as a Motorcycle, Marine, and Outdoor Power Products graduate, to be able to:

- Interpret service manual instructions.
- Diagnose and service engines.
- Use microfiche, manuals, and computers to order parts.
- Use electrical test meters, compression and vacuum gauges, and perform operational testing.
- Operate oxyacetylene, stick electrode, and gas tungsten arc welders to join various materials safely.
- Communicate both verbally and in writing.

## Career Outlook

After graduating from the program, you will be ready to start your career as a(n):

- Motorcycle, Marine, and Outdoor Power Products Technician
- Motorcycle Technician
- Outboard Motor Technician
- Small Engine Technician
- Chainsaw Technician
- Lawn and Garden Equipment Technician
- ATV Technician
- Industrial Equipment Technician
- Partsperson
- Small Engine Shop Owner

## Curriculum

Number	Course Title	Credits
<b>Occupational Specific Courses</b>		
31461301	Small Engine and Chassis Repair 1 (WBL) ▲	5
31461302	Small Engine and Chassis Repair 2 (WBL) ▲	4
31461310	Introduction to 12-Volt Electrical Theory	1
31461311	Introduction to Power Trains	1
31461312	Introduction to Mobile Hydraulics	1
31461313	Introduction to Diesel Engines	1
31461335	Small Engine and Chassis Theory ▲	2
31461339	Marine Service ▲	5
31461342	Motorcycle Service ▲	3
31461343	ATV Service ▲	3
32442307	Welding for Mechanics	<u>2</u> 28
<b>Occupational Supportive/General Studies Courses</b>		
32801361	Applied Communications 1	2
32804373	Math 373	2
32809371	Applied Human Relations	<u>2</u> 6

PROGRAM REQUIREMENTS **34**

▲ This course requires a prerequisite and/or corequisite, and must be completed with a grade of "C-" or better.

# Course Descriptions

## 31461301

### Small Engine and Chassis Repair 1 (WBL) - Credits: 5

You will diagnose, troubleshoot, tune up, and overhaul engines and service chassis on lawn and garden equipment and industrial equipment. Practical hands-on experience is gained in engine disassembly, measuring parts for wear, cylinder reconditioning, valve train servicing, governor adjusting, fuel and ignition system servicing, and reassembly techniques. You will service drive and chassis systems to ensure the operation of the complete unit. You will also order repair parts, prepare service report forms, and learn customer relations. COREQUISITES: 31461302 Small Engine and Chassis Repair 2 (WBL) and 31461335 Small Engine and Chassis Theory.

## 31461302

### Small Engine and Chassis Repair 2 (WBL) - Credits: 4

You will diagnose, troubleshoot, tune-up, and overhaul engines and service chassis on chain saws and snowmobiles. Practical hands-on experience is gained in engine disassembly, measuring parts for wear, cylinder reconditioning, valve train servicing, governor adjusting, fuel and ignition system servicing, and reassembly techniques. You will service drive and chassis systems to ensure the operation of the complete unit. You will also order repair parts, prepare service report forms, and learn customer relations. COREQUISITES: 31461301 Small Engine and Chassis Repair 1 (WBL) and 31461335 Small Engine and Chassis Theory.

## 31461310

### Introduction to 12-Volt Electrical Theory - Credits: 1

This course is designed for the learner to understand basic 12-volt electrical circuits, wiring diagrams, starting, charging, and lighting systems. Classroom trainers will be used to apply electrical theory. Using hands-on activities, this course will help the learner to better understand basic 12-volt electrical systems.

## 31461311

### Introduction to Power Trains - Credits: 1

This course will provide a general overview of clutches, sliding gear, and hydrostatic drives. Design, operation, adjustment, and maintenance will be discussed.

## 31461312

### Introduction to Mobile Hydraulics - Credits: 1

This course will provide a practical understanding of mobile hydraulic components. Their design, application, operation and maintenance will be studied. A hydraulic training bench will be used in the classroom.

## 31461313

### Introduction to Diesel Engines - Credits: 1

This course will provide the learner with a basic understanding of the diesel engine. The design and operating principles of the engine, cooling, fuel, and lubrication systems will be examined.

## 31461335

### Small Engine and Chassis Theory - Credits: 2

This course will provide the theory necessary to understand and perform the hands-on tasks of troubleshooting and repairing small gas engines, their drive mechanisms, and their chassis. Theory is presented on the principles of operation and service of 4-cycle, 2-cycle, and small diesel engines in the outdoor power equipment and snowmobile areas. Drive and chassis operation is explained to enable the student to service the complete unit. COREQUISITE: 31461302 Small Engine and Chassis Repair 2 (WBL).

## 31461339

### Marine Service - Credits: 5

This course will provide the theory necessary to understand and troubleshoot the components and systems unique to the outboard marine engine area. Theory will be given in the specialty areas of fuel systems, ignition systems, cooling systems, lubrication systems, and gear cases. You learn to apply basic troubleshooting techniques and repair procedures of small engine service and repair to marine engines with emphasis on practical hands-on experience. PREREQUISITES: 31461302 Small Engine and Chassis Repair 2 (WBL) and 31461335 Small Engine and Chassis Theory.

## 31461342

### Motorcycle Service - Credits: 3

This course provides the theory necessary to understand and troubleshoot the components and systems unique to motorcycles. Theory is given in the specialty areas of carburetion, ignition, transmissions, clutches, and running gear. You will learn to apply basic techniques and procedures of small engine service and repair to motorcycles. This is a lecture- and lab-based course. Specialty areas dealing with transmissions and chassis on these units are covered with practical hands-on experience. Refinishing techniques of fiberglassing, plastic welding, and spray painting are presented. PREREQUISITES: 31461302 Small Engine and Chassis Repair 2 (WBL), 31461335 Small Engine and Chassis Theory, and COREQUISITE: 31461343 ATV Service.

## 31461343

### ATV Service - Credits: 3

This course provides the theory necessary to understand and troubleshoot the components and systems unique to ATVs. Theory is given in the specialty areas of carburetion, ignition, transmissions, clutches, and running gear. You will learn to apply basic techniques and procedures of small engine service and repair to ATVs. This is a lecture- and lab-based course. Specialty areas dealing with transmissions and chassis on these units are covered with practical hands-on experience. Refinishing techniques of fiberglassing, plastic welding, and spray painting are presented. PREREQUISITES: 31461302 Small Engine and Chassis Repair 2 (WBL), 31461335 Small Engine and Chassis Theory, and COREQUISITE: 31461342 Motorcycle Service.

## 32442307

### Welding for Mechanics - Credits: 2

Instruction in safe setup and operation of oxyacetylene cutting (OAC), SMAW (Stick), GMAW (Mig), FCAW, and/or GTAW (Tig) welding in applications related to general industry practices. Selection of appropriate welding processes with a specific emphasis on typical repair situations including metal identification will be stressed.

## Graduate Employment Information

(WITC Graduate Survey Responses 2005-2006)

Number of graduates	11	Number employed	10	% employed in WITC district	100%
Number of responses	11	Percent employed	91%	Range of yearly salary	\$18,199-\$51,476
Number available for employment	11	Employed in related field	5	Average yearly salary	\$30,782

*career vision*