

## Program Overview

The Motorcycle, Marine, and Outdoor Power Products Technician program will prepare the student 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.

Campus:  
New Richmond



## Special Feature

WITC is an accredited Equipment & Engine Training Council (EETC) testing facility providing students with the opportunity to become industry certified.

## Admission Requirements

Students in this program must:

- Complete application form and submit with fee (fee waiver may apply if previously submitted)
- Complete Accuplacer entrance assessment to determine placement (waiver may apply with acceptable alternative test scores and/or postsecondary degree completion)
- Complete admissions interview with a WITC counselor (above requirements should be completed prior to interview)

## Student Profile

Motorcycle, Marine, and Outdoor Power Products students 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

Students should strive to reach a comfort level in the following courses or skills:

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

## Program Outcomes

Employers will expect Motorcycle, Marine, and Outdoor Power Products (MMOPP) Technician graduates to be able to:

- Interpret service manual instructions
- Diagnose equipment failure problems
- Perform repairs, replacements, and maintenance on MMOPP
- Order new or replacement parts for MMOPP using a variety of media
- Perform diagnostic testing, using electrical test meters and compression and vacuum gauges
- Document repair procedures accurately and to the satisfaction of the customer
- Apply safety procedures and policies

Collegewide outcomes and indicators will also be addressed to develop personal awareness, career effectiveness, and professionalism. See page 5 for a list of collegewide outcomes and indicators.

## Career Outlook

Typical positions available after graduation include:

- 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 ▲       | 5         |
| 31461302   | Small Engine and Chassis Repair 2 ▲       | 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 <sup>▸</sup></b> |   |           |
| 32801361   | Applied Communications 1                  | 2         |
| 32804373   | Math 373                                  | 2         |
| 32809371   | Applied Human Relations                   | <u>2</u>  |
|  |   | 6         |
|  | <b>PROGRAM REQUIREMENTS</b>               | <b>34</b> |

▲ Requires a prerequisite and/or corequisite that must be completed with a grade point of 2.0 or better.

▸ See page 40 for General Studies course descriptions.

# Course Descriptions

(See page 40 for General Studies course descriptions)

## 31461301

### Small Engine and Chassis Repair 1 - 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 and 31461335 Small Engine and Chassis Theory.

## 31461302

### Small Engine and Chassis Repair 2 - 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 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 provides 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.

## 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 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, 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, 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.

Gainful employment information is available at this link: <http://www.witc.edu/pgmpages/mmopp/career.htm>. This information is provided as a federal requirement in an effort to help students make informed decisions related to the costs and potential employment in a chosen field.

## Graduate Employment Information

(WITC Graduate Survey Responses 2009-2010; for most recent data, go to [witc.edu](http://www.witc.edu))\*

|                                 |    |                           |     |                             |           |
|---------------------------------|----|---------------------------|-----|-----------------------------|-----------|
| Number of graduates             | 14 | Number employed           | 7   | % employed in WITC district | 33%       |
| Number of responses             | 11 | Percent employed          | 78% | Range of yearly salary      | ~*        |
| Number available for employment | 9  | Employed in related field | 3   | Average yearly salary       | \$23,918* |

\*Average yearly salary based on composite of graduates from Wisconsin's 16 technical college districts (including WITC graduates). Range of yearly salary not available.

*career vision*