

Motorcycle, Marine and Outdoor Power Products Technician

Program Number: 31-461-2

One-Year Technical Diploma

Transportation Program Cluster

Center for Construction, Manufacturing, Apprenticeship & Transportation

Program offered at Madison Campuses

For information call: (608) 246-6102 or
(800) 322-6282 Ext. 6102

About the Program

If you have the ability to take something apart, make an adjustment or two, reassemble it and have it work better than ever, you can apply that talent to all kinds of small engines—outboard motors, motorcycles, snowmobiles, chain saws, lawn and garden equipment and even some construction equipment. The marine/motorcycle/air-cooled engine field has experienced phenomenal growth in the past and is expected to grow at an even faster rate in coming years. Career opportunities exist in all areas of the country in both urban and rural areas.

This program offers detailed instruction in the operation, maintenance and repair of internal combustion engines and the equipment they power. Students study electrical systems and power trains; learn welding, machining, measuring, sharpening and fabrication techniques; and gain hands-on experience working on a wide variety of engines and equipment.

Service shop management classes provide students with basic principles, including financial, operational and marketing, to set up their own small engine dealership or service shop.

Unique Requirements for Graduation

30 credits with a GPA of 2.0 (C) or above.

Curriculum

First Semester		Credits	Hrs/week Lec-Lab
32-420-330	Metal Processes 1	2	3-1
31-461-324	Basic Two- and Four-Cycle EnginesΔ	5	8-12
31-461-325	Engine RebuildingΔ	5	8-12
31-461-328	Small Engine Lab*	1	0-4
10-104-189	Customer Relations	2	2-0
Semester Total		15	

Second Semester		Credits	Hrs/week Lec-Lab
32-420-331	Metal Processes 2	2	3-1
31-461-326	Electrical and Hydraulic SystemsΔ	5	8-12
31-461-327	Power Transmissions and MMOPPΔ	5	8-12
31-461-328	Small Engine Lab*	1	0-4
10-102-134	Business Organization & Mgmt	2	3-0
Semester Total		15	

*Course is taken twice by each student, once in each semester.

ΔCourse is nine weeks in length.

Note: Students are placed in English or mathematics courses based on their scores on the COMPASS or ASSET test or on completion of the appropriate prerequisites.

Program Courses

32-420-330 Metal Processes 1 2 credits

This basic metalworking course is designed to provide the student with instruction in metalworking processes. Instructional units include safety, layout and measuring, machining, oxy-acetylene welding, brazing and cutting, arc welding and properties of metals.

32-420-331 Metal Processes 2 2 credits

This study of metals provides instruction in sheetmetal work, soldering and brazing, forging and heat treatment, grinding, tool sharpening, metal casting, MIG and TIG welding, metal fabrication and the repair of metal objects. Prerequisite: 32-420-330.

31-461-324 Basic Two- and Four-Cycle Engines 5 credits

This nine-week course covers the principles of small internal combustion engines, including two-cycle and four-cycle. Design, construction, engine testing, and diagnosing are all covered. Students become familiar with the tools, machines and equipment that are used for engine repair work in the power equipment shop. Corequisites: 31-461-325 and first semester 31-461-328.

31-461-325 Engine Rebuilding 5 credits

This nine-week course covers disassembly, repairing, re-assembly and engine break-in. Other topics covered include engine tune-up, carburetion and electrical systems as well as snowmobiles, chain saws, sharpening and balancing of rotating elements are included. Corequisites: 31-461-324 and first semester 31-461-328.

31-461-326 Electrical and Hydraulic Systems 5 credits

This nine-week course covers electrical systems in great detail. Students study the basic principles of electricity and magnetism. The proper use of meters is covered. Students learn how to service and troubleshoot charging, ignition, starting, safety interlocks and instruments. Basic hydraulic systems also are covered. Prerequisites: 31-461-324 and 31-461-325.

31-461-327 Power Transmissions and Motorcycle, Marine and Outdoor Power Products 5 credits

This nine-week course covers power transmissions of all of the above equipment. Topics include transmissions, clutches, hydro transaxles, wheels, tires, belts, chains and stern drives. ATVs also are studied in detail. Prerequisite: 31-461-326.

31-461-328 Engine Lab 1 credit

Students work on individual projects that have been approved by the instructor, such as building a motorcycle engine stand or developing advanced technical knowledge or skill in any of the motorcycle, marine or small engine service areas. First semester Corequisites: 31-461-324 and 31-461-325; second semester prerequisite: first semester of 31-461-328.

31-461-330 Service Shop Management 2 credits

Covers basic principles of setting up and operating a small engine shop. Students study the financial, operational and marketing aspects of a small engine dealership or service shop. Students work in groups to set up their own small engine service shop business in a written report. Prerequisites: second semester standing or completion of 31-461-324 and 31-461-325.

Career Potential:

- **Outdoor Power Equipment Technicians**

Work on marine, outboard, motorcycle and snowmobile power equipment; lawn and garden equipment; construction equipment; chain saws; golf course equipment; and other small engines.

- **Service Writer**
- **Parts Manager**
- **Factory Service Representative**
- **Power Equipment Salesperson**

More detailed and updated information on this program may be available at: malcmadison.edu. The college reserves the right to make changes in the regulations and courses announced in this publication without notice.

Madison Area Technical College provides equal opportunity in education and employment.