

Motorcycle, Marine and Outdoor Power Products Technician

Program Number: 31-461-2

One-Year Technical Diploma

Transportation Program Cluster

School of Applied Technology

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.

Application Process

To apply to the program, students must submit a complete application. A completed application consists of (1) Application; (2) Application fee; and (3) High school transcripts – or - GED/HSED test scores – or – college transcript showing an Associate, Bachelor, or higher degree from an institution other than Madison College.

Unique Requirements for Admission

There are no unique requirements for admission to this program.

Unique Requirements for Graduation

Students must meet two 2.0 GPA requirements to graduate. (1) GPA for entire program must be 2.0 or above; (2) GPA of combined occupational courses (461) must be 2.0 or above.

Curriculum

The courses listed below outline the requirements for graduation for students entering this program in the 2012-2013 academic year. Requirements for graduation may vary depending on the semester in which a student is admitted to their program. Current/continuing students should consult their degree progress report available through their student center account for specific graduation requirements. Program requirements are subject to change.

		Hrs/week	
		Credits	Lec-Lab
First Semester			
32-420-330	Metal Processes 1	2	3-1
31-461-324	Basic Two- and Four-Cycle Engines*	5	8-12
31-461-325	Engine Rebuilding*	5	8-12
31-461-328	Small Engine Lab 1	1	0-4
10-104-189	Customer Relations	2	2-0
Semester Total		15	
Second Semester			
32-420-331	Metal Processes 2	2	3-1
31-461-326	Electrical and Hydraulic Systems*	5	8-12
31-461-327	Power Transmissions and MMOPP*	5	8-12
31-461-329	Small Engine Lab 2	1	0-4
10-102-134	Business Organization & Mgmt	2	3-0
Semester Total		15	

* Meets for 9 weeks.

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 prerequisite/s.



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. Co-reqs: 1st semester core must be taken together: 2 & 4 Cycle Engines (31-461-324), Engine Rebuilding (31-461-325) and Small Engine Lab (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. Co-reqs: 1st semester core must be taken together: 2 & 4 Cycle Engines (31-461-324), Engine Rebuilding (31-461-325) and Small Engine Lab (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. Pre-reqs: 1st semester core. Co-reqs: 2nd semester core must be taken together: Elect. & Hydraul. Sys. (31-461-326); Power Trans (31-461-327); and Small Eng. Lab 2 (31-461-329).

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. Pre-reqs: 1st semester core. Co-reqs: 2nd semester core must be taken together: Elect. & Hydraul. Sys. (31-461-326); Power Trans (31-461-327); and Small Eng. Lab 2 (31-461-329).

31-461-328 Small Engine Lab 1 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. Co-reqs: 1st semester core must be taken together: 2 & 4 Cycle Engines (31-461-324), Engine Rebuilding (31-461-325) and Small Engine Lab 1 (31-461-328).

31-461-329 Small Engine Lab 2 1 credit

Students continue working 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. Pre-reqs: 1st semester core. Co-reqs: 2nd semester core must be taken together: Elect. & Hydraul. Sys. (31-461-326); Power Trans (31-461-327); and Small Eng. Lab 2 (31-461-329).

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: madisoncollege.org. 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.

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