

# POWERSPORTS TECHNOLOGY CERTIFICATE - 30 CREDITS

## About this program

Students who wish to become skilled powersports mechanics must be capable of diagnosing mechanical failures quickly and accurately if they are to be in a position to repair a job at a fair salary return. Most types of two- and four-cycle small engines that are currently used to power lawn mowers, snowblowers, generators, garden tractors, rototillers, snowmobiles, ATVs, and personal watercraft and marine will be covered. Students who perform satisfactorily may find employment as service technicians, sales personnel and factory representatives, or they may wish to enter business for themselves. This program requires a mechanical aptitude and the ability to read and comprehend technical service manuals, understand and perform a variety of diagnostic procedures, and work well with fellow employees and customers. Many industry training opportunities are available.

## Program outcomes

1. Demonstrate professionalism and related soft skills.
2. Apply theory of vehicle operating systems.
3. Diagnose vehicle operating systems.
4. Repair vehicle operating systems.
5. Interpret service information.
6. Exhibit safety practices and procedures.

## Curriculum overview

<b>Crds</b>	<b>Requirement type</b>
27	Required courses
3	Restricted electives in course types
<b>30</b>	<b>Total</b>

**Developmental courses note:** A student may be required to enroll in developmental courses in reading, writing and math. A student's scores on the Accuplacer assessment will determine enrollment in developmental courses. The purpose of developmental courses is to prepare students for the demands of a college-level curriculum. *Credits may vary.*

**Accreditation:** Minnesota State Community and Technical College is accredited by the Higher Learning Commission, a regional accreditation agency recognized by the U.S. Department of Education. The Higher Learning Commission 230 South LaSalle Street, Suite 7-500 Chicago, IL 60604-1411 <http://www.ncahigherlearningcommission.org> Phone: 312.263.0456 / 800.621.7440

## Curriculum requirement details

### Required courses

Course	Crds
PWST1000 - Introduction to PowerSports .....	3
PWST1002 - Snowmobile, Off Road Vehicle and Motorcycle Maintenance .....	3
PWST1014 - Personal Watercraft and Marine Engine Maintenance .....	3
PWST1017 - Fuel Systems I .....	3
PWST1021 - Ignition, Charging and Starter Systems .....	3
PWST1025 - Fuel Systems II .....	3
PWST1080 - Snowmobile Engines .....	3
PWST1115 - Electrical Foundations .....	3
PWST2304 - Motorcycles I .....	3

### Other requirements or restricted electives

**3 credits from these Course Types:**

- General Education w/MnTC Goals
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## Course summaries

**PWST1000 - Introduction to PowerSports ..... (3 credits)**

This course is the study of powersports occupational safety, shop orientation procedures, and power and hand tool usage. The use of shop equipment applications, fasteners, measuring instruments and service literature will be addressed, along with appropriate service department etiquette. Two- and four-stroke engine theory along with their proper lubricants will be covered.

**PWST1002 - Snowmobile, Off Road Vehicle and Motorcycle Maintenance ..... (3 credits)**

This course is designed to train the student in proper maintenance techniques for on- and off-road land-based recreational vehicles. Students are encouraged to bring their personal recreational vehicle(s) or use the up-to-date industry products that the college offers or both. Trailer maintenance also will be covered. This is an excellent course for getting equipment ready for an upcoming winter or summer season.

**PWST1014 - Personal Watercraft and Marine Engine Maintenance ..... (3 credits)**

This course is designed to train the student on proper maintenance techniques for water-based recreational vehicles. Students are encouraged to bring their personal boats, outboards or personal watercraft or use the up-to-date industry products that the college offers, or both. This is an excellent course for getting personal watercraft and boats ready for an coming spring.

**PWST1017 - Fuel Systems I ..... (3 credits)**

The Fuel Systems I course covers the theory and operation of basic fuel systems and the fuels that they deliver. This is the first of two fuel systems courses and will give students the solid foundation they will need to understand the more advanced systems in their future course work.

**PWST1021 - Ignition, Charging and Starter Systems ..... (3 credits)**

This course is a continuation of the Electrical Foundation course and will cover the study of electrical systems used on power sports equipment. It will focus primarily on ignition and starting systems. Students will learn and apply the theories of ignition, induction, charging and starting systems. Emphasis will be on proper use of test equipment along with the generation and flow of electricity. Students will apply the theories of ignition, induction, charging and starting systems.

**PWST1025 - Fuel Systems II ..... (3 credits)**

Fuel Systems II is the second in a two-part course series covering two- and four-cycle off-road and marine products. Students will apply the theories of fuel system operation to both two- and four-stroke engines. Included in this course will be inspection and troubleshooting, along with seasonal service requirements and fuel quality testing.

**Prerequisites:**

**PWST1080 - Snowmobile Engines ..... (3 credits)**

This course covers snowmobile engine designs, component identification and engine service procedures, as well as snowmobile fuel systems and service.

**PWST1115 - Electrical Foundations ..... (3 credits)**

The Electrical Foundation course will cover the theory and practical operation of electricity. Multi-meters and test instruments will be used, giving students the solid foundation they will need to understand the more advanced electrical systems in their future course work.

**PWST2304 - Motorcycles I ..... (3 credits)**

This course focuses on various types of four-cycle motorcycle and ATV engines. Students will learn engine service and maintenance procedures. Students will also learn about motorcycle fuel systems and related components.

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## Program Plan — "PowerSports Technology"

Locations: Detroit Lakes

### 1st Fall Term (15 credits)

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#### Courses

Course	Crds
PWST1000 - Introduction to PowerSports .....	3
PWST1002 - Snowmobile, Off Road Vehicle and Motorcycle Maintenance .....	3
PWST1017 - Fuel Systems I .....	3
PWST1115 - Electrical Foundations .....	3
PWST2304 - Motorcycles I .....	3

### 1st Spring Term (15 credits)

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#### Courses

Course	Crds
PWST1014 - Personal Watercraft and Marine Engine Maintenance .....	3
PWST1021 - Ignition, Charging and Starter Systems .....	3
PWST1025 - Fuel Systems II .....	3
PWST1080 - Snowmobile Engines .....	3

#### 3 credits in one or more of the following:

General Education w/MnTC Goals

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