

Proposal for New Instructional Program

METROPOLITAN COMMUNITY COLLEGE

NEW INSTRUCTIONAL PROGRAM PROPOSAL

I. DESCRIPTIVE INFORMATION

- Institution Name: Metropolitan Community College (MCC)
- Proposed Program Name: Powersports and Outdoor Power Technology
- Degrees/credentials to be awarded graduates of the program: Associate of Applied Science Degree (A.A.S)
- Other programs offered in this field by this institution: not applicable
- CIP Code: 47.0606
- Administrative units for the program: Industrial and Automotive Technology
- Proposed delivery sites/types of delivery: MCC, South Omaha Campus/classroom and lab
- Date approved by governing board: The Metropolitan Community College board of Governors approved this program proposal on July 26th, 2022
- Proposed date (term/year) the program will be initiated: Winter Quarter 2022
- Description and purpose of the proposed program:

Pending Commission approval, MCC's Powersports and Outdoor Power Technology program will prepare students to maintain, troubleshoot and repair equipment found in the powersport industry, including marine, snowmobile, motorcycle, all-terrain vehicle (ATV) and lawn equipment. In this program, students will gain the knowledge and hands-on experience to perform competently at the dealership level and be trained to gain the soft skills to help students move toward the goal of management, manufacturer technical service representative or business ownership. Students will perform services on modern products using specialty tools and factory test equipment. Along with taking OEM factory certification exams, students learn how to plan and perform repairs according to manufacturers' recommended procedures. The Powersports and Outdoor Power Technology degree program offers students training on equipment and products from all aspects of industry. Students will receive training in outdoor/lawn and garden equipment, all-terrain vehicles, snowmobiles, motorcycles, and marine equipment. While enrolled in the program, students will earn industry certifications from manufacturers including: Honda, Yamaha, Polaris, Mercury, Stihl, and Briggs and Stratton.

One comprehensive degree program includes:

- Motorcycle technician training

- ATV training
- Personal watercraft training
- Snowmobile technician training
- Side by Side and UTV training
- Outboard motor training
- Commercial Lawn and Maintenance equipment training
- Handheld Outdoor Power Equipment training

Students will learn:

- Diagnose and repair snowmobiles, motorcycles, personal watercraft, outboard motors, chain saws, ATVs, UTVs, lawn and garden equipment, and outdoor power equipment
- Understand operating principles for two- and four-cycle engines
- Understand basic electricity
- Service and maintain fuel and carburetor systems, transmissions, and power train systems
- Perform complete engine overhauls and basic engine tune-ups
- Manage and inventory parts
- Perform basic chassis tune-ups
- Utilize computers in the workplace
- Effectively communicate with customers and peers

Program Requirements:

Powersports and Outdoor Power Technology

Award: Associate of Applied Science Degree

Program Location: MCC South Omaha Campus

Graduation Requirements:

General education	22.5 credit hours
Major requirements	71.5 credit hours
Total credit hours required	94 credit hours

General education requirements:

The following General Education courses are recommended: ENGL 1225, MATH 1240, and HMRL 1010.

Major Requirements:

PSPT 1000 Basic Engine Principles 1	4.5 credit hours
PSPT 1100 Introduction to Engine Electrical Systems	4.5 credit hours
PSPT 1110 Introduction to Powersports Fuel Systems	4.5 credit hours
PSPT 1200 ATV I	6.0 credit hours
PSPT 1210 Snowmobile Systems and Technology	6.0 credit hours
PSPT 1300 Outdoor Power Equipment	4.5 credit hours
PSPT 1310 Engine Service and Rebuild	4.5 credit hours
PSPT 1400 Motorcycle Electrical Systems	4.0 credit hours
PSPT 1410 Motorcycle Fuel Systems	4.0 credit hours
PSPT 1420 Motorcycle Power Transmissions	4.5 credit hours
PSPT 1430 Motorcycle/ATV Tune-Up	4.5 credit hours
PSPT 2100 Marine Electrical Systems	4.0 credit hours
PSPT 2110 Marine Fuel Systems	4.0 credit hours
PSPT 2120 Marine Engine Systems	6.0 credit hours
PSPT 2130 Marine Drive Systems	6.0 credit hours

Course Descriptions:

PSPT 1000 Basic Engine Principles I 4.5 credit hours

Learners study the history, development, and engine operating principles as they relate to marine and recreational engine mechanics. This course familiarizes learners with basic repair of these engines.

PSPT 1100 Introduction to Powersports Electrical Systems 4.5 credit hours

Learners study theory of electricity and magnetism. Also included are units on wiring, circuitry, and troubleshooting, ignition systems, charging systems, and their application. This is a basic electricity course, which is built on throughout the program. The course introduces the learner to electrical theory, wiring schematics, symbols, and the basic tools used to test electrical components.

PSPT 1110 Introduction to Powersports Fuel Systems 4.5 credit hours

This course will introduce the student to basic carburetors, fuel pumps and EFI systems used on various powersports equipment. The focus is on component identification and the function of the component in the system. This course also covers the current fuel recommendations and emissions for today's modern powersports equipment.

PSPT 1200 ATV Systems and Technology 6.0 credit hours

This course covers ATV engines, clutches, transmissions, drivelines, and suspensions/frames. It includes all the makes and models found in the industry. The learner is able to diagnose problems and repair the ATV per manufacturer specification. This course provides learners with hands-on experience.

PSPT 1210 Snowmobile Systems and Technology 6.0 credit hours

This course is an introduction to snowmobiles including the study of engine theory as it applies to snowmobiles, fuel systems, and drive system inspection and repair. This course covers snowmobile maintenance on suspension systems including high pressure gas shock rebuilding and chassis adjustments. It also covers electrical repairs and tune ups as they apply to snowmobiles. Learners are exposed to different manufacturers' test equipment

PSPT 1300 Outdoor Power Equipment 4.5 credit hours

This course includes the study of basic clutches, drive mechanisms, outdoor power equipment, and steering systems. Transmissions and drive systems as they apply to various manufacturers are also covered. This is a beginning look at the many drive systems used on lawn and garden equipment. This course also includes basic repair on hand held outdoor power equipment.

PSPT 1310 Engine Service and Rebuild 4.5 credit hours

Learners overhaul and repair lawn, garden, and recreational engines under shop conditions according to manufacturers' recommendations. Learners gain valuable experience in shop conditions doing complete engine overhauls on the many types of engines used.

PSPT 1400 Motorcycle Electrical Systems 4.0 credit hours

This course teaches the learner about different types of ignition, charging, and starting systems, as well as wiring found on motorcycles and mopeds. The focus is on theory and application of test equipment and product knowledge using manufacturer service manuals. Hands-on troubleshooting of the complete electrical system on the motorcycle or moped is also stressed.

PSPT 1410 Motorcycle Fuel Systems 4.0 credit hours

Learners are able to identify, repair, or replace fuel delivery components and rebuild all types of carburetors found on motorcycles. Oil injection, fuel injection, and turbo charging are covered. The focus is on today's fuel system technology, carburetor rebuilding, and synchronization of multi-carburetors.

PSPT 1420 Motorcycle Power Trans 4.5 credit hours

This course studies motorcycle engines, clutches, transmissions, and final drives found on Japanese and U.S. built motorcycles; full size motorcycles, mopeds, and dirt bikes are included. Supplied with a motorcycle, necessary tools, and a service manual, learners explain the theory of operation, diagnose problems, and repair the unit per manufacturer's specifications. This shop course provides time for the learner to gain hands-on experience. Work includes engine rebuilding including transmission, valves, and diagnostic practice.

PSPT 1430 Motorcycle/ATV Tune-Up 4.5 credit hours

After completion of this course, learners are able to identify maintenance services and apply previously studied two- and four-cycle engine principles to motorcycles and ATVs. Focus includes real life shop experience such as dealing with customer complaints, hands-on maintenance, and troubleshooting of motorcycles and ATVs.

PSPT 2100 Marine Electrical Systems 4.0 credit hours

This course studies electrical theory and ignition system troubleshooting. Topics include electrical theory of operation, electrical symbols, components used, testing devices, and troubleshooting. Practical use of electronic symbols and theory, hands-on testing, and factory methods/manuals to solve service problems are used. Several different models of outboard motors and stern drive engines are used for hands-on experience. Learners work on starters and charging systems used in the marine field. Factory manuals, test procedures, and troubleshooting are covered.

PSPT 2110 Marine Fuel System 4.0 credit hours

This course includes various electronic fuel injection, direct fuel injection, carburetors, fuel pumps, fuel tanks, and oil injection systems. Students learn to identify, repair, or replace fuel system components. This course focuses on troubleshooting and synchronizing the carburetors and oil injection pumps to engine needs. Instruction includes classroom instruction and application of factory recommended service procedures. Learners receive hands-on instruction on shop practices and product maintenance using tried and proven methods of

PSPT 2120 Marine Engine Systems

6.0 credit hours

Learners study engine designs and theory of operation. Overhaul, repair, and service are included. All engine components are covered in the instruction. The focus is on engine designs and factory methods used to overhaul, measure, and recondition all the internal parts of a modern marine power plant. Mercury, Johnson/Evinrude, Honda, Yamaha, Mercruiser, and Volvo Penta are covered. Personal and shop safety are emphasized. This course provides hands-on experience.

PSPT 2130 Marine Drive Systems

6.0 credit hours

This is a course in advanced methods of marine drive repair. Bombardier Recreational Division, Mercury Marine, Mercruiser Marine, Volvo Pent, and Yamaha are studies. The focus is on gear case designs, measurements, overhaul procedures, and reconditioning of all the parts in the modern marine drives. Water pumps and maintenance procedures are thoroughly reviewed.

II. REVIEW CRITERIA

A. Centrality to Role and Mission

The mission of the college is “Metropolitan Community College delivers relevant, student-centered education to a diverse community of learners.” By partnering with local industry and national manufacturers, MCC is providing students with an opportunity to earn and learn industry relevant curriculum and gain practical job experience, and entry level employment at local dealers and businesses.

B. Evidence of Need and Demand

1. Need for the Program

Overall employment of small engine mechanics is projected to grow 9 percent from 2020 to 2030, about as fast as the average for all occupations.

About 8,600 openings for small engine mechanics are projected each year, on average, over the decade. Many of those openings are expected to result from the need to replace workers who transfer to different occupations or exit the labor force, such as to retire.

Employment

Much of the projected employment growth in these occupations is due to recovery from the COVID-19 recession that began in 2020.

Boat engines, as well as engines and parts for outdoor power equipment, have become more efficient—but also more sophisticated. Thus, maintaining and repairing these engines and parts will require more workers.

Motorcycle mechanics adept at repairing electric motorcycles, new to the commercial market, may see increasing opportunities over the decade.

Mechanics who work on outdoor power equipment and other small engines will continue to be in demand because of the widespread use of these engines in gardening, tree work, landscape construction, and similar activities.

Employment projections data for small engine mechanics, 2020-30

Occupational Title	Employment 2020	Projected Employment 2030	Change, 2020-30	
			%	Numeric
Small engine mechanics	69,000	75,400	9	6,500
Motorboat mechanics and service technicians	21,700	24,600	13	2,900
Motorcycle mechanics	14,000	15,400	10	1,400
Outdoor power equipment and other small engine mechanics	33,300	35,500	7	2,200

SOURCE: U.S. Bureau of Labor Statistics, Employment Projections program

Below is partial representation of local business owners and services managers interviewed in determining the local need for powersports technicians within MCC's 4 county service area.

- Omaha Marine Center
- Valley Marine
- Victory Marine
- Johnson Cycles and Auto
- Dillon Brothers Powersports
- Flywheels Powersports
- ATV Motorsports
- All Season Motorsports & Machine
- Hats Off Motorsports & Marine
- Robertson Cycle & Marine
- Defiance Harley Davidson
- Ted's Mower Service
- Ryker Powersports
- Ironhorse Golf Club
- Edwards Motorsports
- Olsen's Outdoor Power

2. Demand for the Program

Based upon local industry feedback regarding the need to hire trained technicians and similar programs such as MCC’s Toyota T-TEN, Mopar CAP, and MCC’s Auto Collision cohort program the following represents the number of students expected to enroll in the program in each of the first five years of operation:

	Year 1	Year 2	Year 3	Year 4	Year 5
Cohort Degree Path	12	14	18	18	18
Traditional Degree Path (Evenings)	10	10	10	12	12
Career Academy	12	14	14	14	14

C. Adequacy of Resources

1. Faculty and Staff Resources

To sufficiently operate the proposed Powersports and Outdoor Power Technology program, 1 full-time faculty will be necessary. In addition, 1 adjunct faculty will need to be hired to offer a Powersports and Outdoor Power traditional program in the evenings.

2. Physical Facilities

MCC will offer this program in existing lab and classroom space in the former automotive technician area at the South Campus Mahoney building to house the new program

Space Description	Existing SF
General Purpose Classrooms / Computer Labs	7,522
Common / Shared Spaces	3,706
Administration Faculty Offices	1,646
Auto Technology Lab Spaces	13,164
Total SF*	26,038

3. Instructional Equipment and Informational Resources

Metropolitan Community College is currently in discussions with industry global leaders, such as Polaris, Yamaha Motorsports, Mercury Marine, Briggs and Stratton, and Stihl. Each manufacturer is prepared to offer MCC's Powersports and Outdoor Power Technology program (once approved by the Coordinating Commission) the following:

- a. Manufacture specific curriculum
 - Polaris Master Service Dealer (MSD) Technician – Bronze and Silver Level
 - Yamaha Technical Academy - Bronze curriculum
 - Briggs and Stratton Basic Small Engine Certification
 - Mercury Certified Technician
- b. Instructional Materials
- c. OEM Product / Equipment
- d. OEM Specialty Tools

4. Budget Projections

Budget Category	Year 1	Year 2	Year 3	Year 4	Year 5
1.0 FTE Faculty Salary	73,000	75,000	78,000	81,000	83,000
1.0 FTE Benefits	29,200	30,000	31,200	34,400	33,200
1 Adjunct Salary and Benefits	19,800	21,500	25,400	26,000	26,000
Lab Equipment	95,000	70,000	50,000	20,000	20,000
Small Hand Tools	35,000	35,000	10,000	10,000	10,000
Consumables /Supplies	15,000	10,000	10,000	10,000	10,000

D. Avoidance of Unnecessary Duplication

1. Similar programs offered in the State of Nebraska
 - Southeast Community College, Lincoln Nebraska
2. Similar programs offered within the states that are members of MW Higher Ed. Compact
 - Iowa Lakes Community College, Estherville, IA
 - Mitchell Technical College, Mitchell, SD
 - Alexandria Technical and Community College, Alexandria, MN
 - Central Lakes College, Brainerd, MN
 - Hennepin Technical College, Hennepin, MN
 - Minnesota State Community and Technical College, Detroit Lakes, MN
 - Northwoods Technical College, Rice Lake, WI
 - Wisconsin Technical College, Madison, WI

- Southeastern Illinois College, Harrisburg, IL
- State Technical College of Missouri, Linn, MO
- Ohio Technical College- Power Sport Institute, Cleveland, OH
- University of Northwestern Ohio, Lima OH (4 year college but offers 2 year degree)

E. Consistency with the Comprehensive Statewide Plan for Postsecondary Education

Major Statewide Goals

The proposed Powersports and Outdoor Power program is consistent with the statewide goals featured in Nebraska's Comprehensive Statewide Plan for Postsecondary Education by:

- Meeting the needs of students: The Powersports and Outdoor Power program is currently not offered in MCC's 4 county service area. Thusly, students living MCC's 4 county service area must travel seeking education and training in this pathway.
- Meeting the needs of the state: As part of the investigation of the need process, twenty local business owners and service managers throughout MCC's 4 county service area were interviewed. During the interview process, each local business owner confirmed that there is currently a lack of service technicians and a formal education and training program would be of great value to local businesses.
- Meeting educational needs through partnerships and collaboration: As identified within this document, MCC is currently in discussions with industry global leaders and will seek formal agreements and offer manufacturer specific education and training to students enrolled in the Powersports and Outdoor Power degree path. MCC is currently exploring partnerships with Polaris, Yamaha Motorsports, Mercury Marine, Stihl, Briggs and Stratton, and Kohler.
- Facilities Planning to Meet Educational Needs: MCC will be able to offer this program in classroom and lab space previously occupied by MCC's Automotive Technology program.