STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK

MASTER SYLLABUS

COURSE NUMBER – COURSE NAME
MSPT 101 - Powersports Service

Created by: Mark R. Hill

Updated by: Christopher Mayville

Canino School of Engineering Technology

Department: Mechanical & Energy Technologies

Semester/Year: Fall 2018

A. **TITLE**: Powersports Service

B. **COURSE NUMBER:** MSPT 101

C. **CREDIT HOURS: 3 credit hour(s) per week for 15 weeks**

☒ One hour (50 minutes) of lecture per week Twice
☒ Two to three hours of lab or clinical per week Once
☐ Two hours of recitation per week
☐ 40 hours of internship

D. **WRITING INTENSIVE COURSE**: Yes ☐ No ☒

E. **GER CATEGORY: None:** ☒ **Yes:** GER
***If course satisfies more than one*:** GER

F. **SEMESTER(S) OFFERED: Fall** ☒ **Spring** ☐ **Fall & Spring** ☐

G. **COURSE DESCRIPTION:**

This course is an introduction to the general theories of system and maintenance of powersports vehicles, including motorcycles, snowmobiles and all-terrain vehicles.

H. **PRE-REQUISITES: None** ☒ **Yes** ☐ **If yes, list below:**

CO-REQUISITES: None ☒ **Yes** ☐ **If yes, list below:**

I. STUDENT LEARNING OUTCOMES: (*see key below*)

By the end of this course, the student will be able to:

Course Student Learning Outcome [SLO]	***Program Student Learning Outcome [PSLO]***	***GER*** *[If Applicable]*	***ISLO & SUBSETS***	
a. Perform routine maintenance procedures associated with powersports vehicles	MSPT SO 2		ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
b. Compare and contrast two and four cycle engine operation theories			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
c. Diagnose and repair powertrain assembly problems	MSPT SO 2 MSPT SO 3		ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
d. Apply the fundamentals of carburetion to small, high speed internal combustion engines			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets

			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets
			ISLO ISLO ISLO	Subsets Subsets Subsets Subsets

KEY	Institutional Student Learning Outcomes [ISLO 1 – 5]
ISLO #	ISLO & Subsets
1	**Communication Skills** Oral [O], Written [W]
2	**Critical Thinking** *Critical Analysis [CA] , Inquiry & Analysis [IA] , Problem Solving [PS]*
3	**Foundational Skills** *Information Management [IM], Quantitative Lit,/Reasoning [QTR]*
4	**Social Responsibility** *Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]*
5	**Industry, Professional, Discipline Specific Knowledge and Skills**

*Include program objectives if applicable. Please consult with Program Coordinator

J. **APPLIED LEARNING COMPONENT:** Yes ☒ No ☐

If YES, select one or more of the following categories:

- ☒ Classroom/Lab
- ☐ Internship
- ☐ Clinical Placement
- ☐ Practicum
- ☐ Service Learning
- ☐ Community Service
- ☐ Civic Engagement
- ☐ Creative Works/Senior Project
- ☐ Research
- ☐ Entrepreneurship (program, class, project)

K. **TEXTS:**

Modern Motorcycle Technology Third Edition by Edward Abdo, Cengage Learning

L. **REFERENCES:**

Polaris Dealer Website, Yamaha Dealer Website, Yamaha Motor Training Website

M. **EQUIPMENT: None** ☐ **Needed:** Standard Powersports laboratory equipment

N. **GRADING METHOD:** A-F

O. **SUGGESTED MEASUREMENT CRITERIA/METHODS:**

Quizzes, exams, homework, laboratory activities, laboratory performance exams, and laboratory participation

P. **DETAILED COURSE OUTLINE:**

I. Introduction
1. Class procedures and policies
2. Opening discussion

II. Introduction to motorcycles, ATV's and snowmobiles
1. The role of qualified technicians
2. Styles and designs

III. Engines
1. Engine parts
2. Four stroke cycle engine operation
3. Two stroke cycle engine operation

IV. Engine powered characteristics
1. Work and energy
2. Torque and power
3. Horsepower

V. Fuel system operation
1. Carburetors
2. Electronic fuel injection

VI. Electrical system overview
1. Starting system
2. Charging system
3. Ignition system

VII. Cooling systems
1. Air cooling
2. Liquid cooling

VIII. Lubrication systems
1. Wet sump
2. Dry sump
3. Pre-mix (total loss)
4. Oil injection (total loss)

IX. Exhaust systems
1. Scavenging
2. Reversion
3. Expansion chamber

Q. LABORATORY OUTLINE: None ☐ Yes ☒

I. Introduction
1 Laboratory procedures and policies
2 Basic laboratory introduction

II. Measurement
1. Inch and Metric System
2. Unit comversion
3. Measureing Equipment
   a. Care
   b. Use

III. Fasteners
1. Identification
2. Torque

IV. Service Information
1. Vehicle Identification
2. Service Manual Use

V. Maintenance
1. Service Intervals
2. Engine Oil Change
3. Component Inspection
4. Lubrication

VI. Engine Service and Inspection
1. Four-stroke Valve Train
2. Two-stroke Top End

VII. Carburetion
1. Service Procedures
2. Part Identification
3. Describe Operation