COURSE OUTLINE

MSPT 101 – POWERSPORTS SERVICE

Prepared By: Christopher Mayville

CANINO SCHOOL OF ENGINEERING
POWERSPORTS
August 2016
A. **TITLE:** Powersports Service

B. **COURSE NUMBER:** MSPT 101  
**SHORT TITLE:** Service

C. **CREDIT HOURS:** 3

D. **WRITING INTENSIVE COURSE (OPTIONAL):** N/A

E. **COURSE LENGTH:** 15 weeks

F. **SEMESTER(S) OFFERED:** Fall

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY:** two 50 minute lectures per week and one 3 hour lab per week

H. **CATALOGUE DESCRIPTION:** This course is an introduction to the general theories of system and maintenance of powersports vehicles, including motorcycles, snowmobiles and all-terrain vehicles. The course includes a group keystone project to be determined by the Instructor.

I. **PRE-REQUISITES/CO-COURSES:** None

J. **GOALS (STUDENT LEARNING OUTCOMES):**

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

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<th>Course Objective</th>
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2. Prof. Competence |
| b. Compare and contrast two and four cycle engine operation theories | 1. Crit. Thinking  
2. Prof. Competence |
| c. Diagnose and repair powertrain assembly problems | 1. Communication  
2. Prof. Competence |
| d. Apply the fundamentals of carburetion to small, high speed internal combustion engines | 1. Crit. Thinking  
2. Prof. Competence |

K. **TEXTS:** *Motorcycles, Fundamentals, Service & Repair* by Johns, Edmundson, Scharff, the Goodheart-Wilcox Company, Inc. Additional course materials will be provided by SUNY Canton’s corporate partners.

L. **REFERENCES:** CD Rom data, shop manuals of manufacturers, manufacturer software, various online references

M. **EQUIPMENT:** Standard Powersports laboratory equipment

N. **GRADING METHOD:** A – F

O. **MEASUREMENT CRITERIA/METHODS:** Quizzes, hourly exams, homework, laboratory performance tests, attendance, class participation
P. DETAILED TOPICAL OUTLINE:

MSPT 101- POWERSPORTS SERVICE

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