MASTER SYLLABUS

COURSE NUMBER – COURSE NAME
MSPT 122 - Powersports Electrical Systems Laboratory

Created by: Christopher Mayville

Updated by:

Canino School of Engineering Technology!

Department: Mechanical & Energy Technologies!

Semester/Year: Fall 2018!
A. **TITLE:** Powersports Electrical Systems Lab

B. **COURSE NUMBER:** MSPT 122

C. **CREDIT HOURS:** (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)

# Credit Hours: 1
# Lecture Hours: per week
# Lab Hours: 3 per week
Other: per week

Course Length: 15 Weeks

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:**

The laboratory component of this course consists of hands-on activities involving theories learned in the classroom. Students use service information, both hard-copy and electronic. Testing involves batteries; series, parallel, and series-parallel circuits, as well as charging and starting systems component identification and service.

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

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

MSPT 112-Powersports Electrical Systems, or with permission of instructor
I. **STUDENT LEARNING OUTCOMES:** *(see key below)*

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

<table>
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<tr>
<th>Course Student Learning Outcome [SLO]</th>
<th>Program Student Learning Outcome [PSLO]</th>
<th>GER [If Applicable]</th>
<th>ISLO &amp; SUBSETS</th>
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| Demonstrate knowledge basic electrical and electronic theories | MSPT SO 2  
MSPT SO 4 | ISLO  
ISLO  
ISLO | Subsets  
Subsets  
Subsets |
| Interpret DVOM readings to diagnose electrical circuits | MSPT SO 1  
MSPT SO 2  
MSPT SO 4 | ISLO  
ISLO  
ISLO | Subsets  
Subsets  
Subsets |
| Read and interpret electrical schematic charts | MSPT SO 4 | ISLO  
ISLO  
ISLO | Subsets  
Subsets  
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| Diagnose & service the charging, starting, and accessory systems | MSPT SO 1 | ISLO  
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<td>ISLO #</td>
<td>Institutional Student Learning Outcomes [ISLO 1 – 5]</td>
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<tr>
<td>1</td>
<td>Communication Skills</td>
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<td>Critical Thinking</td>
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<td>3</td>
<td>Foundational Skills</td>
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<td>4</td>
<td>Social Responsibility</td>
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<td>5</td>
<td>Industry, Professional, Discipline Specific Knowledge and Skills</td>
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*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:**

Instructor developed worksheets

L. **REFERENCES:**

Shop manuals of manufacturers

M. **EQUIPMENT:** None ☐ Needed: Snap-On 504 DVOM

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

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

Lab activities, lab participation

P. **DETAILED COURSE OUTLINE:**

1. Introduction
   a. Tools
   b. Safety
   c. Filing out a repair order
2. Snap-On 504 Meter Training and Certification
3. Basics of Circuit Construction
   a. Protection Devices
   b. Construction of Circuits on Training Boards
      1. Series
      2. Parallel
      3. Series Parallel
4. On-machine Service
   a. Checking Fuses
   b. Jump Starting
   c. Charging a Battery
   d. Checking Continuity
   e. Checking Voltage Drops
   f. Checking for Parasitic Draw
   g. Checking Solenoids
h. Battery Testing
i. Starter Testing
j. Charging System Testing
k. Accessories Testing (if time permits)

Q. **LABORATORY OUTLINE:** None ☒ Yes ☐