CANTON, NEW YORK

MASTER SYLLABUS

MECH 477 - CAPSTONE

Created by: Dr. Lucas Craig

Updated by:

Canino School of Engineering Technology

Department: MET

Semester/Year: Spring 2019
A. **TITLE:** Capstone

B. **COURSE NUMBER:** MECH 477

C. **CREDIT HOURS:** (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)
   
   # Credit Hours: 3
   # Lecture Hours: 3 per week
   # Lab Hours: 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:**

   This course provides a learning experience that allows a student to propose, design, and implement a project. This could be a study of a problem and solution of specific equipment, new product design, improvement of an existing product, or many others. Course faculty must approve all projects. A minimum of 120 hours of work is required for this course (8 hours per week).

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

   MECH 377

   **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:

<table>
<thead>
<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>
</tr>
</thead>
<tbody>
<tr>
<td>Perform basic research</td>
<td>1-12,14-15</td>
<td>3-Found Skills</td>
<td>IM QTR Subsets</td>
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<td></td>
<td>3-Found Skills</td>
<td>Subsets Subsets</td>
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<td></td>
<td>ISLO</td>
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<td>Demonstrate ability to project design and implementation.</td>
<td>1-15</td>
<td>2-Crit Think 5-Ind, Prof, Disc, Know Skills 4-Soc Respons</td>
<td>PS Subsets ER Subsets</td>
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<tr>
<td>Identify and propose a solution to a specific engineering technology problem</td>
<td>1-12,14-15</td>
<td>2-Crit Think 2-Crit Think ISLO</td>
<td>IA PS Subsets Subsets</td>
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<td>Prepare a standard project report</td>
<td>1-12,14-15</td>
<td>1-Comm Skills ISLO ISLO</td>
<td>W Subsets Subsets Subsets</td>
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<tr>
<td>Demonstrate classroom presentation skills</td>
<td>1-12,14-15</td>
<td>1-Comm Skills ISLO ISLO</td>
<td>O Subsets Subsets Subsets</td>
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<td>Propose a standard project</td>
<td>1-12,14-15</td>
<td>2-Crit Think 4-Soc Respons ISLO</td>
<td>PS T Subsets Subsets</td>
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<td>ISLO #</td>
<td>Institutional Student Learning Outcomes [ISLO 1 – 5]</td>
<td>ISLO &amp; Subsets</td>
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<td>1</td>
<td>Communication Skills</td>
<td>Oral [O], Written [W]</td>
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<td>2</td>
<td>Critical Thinking</td>
<td>Critical Analysis [CA], Inquiry &amp; Analysis [IA], Problem Solving [PS]</td>
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<td>3</td>
<td>Foundational Skills</td>
<td>Information Management [IM], Quantitative Lit./Reasoning [QTR]</td>
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<td>4</td>
<td>Social Responsibility</td>
<td>Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]</td>
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<td>5</td>
<td>Industry, Professional, Discipline Specific Knowledge and Skills</td>
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</tbody>
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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:**

N/A

L. **REFERENCES:**

N/A

M. **EQUIPMENT:** None ☒ Needed:

N.

**GRADING METHOD:** A-F

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

- Faculty Bi-Weekly Assessments: 10%
- Student Weekly Assessments: 10%
- Final Project Report: 20%
- Final Project Presentation (Oral): 20%
- Final Project Presentation (Oral – Eng. Comp): 20%
- Portfolio: 10%
- Scholarly Activity Presentation: 10%

P. **DETAILED COURSE OUTLINE:**

1. Project proposal
   A. Team project
   B. Must meet a standard established by faculty
   C. Must be submitted within the first two weeks of classes
   D. One week extra time given to rejected proposal for resubmission
   * Project proposal must meet the standard which provides the student an experience of defining a problem, analyzing the problem, designing solution for the problem, and implementing the solution for the problem within the scope of Engineering Technology. The students should use the learned skills from the first seven semesters in the program, and apply them to the proposed project comprehensively.

2. Project update
   A. Team project updates every week/bi-weekly
B. There also will be multiple meetings with the department faculty members

3. Project report
   A. During mid-term, an initial design report is due
   B. During finals week, a final design report is due

4. Presentation
   A. There will be multiple presentations throughout the semester (i.e., for different audiences)

5. Project portfolio
   A. A portfolio will be due at the end of the semester

6. Faculty and Student assessments
   A. Faculty (Dr. Craig) will assess each groups progress throughout the semester. Students are required to hand in a student assessment at the end of each week. Failure to hand in assessments on time will result in loss of points.

7. Scholarly Activity Presentation
   A. Your group will be required to sign-up and participate in the scholarly activities. Poster or oral presentation – either option.

Q. LABORATORY OUTLINE: None ☒ Yes ☐