

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



**MASTER SYLLABUS**

MECH 377 – Capstone Research and Proposal

**CIP Code: 15.0899**

*For assistance determining CIP Code, please refer to this webpage*

*<https://nces.ed.gov/ipeds/cipcode/browse.aspx?v=55>*

*or reach out to Sarah Todd at [todds@canton.edu](mailto:todds@canton.edu)*

**Created by: Dr. Lucas Craig**  
**Updated by: Dr. Lucas Craig**

**Canino School of Engineering Technology**  
**MET**  
**Fall 2023**

- A. TITLE: Capstone Research and Proposal
- B. COURSE NUMBER: MECH 377
- C. CREDIT HOURS (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity):

**# Credit Hours: 2**  
**# Lecture Hours \_\_\_ per Week**  
**# Lab Hours 4 Week**  
**Other \_\_\_ per Week**

**Course Length (# of Weeks): 15 weeks**

- D. WRITING INTENSIVE COURSE: N/A
- E. GER CATEGORY: N/A  
 Does course satisfy more than one GER category? If so, which one?
- F. SEMESTER(S) OFFERED: Fall

G. COURSE DESCRIPTION:  
 This course is part I of a senior design course. Its purpose is to allow the student to research and propose a project. The project will be constructed and tested in MECH477. Examples include, but are not limited to, new product development or improvements to an existing product. Course faculty must approve all projects.

- H. PRE-REQUISITES: Completion of 90 credit hours or permission of instructor  
 CO-REQUISITES:

I. STUDENT LEARNING OUTCOMES:

<u>Course Student Learning Outcome /SLO/</u>	<u>PSLO</u>	<u>GER</u>	<u>ISLO</u>
a. Perform basic research	3		3 – Foundation Skills, IM, QTR

b. Propose a standard project	2,3		2 – Critical Thinking (PS), 4 – Soc. Response (T)
c. Prepare a proposal report	3		1. Communication (W)
d. Demonstrate classroom presentation skills	3		1. Communication (O)

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

J. APPLIED LEARNING COMPONENT: Yes  No

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

Classroom/Lab   
 Internship   
 Clinical Practicum

Civic Engagement   
 Creative Works/Senior Project   
 Research

Practicum\_\_\_\_  
Service Learning\_\_\_\_  
Community Service\_\_\_\_

Entrepreneurship\_\_\_\_  
(program, class, project)

K. TEXTS: N/A

L. REFERENCES:

Hoffman, Harvey. The Engineering Capstone Course: Fundamentals for Students and Instructors. New York: Springer, 2014

M. EQUIPMENT: N/A

N. GRADING METHOD: A-F

O. SUGGESTED MEASUREMENT CRITERIA/METHODS:

**Final report**

**Final presentation**

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.**

Q. LABORATORY OUTLINE: N/A