A. **TITLE**: Mechatronics Capstone I

B. **COURSE NUMBER**: MKTX 477

C. **CREDIT HOURS**: 2

D. **WRITING INTENSIVE COURSE**: YES

E. **COURSE LENGTH**: 15 weeks

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

G. **HOURS OF LECTURE, LABORATORY, RECITATION, TUTORIAL, ACTIVITY**: 1 hour of lecture/week and 2 hours of recitation/week

H. **CATALOG DESCRIPTION**:

This is the first of a two course sequence for Mechatronics Capstone Project where students address open-ended problems.

I. **PRE-REQUISITES/CO-COURSES**:

a. Pre-requisite(s): Senior standing in Mechatronics or permission of instructor
b. Co-requisite(s): None

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

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

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<th>ABET</th>
<th>Institutional SLO</th>
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<tr>
<td></td>
<td>Inter/Intrapersonal Skills</td>
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<tr>
<td>1.</td>
<td>Function on a multidisciplinary team</td>
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<td>2.</td>
<td>Design, develop, process, manage, and document the phases of a project</td>
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<td>3.</td>
<td>Perform basic research</td>
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<td>4.</td>
<td>Solve complex problems in a clear and systematic way</td>
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<td>5.</td>
<td>Apply essential techniques, skills, and modern engineering tools</td>
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<td>6.</td>
<td>Conduct experiments and collect/analyze/interpret data</td>
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<td>7.</td>
<td>Prepare and present a standard project report</td>
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K. **TEXTS**: N/A

L. **REFERENCES**: N/A

M. **EQUIPMENT**: N/A

N. **GRADING METHOD**: A – F

O. **MEASUREMENT CRITERIA/METHODS**:

- Project team reports: (Project proposal; progress reports)
- Proposal presentation

P. **DETAILED COURSE OUTLINE**:
I. Application of mathematics, science, and engineering

II. Design and conduct experiments and collect/analyze/interpret data

III. Identify, formulate, and solve engineering problems

IV. Use essential techniques, skills, and modern engineering tools

V. Function on multidisciplinary teams

VI. Understand professional and ethical responsibility

VII. Communicate effectively

Q. LABORATORY OUTLINE: N/A