# Mechatronic Systems Engineering

**September 2021** *(for students who entered first year in September 2019)*

## Year 2

**Term A**
- AM 2270A Applied Mathematics for Engineering II
- ECE 2205A Electric Circuits I
- MSE 2200Q Engineering Shop Safety Training
- MSE 2201A Introduction to Electrical Instrumentation
- MSE 2212A Mechanics of Materials
- MSE 2214A Thermodynamics
- CS 1037A Computer Science Fundamentals II

**Term B**
- MSE 2202B Introduction to Mechatronic Design
- MSE 2213B Engineering Dynamics
- MSE 2233B Circuits and Systems
- MSE 2273B Introduction to Heat Transfer and Fluid Mechanics
- Writ 2130G Building Better (Communication) Bridges: Rhetoric & Professional Communication for Engineers

## Year 3

**Term A**
- NMM 3415A Applied Math for Electrical Engineering
- ECE 2277A Digital Logic Systems
- ECE 3300A Control Systems
- MSE 3301A Materials Selection and Manufacturing Processes
- MSE 3310A Electric Motors and Drives
- MSE 3381A Kinematics and Dynamics of Machines

**Term B**
- ECE 3331B Signal Processing
- ECE 3375B Microprocessors and Microcomputers
- MSE 3302B Sensors and Actuators
- MSE 3360B Finite Element Methods for Mechatronic Systems Engineering
- MSE 3380B Machine Component Design for Mechatronic Systems Engineering
- One 0.5-credit non-technical elective taken from the approved list

## Year 4

**Term A**
- MSE 4401A Robotic Manipulators
- MSE 4499 Mechatronic Design Project
- SS 2141A Applied Probability and Statistics for Engineers
- ELI 4110F Engineering Ethics, Sustainable Development & the Law
- Two 0.5-credit technical electives

**Term B**
- MSE 4499 Mechatronic Design Project
- ECE 4460B Real Time and Embedded Systems
- ECE 4469B Applied Control Systems
- Two 0.5-credit non-technical electives taken from the approved list
- One 0.5-credit technical elective

## NOTES:

**Non-technical electives:**
Please choose 1.0 credits (one 1.0-credit or two 0.5-credit courses) from the 1000 level and one 0.5-credit course from the 2000 (or higher) level.

**Technical Electives**
Some technical electives may not be offered in a given academic year. Consult the Department for accurate listing.

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<tr>
<th>Course Code</th>
<th>Course Name</th>
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<tr>
<td>ECE 3380A/B</td>
<td>Advanced Digital Systems</td>
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<tr>
<td>ECE 4429A/B</td>
<td>Advanced Digital Signal Processing</td>
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<tr>
<td>ECE 4438A/B</td>
<td>Advanced Image Processing and Analysis</td>
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<td>ECE 4445A/B</td>
<td>Introduction to Digital Image Processing</td>
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<td>ECE 4455A/B</td>
<td>Biomedical Systems Analysis</td>
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<td>ECE 4468A/B</td>
<td>Systems Optimization</td>
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<td>MME 4424A/B</td>
<td>Mechanical Properties of Materials</td>
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<td>MME 4425A/B</td>
<td>Mechanical Vibrations</td>
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<td>MME 4459A/B</td>
<td>Advanced CAE: Manufacturing Technologies</td>
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<td>MME 4469A/B</td>
<td>Biomechanics of the Musculoskeletal System</td>
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<td>MME 4470A/B</td>
<td>Medical and Assistive Devices</td>
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<td>MME 4473A/B</td>
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<td>MME 4480A/B</td>
<td>Advanced CAE: Reverse Engineering</td>
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<td>MME 4482A/B</td>
<td>Fundamentals of MEMS</td>
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<td>MME 4492A/B</td>
<td>Production Management for Engineers</td>
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