# Mechatronic Systems Engineering

## September 2019 *(for students who entered first year in September 2018)*

### 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
| | |
|---|---|
| AM 2276B | Applied Mathematics for Elec. & Mech. Engineering III |
| 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
| | |
|---|---|
| AM 3415A | Applied Math for Electrical Engineering |
| ECE 2277A | Digital Logic Systems |
| ECE 3330A | 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 |

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 |
| ES 4498F | 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.

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