# Integrated Engineering

**September 2019** (students who entered first year in September 2018 or later)

## Year 2:

### Term A
- AM 2270a Applied Mathematics for Engineering II
- CEE 2220a Introduction to Structural Theory
- ECE 2277a Digital Logic Systems
- MSE 2214a Thermodynamics I
- MME 2259a Product Design and Development

One 0.5 non-technical elective

### Term B
- AM 2276b Applied Mathematics for Electrical and Mechanical Engineering III
- CBE 2221b Fluid Flow
- CBE 2291b Computational Methods for Engineers
- ECE 2238b Introduction to Electrical Engineering
- SS 2143b Applied Statistics and Data Analysis for Engineers

One 0.5 non-technical elective

## Year 3:

### Term A
- ES 3330a Engineering Innovation I: Strategy and Business Economics
- CBE 2220a Chemical Process Calculations
- CBE 3322a Heat Transfer Operations
- CEE 2202a Mechanics of Materials
- ECE 3374a Introduction to Electronics for Mechanical Engineering
- MSE 3301a Materials Selection & Manufacturing Processes

### Term B
- ES 3331b Engineering Innovation II: Marketing and Design Thinking
- CEE 2221b Structural Theory and Design II
- MSE 2213b Engineering Dynamics
- MME 2285b Engineering Experimentation
- MSE 3360b Finite Element Methods in Mechanical Engineering
- ES 4498G Engineering Ethics, Sustainable Development and the Law

## Year 4:

### Term A
- ES 4499 Interdisciplinary Engineering Design Project
- ES 4480a Engineering Innovation III: Leadership and Corporate Entrepreneurship

Three 0.5 technical electives

### Term B
- ES 4499 Interdisciplinary Engineering Design Project
- ES 4481b Engineering Innovation IV: New Venture Creation

Three 0.5 technical electives

The technical electives listed here are recommended technical electives from each department. Other courses may be taken if prerequisite requirements are satisfied.

## NOTES:

### Year 4 Options:

#### Technical Elective List:

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

<table>
<thead>
<tr>
<th>Chemical and Biochemical Engineering:</th>
<th>Civil and Environmental Engineering:</th>
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<tbody>
<tr>
<td>CBE 2290a/b Fundamentals of Biochemical and Environmental Engineering</td>
<td>CEE 3348a/b Project Management and Engineering Cases</td>
</tr>
<tr>
<td>CBE 3310a/b Process Dynamics and Control</td>
<td>CBE 3362a/b Drinking Water Quality and Treatment</td>
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<tr>
<td>CBE 3324a/b Mass Transfer Operations</td>
<td>CBE 4405a/b Air Pollution</td>
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<tr>
<td>CBE 4409a/b Wastewater Treatment</td>
<td>CEE 4418a/b Systems Approach for Civil and Environmental Engineering</td>
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<tr>
<td>CBE 4421a/b Introduction to Biomaterials Engineering</td>
<td>CEE 4458a/b Risk Analysis and Decision Making in Engineering</td>
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<tr>
<td>CEE 4465a/b Environmental Design for Waste Disposal</td>
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| CEE 4477a/b Environmental Applications of Nanotechnology | }

### Electrical and Computer Engineering:

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<thead>
<tr>
<th>ECE 3349a/b Introduction of VLSI</th>
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<tbody>
<tr>
<td>ECE 3375a/b Microprocessors and Microcomputers</td>
</tr>
<tr>
<td>ECE 4436a/b Networking: Principles, Protocols, and Architecture</td>
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<tr>
<td>ECE 4468a/b Systems Optimization</td>
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<td>SE 3314a/b Computer Networks Applications</td>
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### Mechanical and Materials Engineering:

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<thead>
<tr>
<th>MME 3381a/b Kinematics and Dynamics of Machines</th>
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<tr>
<td>MME 4452a/b Robotics and Manufacturing Automation</td>
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<tr>
<td>MME 4473a/b Computer Integrated Manufacturing (CIM)</td>
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<tr>
<td>MME 4487a/b Mechatronic System Design</td>
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<td>MME 4492a/b Production Management for Engineers</td>
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