## Computer Engineering: Software Systems for Ubiquitous Computing (Option B)
### September 2021 (for students who entered first year in September 2019)

### Year 2
#### Term A
- **AM 2270A**: Applied Mathematics for Engineering II
- **SE 2202A**: Scripting Programming Language Fundamentals
- **ECE 2205A**: Electric Circuits I
- **ECE 2277A**: Digital Logic Systems
- **Math 2151A**: Discrete Structures for Engineering
- **SE 2205A**: Algorithms and Data Structures for Object-Oriented Design

#### Term B
- **AM 2276B**: Applied Mathematics for Elec. & Mech. Engineering II
- **ECE 3375B**: Microprocessors and Microcomputers
- **ECE 3380B**: Advanced Digital Systems
- **MSE 2233B**: Circuits and Systems
- **SE 2203B**: Software Design
- **SS 2143B**: Applied Statistics and Data Analysis for Engineers

### Year 3
#### Term A
- **ECE 3330A**: Control Systems
- **ECE 3389A**: Computer System Design
- **ECE 4436A**: Networking: Principles, Protocols & Architecture
- **SE 3313A**: Operating Systems for Software Engineering
- **SE 3316A**: Web Technologies
- **SE 3352A**: Software Requirements and Analysis

#### Term B
- **ECE 3331B**: Introduction to Signal Processing
- **ECE 3390B**: Hardware/Software Co-Design
- **ECE 4460B**: Real-Time and Embedded Systems
- **SE 3314B**: Design and Implementation of Computer Networks
- **SE 3353B**: Human-Computer Interface Design
- **Writ 2130G**: Building Better (Communication) Bridges: Rhetoric & Professional Communication for Engineers

### Year 4
#### Term A
- **ECE 4415**: Computer Engineering Design Project
- **ECE 4437A**: Communications Theory
- **SE 4452A**: Software Verification and Validation

One 0.5-credit non-technical elective from approved list
Two 0.5-credit technical electives

#### Term B
- **ECE 4415**: Computer Engineering Design Project
- **ELI 4110G**: Engineering Ethics, Sustainable Development & the Law
- **SE 4455B**: Cloud Computing: Concepts, Technologies and Applications

One 0.5-credit technical elective
Two 0.5-credit non-technical electives from approved list

### 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.

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
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<tbody>
<tr>
<td>ECE 4429A/B</td>
<td>Advanced Digital Signal Processing</td>
</tr>
<tr>
<td>ECE 4438A/B</td>
<td>Advanced Image Processing and Analysis</td>
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<tr>
<td>ECE 4445A/B</td>
<td>Introduction to Digital Image Processing</td>
</tr>
<tr>
<td>ECE 4455A/B</td>
<td>Biomedical Systems Analysis</td>
</tr>
<tr>
<td>ECE 4469A/B</td>
<td>Applied Control Systems</td>
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<td><strong>Maximum one of:</strong></td>
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<tr>
<td>SE 3309A/B</td>
<td>Database Management Systems</td>
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<tr>
<td>SE 3310A/B</td>
<td>Theoretical Foundations of Software Engineering</td>
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<tr>
<td>SE 3351A/B</td>
<td>Software Project and Process Management</td>
</tr>
<tr>
<td>SE 4460 A/B</td>
<td>Machine Learning &amp; Design</td>
</tr>
<tr>
<td>SE 4472A/B</td>
<td>Information Security</td>
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