<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Terms</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 314</td>
<td>Software Engineering</td>
<td>3</td>
<td>C253 with a C or higher</td>
<td>F, S</td>
</tr>
<tr>
<td>CS 345</td>
<td>Machine Learning Foundations and Practice</td>
<td>3</td>
<td>CS220 with a C or higher; CS150B with a C or higher or CS152 with a C or higher or CS165 with a C or higher; MATH159 with a C or higher or MATH160 with a C or higher; ECE303/STAT 303 with a C or higher</td>
<td>F, S</td>
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<tr>
<td>CS 370</td>
<td>Operating Systems</td>
<td>3</td>
<td>CS165 with a C or higher; ECE251 with a C or higher</td>
<td>F, S</td>
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<tr>
<td>CS 420</td>
<td>Introduction to Analysis of Algorithms</td>
<td>4</td>
<td>CS320 with a C or higher</td>
<td>F</td>
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<tr>
<td>CS 435</td>
<td>Introduction to Big Data</td>
<td>4</td>
<td>CS320 with a C or higher or CS370 with a C or higher</td>
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<tr>
<td>CS 440</td>
<td>Introduction to Artificial Intelligence</td>
<td>4</td>
<td>CS253 with a C or higher; CS320 with a C or higher</td>
<td>F</td>
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<tr>
<td>CS 445</td>
<td>Introduction to Machine Learning</td>
<td>4</td>
<td>CS165 with a C or higher; CS45 with a C or higher; MATH369 or DSC369 with a C or higher or MATH229 with a C or higher</td>
<td>S</td>
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<tr>
<td>CS 455</td>
<td>Introduction to Distributed Systems</td>
<td>4</td>
<td>CS370 with a C or higher</td>
<td>S</td>
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<tr>
<td>CS 456</td>
<td>Modern CyberSecurity</td>
<td>4</td>
<td>CS356 with a C or higher</td>
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<tr>
<td>CS 458</td>
<td>Blockchain Principles and Applications</td>
<td>4</td>
<td>CS314 with a C or higher</td>
<td>S</td>
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<tr>
<td>CS 462</td>
<td>Engaging in Virtual Worlds</td>
<td>4</td>
<td>CS253 with a C or higher; DSC369 with a C or higher or MATH229 with a C or higher or MATH369 with a C or higher</td>
<td>F</td>
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<tr>
<td>CS 464</td>
<td>Principles of Human-Computer Interaction</td>
<td>4</td>
<td>CS253 with a C or higher</td>
<td>S</td>
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<tr>
<td>CS 545</td>
<td>Machine Learning</td>
<td>4</td>
<td>CS440</td>
<td>F</td>
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<tr>
<td>CS 559</td>
<td>Quantitative Security</td>
<td>4</td>
<td>CS356 with a B or higher; ECE303 with a B or higher - will need override from CS for STAT course</td>
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<tr>
<td>ECE 340</td>
<td>Electromagnetics for Computer Engineering</td>
<td>3</td>
<td>ECE202 with a C or higher; MATH161 with a C or higher</td>
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<tr>
<td>ECE 445</td>
<td>Digital Logic Synthesis</td>
<td>3</td>
<td>ECE102 with a C or higher</td>
<td>S, Even</td>
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<tr>
<td>ECE 495†</td>
<td>Independent Study</td>
<td>1-3</td>
<td></td>
<td>F, S, SS</td>
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<tr>
<td>ECE 519</td>
<td>Network Centric Systems</td>
<td>3</td>
<td>CS165 with a C or higher; ECE303 with a C or higher or ECE312 with a C or higher or ECE421 with a C or higher or ECE456 with a C or higher or MATH369 with a C or higher</td>
<td>S, Even</td>
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<tr>
<td>ECE/CS 528</td>
<td>Embedded Systems and Machine Learning</td>
<td>4</td>
<td>ECE251 with a C or higher</td>
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<tr>
<td>ECE 544</td>
<td>Silicon Photonics in Computing Systems</td>
<td>3</td>
<td>ECE251 or CS270; PH142. PH141; ECE 303 with a C or higher</td>
<td>F</td>
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<tr>
<td>ECE 545</td>
<td>FPGA Signal Processing/Software-Defined Radio</td>
<td>3</td>
<td>ECE312 with a C or higher; ECE451 with a C or higher</td>
<td>S, Odd</td>
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<tr>
<td>ECE 554</td>
<td>Computer Architecture</td>
<td>3</td>
<td>ECE452</td>
<td>S, Even</td>
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<tr>
<td>ECE 558</td>
<td>Manycore System Design Using Machine Learning</td>
<td>3</td>
<td>ECE452 with a C or higher</td>
<td>F</td>
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<tr>
<td>ECE/CS 561</td>
<td>Hardware/Software Design of Embedded Systems</td>
<td>4</td>
<td></td>
<td>S, Odd</td>
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<tr>
<td>MATH 360</td>
<td>Mathematics of Information Security</td>
<td>3</td>
<td>MATH161; MATH229 or DSC369 or MATH369</td>
<td>F</td>
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<tr>
<td>MATH 460</td>
<td>Information and Coding Theory</td>
<td>3</td>
<td>MATH360 or MATH366; DSC369 or MATH369</td>
<td>F</td>
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<tr>
<td>MATH 463</td>
<td>Post-Quantum Cryptography</td>
<td>3</td>
<td>MATH360 or MATH366 or MATH466; DSC369 or MATH369 or MATH469</td>
<td>S, Odd</td>
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<tr>
<td>STAT 421</td>
<td>Introduction to Stochastic Processes</td>
<td>3</td>
<td>MATH229 or MATH369; STAT420 (will substitute ECE303/STAT303 for STAT420)</td>
<td>S</td>
</tr>
</tbody>
</table>

† A total of 3 credits of Independent Study may apply towards degree requirements. This includes credits awarded for ECE395 and ECE495 combined.