M.S. in Software Engineering

The program requires the completion of 33 credits.

Students with non-computing STEM background may be accepted and required to take the following bridge courses (CS 506 may count toward the credits required for the MS degree):

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 280</td>
<td>Programming Language Concepts</td>
<td>3</td>
</tr>
<tr>
<td>CS 332</td>
<td>Principles of Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CS 505</td>
<td>Programming, Data Structures, and Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CS 506</td>
<td>Foundations of Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>Total Credits</td>
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<td>12</td>
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</tbody>
</table>

1 Students can take other CS courses with advisor approval

Required Courses (21 Credits) Students must take a two-course sequence (CS 690 in the Fall followed by CS 700B in the following Spring) that focuses on a team-based industrial scale software project.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CS 684</td>
<td>Software Testing and Quality Assurance ¹</td>
<td>3</td>
</tr>
<tr>
<td>CS 685</td>
<td>Software Architecture ¹</td>
<td>3</td>
</tr>
<tr>
<td>CS 683</td>
<td>Software Project Management ¹</td>
<td>3</td>
</tr>
<tr>
<td>IS 676</td>
<td>Requirement Engineering</td>
<td>3</td>
</tr>
<tr>
<td>CS 673</td>
<td>Software Design and Production Methodology ¹</td>
<td>3</td>
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<tr>
<td>CS 690</td>
<td>Software Studio</td>
<td>3</td>
</tr>
<tr>
<td>CS 700B</td>
<td>Master's Project</td>
<td>3</td>
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</table>

Elective Courses
Select four of the following:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>CS 602</td>
<td>Java Programming</td>
<td></td>
</tr>
<tr>
<td>CS 630</td>
<td>Operating System Design ¹</td>
<td></td>
</tr>
<tr>
<td>CS 631</td>
<td>Data Management System Design</td>
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<tr>
<td>CS 632</td>
<td>Advanced Database System Design</td>
<td></td>
</tr>
<tr>
<td>CS 633</td>
<td>Distributed Systems ¹</td>
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</tr>
<tr>
<td>CS 634</td>
<td>Data Mining</td>
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<tr>
<td>CS 635</td>
<td>Computer Programming Languages</td>
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</tr>
<tr>
<td>CS 652</td>
<td>Computer Networks-Architectures, Protocols and Standards ¹</td>
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<tr>
<td>CS 656</td>
<td>Internet and Higher-Layer Protocols ¹</td>
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<tr>
<td>CS 659</td>
<td>Image Processing and Analysis</td>
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<tr>
<td>CS 670</td>
<td>Artificial Intelligence</td>
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<tr>
<td>CS 675</td>
<td>Machine Learning</td>
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<tr>
<td>CS 696</td>
<td>Network Management and Security ¹</td>
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<tr>
<td>IS 690</td>
<td>Web Services and Middleware</td>
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<tr>
<td>IS 663</td>
<td>System Analysis and Design</td>
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<tr>
<td>EM 636</td>
<td>Project Management</td>
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<td>EM 637</td>
<td>Project Control</td>
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<tr>
<td>MGMT 620</td>
<td>Management of Technology</td>
<td></td>
</tr>
<tr>
<td>Total Credits</td>
<td></td>
<td>33</td>
</tr>
</tbody>
</table>

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