COMPUTER SCIENCE, M.S.

A bachelor's degree equivalent to the B.S. in computer science at Baylor or the B.A. in computer science at Baylor with calculus II and linear algebra is the standard requirement for admission. The submission of GRE score is required for admission. For those applying with less than the standard preparation, the quality and adequacy of the admissions record will be evaluated by the Graduate Committee of the Department of Computer Science after reviewing the application for admission. Requirements which must be met before admission will be determined by that committee. These requirements will be in addition to requirements for the M.S. degree.

At least fifteen semester hours are required at the 5000 level excluding CSI 5V92 Master's Research, CSI 5V96 Master's Project, and CSI 5V99 Thesis. All work presented to meet the requirements for this degree must be approved by the student's Advisory Committee or thesis Committee.

The Graduate Committee will appoint a graduate Advisory Committee for each student to monitor the progress of the student. The Master of Science program in computer science has two options, a thesis option and a project option.

Thesis Option

The thesis option is designed for students who are interested in eventually obtaining a Ph.D. in computer science or for well-qualified students who wish to complete a master's degree in the shortest time possible.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 5010</td>
<td>Graduate Seminar (2 semesters)</td>
<td>0</td>
</tr>
<tr>
<td>CSI 5V92</td>
<td>Master's Research</td>
<td>3</td>
</tr>
<tr>
<td>CSI 5V99</td>
<td>Thesis</td>
<td>3</td>
</tr>
</tbody>
</table>

Area Courses

Area course requirements are designed to provide students with sufficient breadth of knowledge for a Master of Science degree. It is expected for students to take courses of interest for their research as part of this requirement. Students must take at least two theory courses, one software engineering course, two system courses and two application courses. A student may petition for a course taught for graduate credit within the Computer Science department but not listed to count as a course towards a specific area requirement. One course may not be counted towards more than one area.

**Theory Courses**
- CSI 5310 Introduction to Computation Theory 3
- CSI 5350 Advanced Algorithms 3

**Software Engineering Courses**
- CSI 5324 Software Engineering 3
- or CSI 5342 Software Verification and Validation 3

**Systems Courses**
Select at least two courses from the following: 6
- CSI 5321 Advanced Data Communications
- CSI 5335 Advanced Database
- CSI 5337 Advanced Operating Systems
- CSI 5338 Advanced Computer Organization
- CSI 5345 Parallel Systems

Electives

A total of 9 semester hours of electives are required.

A student's undergraduate preparation will normally include courses in Data Communications and Operating Systems. For students without prior course work in these areas, one of the following two courses may be taken for graduate credit, but only one of these courses may count toward the master's degree requirements:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 4321</td>
<td>Data Communications</td>
</tr>
<tr>
<td>or CSI 4337</td>
<td>Introduction to Operating Systems</td>
</tr>
</tbody>
</table>

With the approval of the advisory committee, the student may take one 5000-level course from outside the department. No more than one course from outside the department may count toward the master's degree requirements.

Except as mentioned above, any CSI course that is offered for graduate credit may be taken as an elective.

Total Hours 36

Project Option

The project option is designed for students interested in a terminal master's degree. It is also appropriate for students who continue to work while obtaining the degree. This option is designed for a fall entry. The program is intended to be completed in two years by a full-time student, but it is structured so that additional time may be taken to complete the degree.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 5010</td>
<td>Graduate Seminar (2 semesters)</td>
<td>0</td>
</tr>
<tr>
<td>CSI 5V92</td>
<td>Master's Research</td>
<td>3</td>
</tr>
<tr>
<td>CSI 5V96</td>
<td>Master's Project</td>
<td>3</td>
</tr>
</tbody>
</table>

Area Courses

Area course requirements are designed to provide students with sufficient breadth of knowledge for a Master of Science degree. It is expected for students to take courses of interest for their research as part of this requirement. Students must take at least two theory courses, one software engineering course, two system courses and two application courses. A student may petition for a course taught for graduate credit within the Computer Science department but not listed to count as a course towards a specific area requirement. One course may not be counted towards more than one area.

**Theory Courses**
- CSI 5310 Introduction to Computation Theory 3
- CSI 5350 Advanced Algorithms 3
Software Engineering Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 5324</td>
<td>Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>or CSI 5342</td>
<td>Software Verification and Validation</td>
<td></td>
</tr>
</tbody>
</table>

Systems Courses

Select at least two courses from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 5321</td>
<td>Advanced Data Communications</td>
</tr>
<tr>
<td>CSI 5335</td>
<td>Advanced Database</td>
</tr>
<tr>
<td>CSI 5337</td>
<td>Advanced Operating Systems</td>
</tr>
<tr>
<td>CSI 5338</td>
<td>Advanced Computer Organization</td>
</tr>
<tr>
<td>CSI 5345</td>
<td>Parallel Systems</td>
</tr>
<tr>
<td>CSI 5346</td>
<td>Design Automation</td>
</tr>
</tbody>
</table>

Application Courses

Select at least two courses from the following:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 4341</td>
<td>Computer Graphics</td>
</tr>
<tr>
<td>CSI 4352</td>
<td>Introduction to Data Mining</td>
</tr>
<tr>
<td>CSI 5325</td>
<td>Introduction to Machine Learning</td>
</tr>
<tr>
<td>CSI 5330</td>
<td>Advanced Computational Biology</td>
</tr>
<tr>
<td>CSI 5360</td>
<td>Information Retrieval &amp; Natural Language Processing</td>
</tr>
<tr>
<td>CSI 5388</td>
<td>Advanced Topics in Human-Computer Interaction</td>
</tr>
</tbody>
</table>

Electives

A total of 9 semester hours of electives are required.

A student's undergraduate preparation will normally include courses in Data Communications and Operating Systems. For students without prior course work in these areas, one of the following two courses may be taken for graduate credit, but only one of these courses may count toward the master's degree requirements:

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI 4321</td>
<td>Data Communications</td>
</tr>
<tr>
<td>or CSI 4337</td>
<td>Introduction to Operating Systems</td>
</tr>
</tbody>
</table>

With the approval of the advisory committee, the student may take one 5000-level course from outside the department. No more than one course from outside the department may count toward the master's degree requirements.

Except as mentioned above, any CSI course that is offered for graduate credit may be taken as an elective.

Total Hours

36

An oral examination will be required of every student in either option. There is no foreign language requirement for graduation.