Computer Science MS

Admission Requirements

Applicants must meet the general graduate admission requirements of the Graduate School, described in the UMSL Bulletin. Students are considered for admission to the graduate program in Computer Science only after they have formally applied for admission through the Graduate School. Applications are completed on-line. Additional requirements are listed below.

Applicants must demonstrate significant proficiency in computer science by showing competence (demonstrating related academic or professional experience) in the following areas. Courses in parentheses are UMSL recommended undergraduate courses that would satisfy the requirements.

1. Programming skills in C or C++ and Java (CMP SCI 1250 or CMP SCI 2250, and CMP SCI 2261)
2. Proficiency with Object-Oriented concepts and terminology (CMP SCI 2261)
3. Proficiency with dynamic data structures (CMP SCI 2250)
4. Proficiency with computer organization, architecture, or assembly level programming (CMP SCI 2700)
5. Proficiency with design and time/space analysis of algorithms (CMP SCI 3130)
6. Familiarity with Unix/Linux/OSX and with command-line processing, file system and permissions, shell and script programming (CMP SCI 2750)

Students must also have satisfactorily completed mathematics courses equivalent to the following UMSL courses:

1. One semester of calculus (MATH 1800)
2. A course in discrete mathematics (MATH 3000)
3. An elementary course in probability or statistics (MATH 1320)

An applicant missing some of the above requirements may be admitted on restricted status if there is strong supportive evidence in other areas. Such restricted students would have to take the suggested courses for the missing requirements or otherwise demonstrate proficiency. Special regulations of the Graduate School that apply to students on restricted status are described in the UMSL Bulletin.

Master of Science in Computer Science

Candidates for the M.S. degree in Computer Science must complete 30 hours of course work, subject to the Graduate School regulations. Of these, at least 18 hours must be numbered 5000 or above, with at least one course numbered 6000 or above, chosen with the prior approval of the Graduate Director. All courses numbered below 5000 must be completed with grades of at least B-. Outside computer science, up to 6 hours of related course work is allowed upon permission of the Graduate Director.

Students must satisfy all of the following core requirements:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMP SCI 4760</td>
<td>Operating Systems</td>
<td>3</td>
</tr>
<tr>
<td>CMP SCI 4250</td>
<td>Programming Languages</td>
<td>3</td>
</tr>
<tr>
<td>CMP SCI 5700</td>
<td>Computer Systems</td>
<td>3</td>
</tr>
<tr>
<td>CMP SCI 5500</td>
<td>Software Engineering</td>
<td>3</td>
</tr>
</tbody>
</table>

CMP SCI 5130 Advanced Data Structures and Algorithms 3

Waiving or substituting for a specific requirement can be done on the basis of prior course work or experience at the discretion of the Graduate Director, but it will not reduce the total hours required for the degree.

Additionally, students must attend at least five different seminars or colloquium presentations in the department.

Thesis Option

Students may choose to write an M.S. thesis under the direction of a faculty member in the Department of Mathematics and Computer Science. A thesis is not, however, required for this degree. A student who wishes to write a thesis should enroll in 6 hours of CMP SCI 6900, Thesis. Students writing an M.S. thesis must defend their thesis in an oral exam administered by a committee of three department members which includes the thesis director.