Computer Science, M.S.C.S., Ph.D.

Degrees Offered

• Master of Science in Computer Science (M.S.C.S)
• Doctor of Philosophy in Computer Science (Ph.D.)

Nature of the Program

The Masters of Science in Computer Science (M.S.C.S.) degree program qualifies a student to assume a professional role in industry or government, teach in a junior or senior college, or undertake advanced training toward a doctorate in computer science. The following sections describe the general procedures to be followed in completing the M.S.C.S. degree. Note that steps are intended to be carried out in a specific order.

Program Educational Objectives

The objective of the Masters of Science in Computer Science (M.S.C.S.) degree program is to produce graduates who have the knowledge, skills, and attitudes that will ensure success in professional positions in business, industry, research, government service, or in further graduate or professional study.

Specific outcomes that will be achieved by graduates of the program are:

• Achieve a depth of proficiency in a specific field of Computer Science by completing major courses in one of three areas: computer systems, software and knowledge engineering, or the theory of computation.
• Achieve a breadth of understanding of Computer Science by completing minor coursework requirements in other areas, and by participation in graduate seminar requirements.
• Demonstrate professionalism and communication skills through completion of coursework, project, or thesis defense.

Master Admissions

To be eligible for admission into the Master of Science in Computer Science degree program, a candidate must fulfill the following requirements:

• A minimum cumulative GPA of 3.0 or equivalent, based on a 4.0 system.
• A statement of purpose.
• Three letters of reference.
• All applicants for the masters program must submit GRE scores. Minimum scores are a 3.5 or better in analytical writing, and either the 80th percentile or better on the quantitative part, or a combined score of 300 or better in (verbal + quantitative).
• All applicants require an appropriate bachelors degree for entry. Students lacking some foundation courses appropriate to a particular degree program may be assigned some preparatory coursework as a condition of admission (see Foundation Assessment section).
• International applicants must meet the WVU requirement of English language proficiency (https://graduateadmissions.wvu.edu/how-to-apply/apply-for-2023-2024/international-graduate-applicant/).

Doctoral Admissions

To be eligible for admission into the doctoral program, a candidate must fulfill the following requirements:

• A minimum cumulative GPA of 3.0 or equivalent, based on a 4.0 system.
• A statement of purpose.
• Three letters of reference.
• All applicants for the doctoral program must submit GRE scores. Minimum scores are a 3.5 or better in analytical writing, and either the 80th percentile or better on the quantitative part, or a combined score of 300 or better in (verbal + quantitative).
• All applicants require an appropriate bachelors or masters degree for entry. Students lacking some foundation courses appropriate to a particular degree program may be assigned some preparatory coursework as a condition of admission (see Foundation Assessment section).
• International applicants must meet the WVU requirement of English language proficiency (https://graduateadmissions.wvu.edu/how-to-apply/apply-for-2023-2024/international-graduate-applicant/).

FOUNDATION ASSESSMENT

The minimum background expected of any student entering the Masters of Science in Computer Science program is coursework equivalent to the following:

• One year of calculus (MATH 155 (http://catalog.wvu.edu/search/?P=MATH%20155) and MATH 156 (http://catalog.wvu.edu/search/?P=MATH %20156)).
• One course in probability and statistics (STAT 215 (http://catalog.wvu.edu/search/?P=STAT%20215)).
• Knowledge of introductory programming in a high-level programming language (CS 110 (http://catalog.wvu.edu/search/?P=CS%20110)).

Students not meeting these minimum requirements will be required to take the equivalent coursework before applying to the M.S.C.S. program.

Students entering without a four-year Bachelors degree in Computer Science may have additional deficiencies in their coursework which must be addressed before beginning the regular program. These students will be initially admitted with provisional status and required to remove these deficiencies during their first eighteen hours of coursework.

Possible deficiency areas for students having a Bachelors degree in other disciplines represent the following core areas required of all undergraduate CS students:

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 111</td>
<td>Introduction to Data Structures</td>
<td>4</td>
</tr>
<tr>
<td>&amp; 111L</td>
<td>and Introduction to Data Structures Laboratory</td>
<td></td>
</tr>
<tr>
<td>CS 220</td>
<td>Discrete Mathematics</td>
<td>3</td>
</tr>
<tr>
<td>CS 230</td>
<td>Introduction to Software Engineering</td>
<td>4</td>
</tr>
<tr>
<td>&amp; 230L</td>
<td>and Introduction to Software Engineering Laboratory</td>
<td></td>
</tr>
<tr>
<td>CS 310</td>
<td>Principles of Programming Languages</td>
<td>3</td>
</tr>
<tr>
<td>CS 320</td>
<td>Analysis of Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CS 350</td>
<td>Computer System Concepts</td>
<td>3</td>
</tr>
</tbody>
</table>

As demand justifies and resources permit, the department will offer accelerated courses to assist graduate students in satisfying deficiencies.

**Admission Requirements 2024-2025**

The Admission Requirements above will be the same for the 2024-2025 Academic Year.

MSCS Major Code: 3022

PhD Major Code: 3023

For specific information on the following programs, please see the links to the right:

• Computer Science, M.S.C.S.

For specific information on the following programs, please see the links to the right:

• Computer Science, Ph.D.