COMPUTER SCIENCE MAJOR

ADMISSION TO THE MAJOR

To declare the computer science major, a student must have

• earned a C or higher in COMP211;
• either earned a C or higher in COMP212 or be enrolled in COMP212 and be
earning a grade of C or higher based on completed work; and
• either earned a C or higher in MATH228 or MATH261 or be enrolled in
MATH228 or MATH261 and be earning a grade of C or higher based on
completed work.

Note: The MATH228 or MATH261 requirement applies to students declaring the
COMP major after June 30, 2016.

MAJOR REQUIREMENTS

To complete the computer science major, a student must complete the following courses:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMP211</td>
<td>Computer Science I</td>
<td>1</td>
</tr>
<tr>
<td>COMP212</td>
<td>Computer Science II</td>
<td>1</td>
</tr>
<tr>
<td>COMP301</td>
<td>Automata Theory and Formal Languages</td>
<td>1</td>
</tr>
<tr>
<td>COMP312</td>
<td>Algorithms and Complexity</td>
<td>1</td>
</tr>
<tr>
<td>COMP321</td>
<td>Design of Programming Languages</td>
<td>1</td>
</tr>
<tr>
<td>COMP331</td>
<td>Computer Structure and Organization (or</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>COMP311 if taken before 2015-2016)</td>
<td></td>
</tr>
<tr>
<td>MATH228</td>
<td>Discrete Mathematics</td>
<td>1</td>
</tr>
<tr>
<td>or MATH261</td>
<td>Abstract Algebra: Groups, Rings, and Fields</td>
<td></td>
</tr>
<tr>
<td>MATH221</td>
<td>Vectors and Matrices</td>
<td>1</td>
</tr>
<tr>
<td>or MATH223</td>
<td>Linear Algebra</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Select two additional electives</td>
<td>2</td>
</tr>
</tbody>
</table>

Notes:

• Any COMP course at the 300+ level except COMP409-COMP410 can be used as an elective for the major.
• At most, one individual or group tutorial may be used as an elective unless prior approval is given.
• Only 1.0-credit courses taken A–F may be used to satisfy major requirements.

STUDENT LEARNING GOALS

• Understanding abstraction: At its heart, computer science is the study of
abstracts for the purpose of understanding computation, and as such
students must learn appropriate levels of abstraction for solving
computational problems. All courses in the curriculum contribute to this
goal.
• Programming: Students must learn how to program in a high-level language,
as such programming is the primary tool in computer science. This is typically

RELATED PROGRAMS OR CERTIFICATES

Informatics and Modeling Certificate. The department is an active participant in the Informatics and Modeling Certificate (wesleyan.edu/imcp). The certificate provides a framework to guide students in developing analytical skills based on the following two pathways:

• Computational Science and Quantitative World Modeling (CSM): wesleyan.edu/imcp/csm.html
• Integrative Genomic Sciences (IGS): wesleyan.edu/imcp/igs.html

The CSM pathway introduces students to modeling techniques and provides students with a foundation in the quantitative simulation, evaluation, and prediction of natural and social phenomena. The IGS pathway introduces students to the interdisciplinary field of bioinformatics and its relationships to molecular genomics, evolution, structural biology, and bioethics. The department offers courses that support both pathways, such as COMP211 and COMP212, and also offers special interdisciplinary courses for the IGS pathway, such as COMP327 and COMP350. The certificate requirements are described in the links for the two pathways.

BA/MA PROGRAM

This program provides an attractive option for mathematic majors to enrich their course and research background. Students are advised to begin research by their junior year if they intend to pursue the BA/MA. Admission is competitive and based on GPA, faculty recommendations, and research experience. For more information, visit wesleyan.edu/grad/degree-programs/ba-ma.html. Advanced undergraduates may enroll in graduate (500-level) courses.

ADDITIONAL INFORMATION

COLLOQUIA AND SEMINARS

Lectures. The departmental colloquium series presents lectures on recent research by invited speakers from other institutions. Advanced undergraduates
are welcome and encouraged to attend these colloquia and to participate in the computer science seminar.

**HONORS**

An undergraduate may achieve the BA with honors in computer science via the following route:

- The honors thesis, written under the supervision of a faculty member under conditions monitored by the University Committee on Honors.