## COMPUTER SCIENCE MAJOR

### Requirements

The computer science major may be taken toward either the Bachelor of Arts (B.A.) or the Bachelor of Science (B.S.) degree. The B.A. degree in computer science requires a total of 14 courses, and the B.S. degree in computer science requires a total of 16 courses.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISC 1400</td>
<td>Discrete Structures</td>
<td>4</td>
</tr>
<tr>
<td>CISC 2100</td>
<td>Discrete Structures II</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CISC 2110</td>
<td>and Discrete Structures II Lab</td>
<td></td>
</tr>
<tr>
<td>CISC 1600</td>
<td>Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CISC 1610</td>
<td>and Computer Science I Lab</td>
<td></td>
</tr>
<tr>
<td>CISC 2000</td>
<td>Computer Science II</td>
<td>4</td>
</tr>
<tr>
<td>&amp; CISC 2010</td>
<td>and Computer Science II Lab</td>
<td></td>
</tr>
<tr>
<td>CISC 2200</td>
<td>Data Structures</td>
<td>4</td>
</tr>
<tr>
<td>CISC 3500</td>
<td>Database Systems</td>
<td>4</td>
</tr>
<tr>
<td>CISC 3593</td>
<td>Computer Organization</td>
<td>4</td>
</tr>
<tr>
<td>CISC 3595</td>
<td>Operating Systems</td>
<td>4</td>
</tr>
<tr>
<td>CISC 4080</td>
<td>Computer Algorithms</td>
<td>4</td>
</tr>
<tr>
<td>CISC 4090</td>
<td>Theory of Computation</td>
<td>4</td>
</tr>
<tr>
<td>CISC 4615</td>
<td>Data Communications and Networks</td>
<td>4</td>
</tr>
</tbody>
</table>

For the Bachelor of Arts degree  
Select two electives

For the Bachelor of Science degree  
CISC 4631 Data Mining  
MATH 1206 Calculus I  
Select three electives

1. For students entering prior to Fall 2015 (class of 2020 or earlier), CISC 4700 Network and Client Server is required instead of CISC 2100 Discrete Structures II.
2. Students who take CISC 1600 during Fordham’s Summer Session do not take CISC 1610, as the summer lecture and lab are offered in a combined format.
3. Elective courses are selected from department courses (which may include some graduate courses) or in cognate areas in consultation with a department adviser. One elective CISC course must be numbered 2000 or above, while the remaining elective must be numbered 3000 or above. The following courses may not count toward this requirement: CISC 4001 Computers and Robots in Film, CISC 4650 Cyberspace: Issues and Ethics, and CISC 4660 Minds, Machines, and Society.
4. Required for students entering in Fall 2017 (class of 2022) and later.
5. MATH 12AB Transfer Calculus AB and MATH 12BC Transfer Calculus BC (transfer credit from AP Calculus AB or AP Calculus BC) also fulfill this requirement.

### 3-2 Engineering Program

Computer science majors pursuing the Cooperative Program in Engineering have a slightly different set of requirements to fulfill to complete their major in computer science. All courses are required.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CISC 1600</td>
<td>Computer Science I</td>
<td></td>
</tr>
<tr>
<td>&amp; CISC 1610</td>
<td>and Computer Science I Lab</td>
<td></td>
</tr>
<tr>
<td>CISC 2000</td>
<td>Computer Science II</td>
<td></td>
</tr>
<tr>
<td>&amp; CISC 2010</td>
<td>and Computer Science II Lab</td>
<td></td>
</tr>
<tr>
<td>CISC 2200</td>
<td>Data Structures</td>
<td></td>
</tr>
<tr>
<td>CISC 3500</td>
<td>Database Systems</td>
<td></td>
</tr>
<tr>
<td>CISC 3593</td>
<td>Computer Organization</td>
<td></td>
</tr>
<tr>
<td>CISC 3595</td>
<td>Operating Systems</td>
<td></td>
</tr>
<tr>
<td>CISC 4080</td>
<td>Computer Algorithms</td>
<td></td>
</tr>
<tr>
<td>CISC 4090</td>
<td>Theory of Computation</td>
<td></td>
</tr>
<tr>
<td>CISC 4615</td>
<td>Data Communications and Networks</td>
<td></td>
</tr>
<tr>
<td>CISC 4631</td>
<td>Data Mining</td>
<td></td>
</tr>
</tbody>
</table>

### Mathematics Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>MATH 1206</td>
<td>Calculus I</td>
<td></td>
</tr>
<tr>
<td>MATH 1207</td>
<td>Calculus II</td>
<td></td>
</tr>
<tr>
<td>MATH 2001</td>
<td>Discrete Mathematics</td>
<td></td>
</tr>
<tr>
<td>MATH 2004</td>
<td>Multivariable Calculus I</td>
<td></td>
</tr>
<tr>
<td>MATH 2005</td>
<td>Multivariable Calculus II</td>
<td></td>
</tr>
<tr>
<td>MATH 2006</td>
<td>Linear Algebra I</td>
<td></td>
</tr>
<tr>
<td>MATH 3002</td>
<td>Differential Equations</td>
<td></td>
</tr>
</tbody>
</table>

### Physics Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHYS 1701</td>
<td>Physics I</td>
<td></td>
</tr>
<tr>
<td>or NSCI 1701</td>
<td>Physics I</td>
<td></td>
</tr>
<tr>
<td>PHYS 1703</td>
<td>Physics I Recitation</td>
<td></td>
</tr>
<tr>
<td>or NSCI 1703</td>
<td>Physics I Recitation</td>
<td></td>
</tr>
<tr>
<td>PHYS 1511</td>
<td>Physics I Lab</td>
<td></td>
</tr>
<tr>
<td>or NSCI 1511</td>
<td>General Physics Lab I</td>
<td></td>
</tr>
<tr>
<td>PHYS 1702</td>
<td>Physics II</td>
<td></td>
</tr>
<tr>
<td>or NSCI 1702</td>
<td>Physics II</td>
<td></td>
</tr>
<tr>
<td>PHYS 1704</td>
<td>Physics II Recitation</td>
<td></td>
</tr>
<tr>
<td>or NSCI 1704</td>
<td>Physics II Recitation</td>
<td></td>
</tr>
<tr>
<td>PHYS 1512</td>
<td>Physics II Lab</td>
<td></td>
</tr>
<tr>
<td>or NSCI 1512</td>
<td>General Physics Lab II</td>
<td></td>
</tr>
</tbody>
</table>

### Chemistry Courses

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHEM 1321</td>
<td>General Chemistry I</td>
<td></td>
</tr>
<tr>
<td>or NSCI 1321</td>
<td>General Chemistry Lecture I</td>
<td></td>
</tr>
<tr>
<td>CHEM 1331</td>
<td>General Chemistry Lab I</td>
<td></td>
</tr>
<tr>
<td>or NSCI 1331</td>
<td>General Chemistry Lab I</td>
<td></td>
</tr>
</tbody>
</table>

1. Students who take CISC 1600 during Fordham’s Summer Session do not take CISC 1610, as the summer lecture and lab are offered in a combined format.
2. MATH 12AB Transfer Calculus AB and MATH 12BC Transfer Calculus BC (transfer credit from AP Calculus AB or AP Calculus BC) also fulfill this requirement.
3. Students at the Lincoln Center campus typically fulfill these requirements via courses with Natural Sciences courses (subject code NSCI). Students at the Rose Hill Campus typically fulfill these requirements with Physics (subject code PHYS) and Chemistry (subject code CHEM) courses.

These courses fulfill only Fordham University’s requirements to earn the B.S. in computer science for 3-2 students. Additional Columbia
requirements need to be fulfilled for acceptance into one of Columbia's engineering tracks. Consult the 3-2 program director for additional guidance.

**Availability**

The major in computer science is available at Fordham College at Rose Hill, Fordham College at Lincoln Center, and Fordham's School of Professional and Continuing Studies at Rose Hill and Lincoln Center.

*Fordham College at Rose Hill students:* The requirements above are in addition to those of the Core Curriculum.

*Fordham College at Lincoln Center students:* The requirements above are in addition to those of the Core Curriculum.

*Professional and Continuing Studies students:* The requirements above are in addition to those of the PCS Core Curriculum and any additional electives that may be required to earn a minimum of 124 credits.