COMPUTER SCIENCE, SYSTEMS, BSCS

Bachelor of Science in Computer Science, Systems (346004BS)

More on the Computer Science, Systems major (https://www.uakron.edu/computer-science/academics/undergraduate-programs/bscs-system.dot)

A variant of the Bachelor of Computer Science program allowing customization of the necessary courses.

Requirements

Summary

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>General Education Requirements (<a href="https://bulletin.uakron.edu/undergraduate/general-education">https://bulletin.uakron.edu/undergraduate/general-education</a>)</td>
<td>34</td>
</tr>
<tr>
<td></td>
<td>College of Arts &amp; Sciences Requirements</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>Preadmission Major Core Requirements</td>
<td>16</td>
</tr>
<tr>
<td></td>
<td>Computer Science - Systems Core</td>
<td>30-32</td>
</tr>
<tr>
<td></td>
<td>Computer Science - Systems Electives</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td>Additional Credits for Graduation*</td>
<td>14-12</td>
</tr>
<tr>
<td></td>
<td>Total Hours</td>
<td>120</td>
</tr>
</tbody>
</table>

* Bachelor’s degrees require a minimum of 120 credit hours for graduation.

Note: A 2.0 GPA is required in all major coursework.

General Education Courses

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Students pursuing a bachelor’s degree must complete three tiers of General Education coursework. Tier I and II provide students with foundational skills and breadth of disciplinary knowledge. Tier III courses require students to integrate knowledge, understand diverse perspectives, and think critically about complex issues. Courses tagged for Tier III may also fulfill major or Disciplinary Area requirements.</td>
</tr>
</tbody>
</table>

**Tier I: Academic Foundations**

- Quantitative Reasoning: 3 credit hours
- Speaking: 3 credit hours
- Writing: 6 credit hours

**Tier II: Disciplinary Areas**

- Arts/Humanities: 9 credit hours
- Natural Sciences: 7 credit hours
- Social Sciences: 6 credit hours

**Tier III: Tagged Courses**

Select one class from each of the following subcategories:

- Complex Systems
- Critical Thinking
- Domestic Diversity
- Global Diversity

College of Arts & Sciences Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Degree requirements in Arts &amp; Sciences include the demonstration of ability to use another language by completion of the second year of a foreign language.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Foreign Language</td>
<td></td>
</tr>
<tr>
<td></td>
<td>101 Beginning I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>102 Beginning II</td>
<td></td>
</tr>
<tr>
<td></td>
<td>201 Intermediate I</td>
<td></td>
</tr>
<tr>
<td></td>
<td>202 Intermediate II</td>
<td></td>
</tr>
<tr>
<td></td>
<td>7700:222 Survey of Deaf Culture in America (American Sign Language option only)</td>
<td></td>
</tr>
</tbody>
</table>

Students must also complete a minimum of 40 credits (excluding workshops) consisting of either:

- Upper-level (300/400) courses both in and outside of the student's major;
- or other courses outside the major department approved by the student’s major department chair (permission should be obtained prior to enrollment); these may not include workshops

Preadmission Major Core Requirements

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3450:208 Introduction to Discrete Mathematics</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>3460:209 Computer Science I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>3460:210 Computer Science II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>3450:221 Analytic Geometry-Calculus I</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Total Hours</td>
<td>16</td>
</tr>
</tbody>
</table>

Computer Science - Systems Core

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3450:222 Analytic Geometry-Calculus II</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>3460:316 Data Structures</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>3460:307 Internet Systems Programming</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>3460:421 Object-Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>3460:435 Algorithms</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>3460:480 Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>3460:490 Senior Seminar in Computer Science</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>3470:401 Probability and Statistics for Engineers</td>
<td>2-4</td>
</tr>
<tr>
<td></td>
<td>or 3470:461 Applied Statistics</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4450:320 Computer Systems</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>4450:325 Operating Systems Concepts</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>or 3460:426 Operating Systems</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total Hours</td>
<td>30-32</td>
</tr>
</tbody>
</table>

1 Counts as a College of Arts & Sciences upper level course.
# Computer Science - Systems Electives

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select a minimum of nine credits of 3460 upper level electives</td>
<td>9</td>
<td></td>
</tr>
<tr>
<td>3460:3xx</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3460:4xx</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Select a minimum of six additional credits of approved 300 and/or 400 electives in Computer Science (3460) or related to Computer Science from the following pre-approved list:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>2440:204</td>
<td>WAN Technologies</td>
<td></td>
</tr>
<tr>
<td>3350:405</td>
<td>Geographic Information Systems</td>
<td></td>
</tr>
<tr>
<td>3350:407</td>
<td>Advanced Geographic Information Systems</td>
<td></td>
</tr>
<tr>
<td>3450:312</td>
<td>Linear Algebra</td>
<td></td>
</tr>
<tr>
<td>3450:410</td>
<td>Advanced Linear Algebra</td>
<td></td>
</tr>
<tr>
<td>3450:415</td>
<td>Combinatorics &amp; Graph Theory</td>
<td></td>
</tr>
<tr>
<td>3450:427</td>
<td>Applied Numerical Methods I</td>
<td></td>
</tr>
<tr>
<td>3450:428</td>
<td>Applied Numerical Methods II</td>
<td></td>
</tr>
<tr>
<td>3450:430</td>
<td>Numerical Solutions for Partial Differential Equations</td>
<td></td>
</tr>
<tr>
<td>3450:436</td>
<td>Mathematical Models</td>
<td></td>
</tr>
<tr>
<td>3470:480</td>
<td>Statistical Data Management</td>
<td></td>
</tr>
<tr>
<td>4450:410</td>
<td>Embedded Scientific Computing</td>
<td></td>
</tr>
<tr>
<td>4450:415</td>
<td>System Simulation</td>
<td></td>
</tr>
<tr>
<td>4450:420</td>
<td>Computer Systems Design</td>
<td></td>
</tr>
<tr>
<td>4450:422</td>
<td>Embedded Systems Interfacing</td>
<td></td>
</tr>
<tr>
<td>4450:427</td>
<td>Computer Networks</td>
<td></td>
</tr>
<tr>
<td>4450:440</td>
<td>Digital Signal Processing</td>
<td></td>
</tr>
<tr>
<td>4450:462</td>
<td>Analog Integrated Circuit Design</td>
<td></td>
</tr>
<tr>
<td>4450:465</td>
<td>Programmable Logic</td>
<td></td>
</tr>
<tr>
<td>4450:467</td>
<td>VLSI Circuits &amp; Systems</td>
<td></td>
</tr>
<tr>
<td>4800:420</td>
<td>Biomedical Signal &amp; Image Processing</td>
<td></td>
</tr>
<tr>
<td>7100:489</td>
<td>Special Topics in Studio Art (ST: Game Design)</td>
<td></td>
</tr>
<tr>
<td>3460:3xx</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3460:4xx</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The following course does not satisfy this requirement:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>3460:406</td>
<td>Introduction to C &amp; UNIX</td>
<td>15</td>
</tr>
</tbody>
</table>

1. Only 3 credits of 3460:395 Internship in Computer Science may count toward the Computer Science - Systems Electives.
2. 3460:489 Topics in Computer Science may be repeated under different topics.