Computer Science, BS

Computer Science, BS Requirements:

• Computer Science, BS degree requires 128 credit hours.
• 39 of 128 credit hours must be taken at 300 level or higher (39 credits includes courses taken at the 300+ level in major, minor (if chosen), Pre professional area and electives).
• 12 credit hours of 300 level and above must be taken in the major--or 6 credit hours in the major and 6 credit hours in the minor (if chosen).
• 12 of the last 18 credit hours must be taken at UAH, with an overall 25% of coursework taken at UAH.
• No more than 64 credit hours from a two-year college can be applied toward a UAH degree.
• For graduation application instructions, see here (http://catalog.uah.edu/undergrad/policies-procedures/application-graduation).

Degree Requirements

Freshman Composition

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EH 101</td>
<td>FRESHMAN COMPOSITION</td>
</tr>
<tr>
<td>EH 102</td>
<td>FRESHMAN COMPOSITION</td>
</tr>
</tbody>
</table>

Humanities and Fine Arts

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARH 100</td>
<td>ARH SURV:ANCIENT-MEDIEVAL</td>
</tr>
<tr>
<td>ARH 101</td>
<td>ARH SURV:RENAISSANCE-MODERN</td>
</tr>
<tr>
<td>ARH 103</td>
<td>ARH SUR:NON-WESTERN TRADITIONS</td>
</tr>
<tr>
<td>CM 122</td>
<td>THEATER APPRECIATION</td>
</tr>
<tr>
<td>ARS 160</td>
<td>DRAWING: FOUNDATIONS</td>
</tr>
<tr>
<td>MU 100</td>
<td>INTRO TO MUSIC LITERATURE</td>
</tr>
</tbody>
</table>

Literature: Choose one

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EH 207</td>
<td>READINGS LITERATURE/CULTURE I</td>
</tr>
<tr>
<td>EH 208</td>
<td>READINGS LITERATURE/CULTURE 2</td>
</tr>
</tbody>
</table>

Speech

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CM 113</td>
<td>Intro to Rhetorical Communication</td>
</tr>
</tbody>
</table>

Mathematics and Sciences

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA 171</td>
<td>CALCULUS A</td>
</tr>
</tbody>
</table>

Natural Sciences: Choose one sequence in Biology, Chemistry, or Physics

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BYS 119 &amp; BYS 120</td>
<td>PRINCIPLES OF BIOLOGY and ORGANISMAL BIOLOGY</td>
</tr>
</tbody>
</table>

or

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH 121 &amp; CH 125</td>
<td>GENERAL CHEMISTRY I and GENERAL CHEMISTRY LAB I</td>
</tr>
</tbody>
</table>

and

<table>
<thead>
<tr>
<th>Course</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CH 123 &amp; CH 126</td>
<td>GENERAL CHEMISTRY II and GENERAL CHEMISTRY LAB II</td>
</tr>
</tbody>
</table>

or
Computer Science, BS

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>PH 111</td>
<td>GEN PHYSICS W/CALCULUS I</td>
</tr>
<tr>
<td>&amp; PH 114</td>
<td>and GENERAL PHYSICS LAB I</td>
</tr>
<tr>
<td></td>
<td>and</td>
</tr>
<tr>
<td>PH 112</td>
<td>GEN PHYSICS W/CALC II</td>
</tr>
<tr>
<td>&amp; PH 115</td>
<td>and GENERAL PHYSICS LAB II</td>
</tr>
<tr>
<td></td>
<td><strong>History and Social and Behavioral Sciences</strong> 12</td>
</tr>
<tr>
<td>HY 103</td>
<td>WORLD HISTORY TO 1500</td>
</tr>
<tr>
<td>HY 104</td>
<td>WORLD HISTORY SINCE 1500</td>
</tr>
<tr>
<td>HY 221</td>
<td>UNITED STATES TO 1877</td>
</tr>
<tr>
<td>HY 222</td>
<td>UNITED STATES SINCE 1877</td>
</tr>
<tr>
<td></td>
<td><strong>Social and Behavioral Sciences: Choose two</strong> 6</td>
</tr>
<tr>
<td>ECN 142</td>
<td>PRINC OF MACROECONOMICS</td>
</tr>
<tr>
<td>ECN 143</td>
<td>PRINC OF MICROECONOMICS</td>
</tr>
<tr>
<td>PSC 101</td>
<td>AMERICAN GOVERNMENT</td>
</tr>
<tr>
<td>PSC 102</td>
<td>COMP POLITICS &amp; FOREIGN GOVT</td>
</tr>
<tr>
<td>PSC 260</td>
<td>INTRODUCTION TO INTERNATIONAL RELATIONS</td>
</tr>
<tr>
<td>GY 105</td>
<td>WORLD REGIONAL GEOGRAPHY</td>
</tr>
<tr>
<td>GY 110</td>
<td>PRINCIPLES OF HUMAN GEOGRAPHY</td>
</tr>
<tr>
<td>GS 200</td>
<td>GLOBAL SYSTEMS AND CULTURES</td>
</tr>
<tr>
<td>SOC 100</td>
<td>INTRO TO SOCIOLOGY</td>
</tr>
<tr>
<td>SOC 102</td>
<td>ANALYSIS OF SOCIAL PROBLEMS</td>
</tr>
<tr>
<td>SOC 105</td>
<td>INTRO CULTURAL ANTHROPOLOGY</td>
</tr>
<tr>
<td>SOC 150</td>
<td>SOCIOCLOGICAL PERSP TECH &amp; SCI</td>
</tr>
<tr>
<td>PY 101</td>
<td>GENERAL PSYCHOLOGY I</td>
</tr>
<tr>
<td>PY 201</td>
<td>LIFE-SPAN DEVELOPMENT</td>
</tr>
<tr>
<td></td>
<td><strong>Pre Professional</strong> 23-24</td>
</tr>
<tr>
<td>CS 102</td>
<td>INTRO TO C PROGRAMMING</td>
</tr>
<tr>
<td>CS 103</td>
<td>INTRO PROGRAMMING USING JAVA</td>
</tr>
<tr>
<td></td>
<td><strong>Technical Writing</strong> 3</td>
</tr>
<tr>
<td>EH 301</td>
<td>TECHNICAL WRITING</td>
</tr>
<tr>
<td></td>
<td><strong>Additional Lab Science: Choose one option</strong> 4</td>
</tr>
<tr>
<td>CH 121</td>
<td>GENERAL CHEMISTRY I</td>
</tr>
<tr>
<td>&amp; CH 125</td>
<td>and GENERAL CHEMISTRY LAB I</td>
</tr>
<tr>
<td>AST 106</td>
<td>EXPLORING THE COSMOS I</td>
</tr>
<tr>
<td>PH 111</td>
<td>GEN PHYSICS W/CALCULUS I</td>
</tr>
<tr>
<td>&amp; PH 114</td>
<td>and GENERAL PHYSICS LAB I</td>
</tr>
<tr>
<td>PH 113</td>
<td>GEN PHYSICS W/CALC III</td>
</tr>
<tr>
<td>&amp; PH 116</td>
<td>and GENERAL PHYSICS LAB III</td>
</tr>
<tr>
<td>ESS 119</td>
<td>PRINCIPLES OF BIOLOGY</td>
</tr>
<tr>
<td>ESS 103</td>
<td>ENVIR EARTH SCI FND &amp; APPLICA</td>
</tr>
<tr>
<td>ESS 111</td>
<td>CLIMATE AND GLOBAL CHANGE</td>
</tr>
<tr>
<td></td>
<td><strong>Additional Required Mathematics</strong> 13-14</td>
</tr>
<tr>
<td>MA 172</td>
<td>CALCULUS B</td>
</tr>
<tr>
<td>MA 244</td>
<td>INTRO TO LINEAR ALGEBRA</td>
</tr>
<tr>
<td>MA 385</td>
<td>INTRO TO PROBABILITY &amp; STATIST</td>
</tr>
<tr>
<td>MA 200+</td>
<td>5</td>
</tr>
</tbody>
</table>
# Computer Science Major Requirements

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 105</td>
<td>COMP SCI SEM:ETH/PROFESS</td>
</tr>
<tr>
<td>CS 121</td>
<td>COMPUTER SCIENCE I</td>
</tr>
<tr>
<td>CS 214</td>
<td>INTRO DISCRETE STRUCTURE</td>
</tr>
<tr>
<td>CS 221</td>
<td>COMP SCI II: DATA STRUCTURES</td>
</tr>
<tr>
<td>CS 308</td>
<td>COMP ORGAN &amp; ASSEM LANG PROG</td>
</tr>
<tr>
<td>CS 309</td>
<td>SWITCHING THEORY</td>
</tr>
<tr>
<td>&amp; 309L</td>
<td>and LABORATORY</td>
</tr>
<tr>
<td>CS 317</td>
<td>INTRO DESIGN/ANAL OF ALG</td>
</tr>
<tr>
<td>CS 321</td>
<td>INTRO OBJECT-ORIENTED PROG JAV</td>
</tr>
<tr>
<td>CS 413</td>
<td>INTRO DIGITAL COMP DESIGN</td>
</tr>
<tr>
<td>&amp; 413L</td>
<td>and LABORATORY</td>
</tr>
<tr>
<td>CS 424</td>
<td>PROGRAMMING LANGUAGES</td>
</tr>
<tr>
<td>CS 490</td>
<td>INTRO TO OPERATING SYSTEMS</td>
</tr>
<tr>
<td>CS 499</td>
<td>SR PROJ:TEAM SOFTWARE DESIGN</td>
</tr>
<tr>
<td>CS Elective 300+</td>
<td></td>
</tr>
<tr>
<td>CS Elective 300+</td>
<td></td>
</tr>
<tr>
<td>CS Elective 400+</td>
<td></td>
</tr>
<tr>
<td>CS Elective 400+</td>
<td></td>
</tr>
</tbody>
</table>

**Technical Elective: Choose one**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPE 412</td>
<td>INTRO TO PARALLEL PROGRAMMING</td>
</tr>
<tr>
<td>CPE 436</td>
<td>INTERNALS OF MODERN OPER SYS</td>
</tr>
<tr>
<td>PHL 320</td>
<td>SYMBOLIC LOGIC</td>
</tr>
<tr>
<td>IS 400+</td>
<td></td>
</tr>
<tr>
<td>Any College of Science Course 300+</td>
<td></td>
</tr>
</tbody>
</table>

**Elective Courses**

Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 credits of 100 level HPE courses can count toward degree requirements.

**Total Semester Hours**

<table>
<thead>
<tr>
<th></th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>128</td>
</tr>
</tbody>
</table>

1. Students must take one literature and one history course. Students must also take either a second literature or history course to complete a sequence. (EH 207 + EH 208, EH 209 + EH 210, HY 103 + HY 104, or HY 221 + HY 222)

2. Based on Math placement (http://www.uah.edu/science/departments/math/undergraduate-students/placement), prerequisite (MA 112 and/or MA 113) Mathematics courses may be required.

3. No more than 6 hours can be taken in a single discipline.

4. For choices see the World Languages and Culture (http://catalog.uah.edu/undergrad/colleges-departments/arts-humanities-social-sciences/foreign-languages-literatures/#coursestext) department.

5. To complete Math minor, choose MA 201 and take one additional MA 300+ course.

## Sample four year plan for Computer Science, BS degree:

Note: This is only an example and variations are possible.

### Year 1

**Fall**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EH 101</td>
<td>FRESHMAN COMPOSITION</td>
<td>3</td>
</tr>
<tr>
<td>CS 102</td>
<td>INTRO TO C PROGRAMMING</td>
<td>3</td>
</tr>
<tr>
<td>CS 105</td>
<td>COMP SCI SEM:ETH/PROFESS</td>
<td>1</td>
</tr>
<tr>
<td>MA 171</td>
<td>CALCULUS A</td>
<td>4</td>
</tr>
<tr>
<td>FYE 101</td>
<td>CHARGER SUCCESS</td>
<td>1</td>
</tr>
<tr>
<td>Lab Science</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

See Requirements tab for approved list.

**Term Semester Hours:**

<table>
<thead>
<tr>
<th></th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

**Spring**

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>EH 102</td>
<td>FRESHMAN COMPOSITION</td>
<td>3</td>
</tr>
<tr>
<td>Year</td>
<td>Term</td>
<td>Course Code</td>
</tr>
<tr>
<td>------</td>
<td>------</td>
<td>-------------</td>
</tr>
<tr>
<td>2</td>
<td>Fall</td>
<td>CS 221</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CS 214</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MA 201</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lab Science</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Literature</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spring</td>
<td>CS 309</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CS 321</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MA 244</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Humanities, 2nd Fine art or 2nd Literature</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social/Behavioral science</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Fall</td>
<td>CS 308</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CS 317</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MA 385</td>
</tr>
<tr>
<td></td>
<td></td>
<td>History</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social/Behavioral science</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Elective</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spring</td>
<td>CS 413</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CS 300+ elective course</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MA 300+ course, if Math minor is chosen.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2nd History or 3rd Social/Behavioral science</td>
</tr>
<tr>
<td></td>
<td></td>
<td>CM 113</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Year 4

#### Fall

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 490</td>
<td>INTRO TO OPERATING SYSTEMS</td>
<td>3</td>
</tr>
<tr>
<td>CS 424</td>
<td>PROGRAMMING LANGUAGES</td>
<td>3</td>
</tr>
<tr>
<td>CS 300+ Elective course</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Technical Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Choose from: Any 300+ level or higher class in the College of Science, IS 400+ course, CPE 412, CPE 436, or PHL 320</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EH 301</td>
<td>TECHNICAL WRITING</td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 HPE 100 level courses can count toward degree requirements.

**Term Semester Hours:** 16

#### Spring

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Semester Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 499</td>
<td>SR PROJ:TEAM SOFTWARE DESIGN</td>
<td>3</td>
</tr>
<tr>
<td>CS 400+ Elective course</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>CS 400+ elective course</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>Elective</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 HPE 100 level courses can count toward degree requirements.

**Term Semester Hours:** 16

**Total Semester Hours:** 128