The UAA Bachelor of Arts in Computer Science Recommended Course Sequence & Prerequisites Flowchart for the academic year 2014/2015.

**High School or Equivalent**
- Math Placement Test OR MATH 107, 108, or 109
- MATH 105, 107, 108, or 109, or placement into MATH 200

**Freshman**
- **Fall:** 14 credits
  - MATH 200 (4) Calculus I (or MATH 272)
  - MATH 231 (3) Discrete Math
  - ENGL 111 (3) Written Comm.
- **Spring:** 13 credits
  - STAT 253 (4) Probability (or STAT 307)
  - CSCE 201 (4) Programming I
  - See your advisor for selection of GER courses

**Sophomore**
- **Fall:** 15-16 credits
  - Language/ Humanities (3-4)
  - HIST 101 (3) Western Civ. I
- **Spring:** 15-16 credits
  - Language/ Humanities (3-4)
  - HIST 102 (3) Western Civ. II

**Junior**
- **Fall:** 15 credits
  - American Culture (3)
  - Ways of Knowing (3)
  - ENGL 312 (3) Adv. Technical Writing (or ENGL 414)
- **Spring:** 15 credits
  - ANTH 250 (3) Rise of Civilization
  - Upper Division CSCE Elective (3)
  - CSCE 385 (3) Computer Networks

**Senior**
- **Fall:** 15 credits
  - Fine Arts (3)
  - Nat Sci (3)
  - Upper Division CSCE Elective (3)
  - PHIL A305 (3) Prof. Ethics
- **Spring:** 13 credits
  - Nat Sci & Lab (4)
  - Upper Division CSCE Elective (3)
  - Upper Division CSCE Elective (3)
  - CSCE 470 (3) CS&E Capstone

**Key:**
- Major Requirement
- GER
- Upper Division CSCE Elective

Find more information on the web at [http://www.uaa.alaska.edu/schoolofengineering](http://www.uaa.alaska.edu/schoolofengineering)

V. 7-7-2014

120 Total Credits Required for the degree, of which 42 must be upper division.
Bachelor of Arts in Computer Science  

**Fall Year 1 (14 credits)**  
- CSCE A201  
  Computer Programming I (Java)  
  4  
- ENGL A111  
  Methods of Written Comm.  
  3  
- MATH A200 or 272  
  Calculus I  
  4  
- MATH A231  
  Intro to Discrete Math  
  3

**Fall Year 2 (15-16 credits)**  
- CSCE A311  
  Data Structures & Algorithms  
  3  
- ENGL A212  
  Technical Writing  
  3  
- HIST A101  
  Western Civilization I  
  3  
- ENGL A121, 301, 302, 305, 306, or 307  
  Humanities/Foreign Language  
  3-4

**Fall Year 3 (15 credits)**  
- ENGL A312 or 414  
  Advanced Technical Writing  
  3  
- CSCE A320  
  Operating Systems  
  3  
- ENGL A120, PHIL A101, A201, A301, or A421  
  3  
- HIST A131, A132, or PS A101  
  3  
- Social Sciences GER/Social Behavior  
  3

**Fall Year 4 (15 credits)**  
- CSCE A401  
  Software Engineering  
  3  
- PHIL A305  
  Professional Ethics  
  3  
- **Upper Division CSCE Elective**  
  3  
- Fine Arts GER  
  3  
- Natural Science GER  
  3

**Spring Year 1 (15 credits)**  
- CSCE A222  
  Object Oriented Programming  
  3  
- CSCE A211  
  Computer Programming II  
  4  
- CSCE A241  
  Computer Hardware Concepts  
  4  
- STAT A307 or 253  
  Probability  
  4

**Spring Year 2 (15-16 credits)**  
- CSCE A351  
  Automata, Algorithms, & Complexity  
  3  
- CSCE A248  
  Computer Org. & Assembly  
  3  
- CSCE A360  
  Database Systems  
  3  
- HIST A102  
  Western Civilization II  
  3  
- Humanities/Foreign Language  
  3-4

**Spring Year 3 (15 credits)**  
- CSCE A331  
  Programming Language Concepts  
  3  
- CSCE A365  
  Computer Networks  
  3  
- ANTH A250  
  The Rise of Civilization  
  3  
- **Upper Division CSCE Elective**  
  3  
- COMM A111, 235, 237, or 241  
  3

**Spring Year 4 (13 credits)**  
- CSCE A470  
  CS&E Capstone Project  
  3  
- **Upper Division CSCE Elective**  
  3  
- **Upper Division CSCE Elective**  
  3  
- Natural Science GER  
  4

A total of 120 credits is required for this degree, 42 of which must be upper division. Any additional credits to reach 120 total must be earned at the 100 level or higher.

**Upper Division Computer Science Electives**

<table>
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<tr>
<th>Course</th>
<th>Number</th>
<th>Title</th>
<th>Course</th>
<th>Number</th>
<th>Title</th>
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<tr>
<td>CSCE</td>
<td>A302</td>
<td>Design Patterns</td>
<td>CSCE</td>
<td>A446</td>
<td>Digital Media &amp; Interactive Systems</td>
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<td>CSCE</td>
<td>A305</td>
<td>Android Programming</td>
<td>CSCE</td>
<td>A448</td>
<td>Computer Architecture</td>
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<td>CSCE</td>
<td>A385</td>
<td>Computer Graphics</td>
<td>CSCE</td>
<td>A450</td>
<td>Robotics</td>
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<td>CSCE</td>
<td>A395</td>
<td>Internship in Computing</td>
<td>CSCE</td>
<td>A460</td>
<td>Advanced Database Systems</td>
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<tr>
<td>CSCE</td>
<td>A411</td>
<td>Artificial Intelligence</td>
<td>CSCE</td>
<td>A462</td>
<td>Data Mining</td>
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<tr>
<td>CSCE</td>
<td>A412</td>
<td>Evolutionary Computing</td>
<td>CSCE</td>
<td>A485</td>
<td>Computer &amp; Machine Vision</td>
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<tr>
<td>CSCE</td>
<td>A415</td>
<td>Machine Learning</td>
<td>CSCE</td>
<td>A490</td>
<td>Topics in Computer Science</td>
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<tr>
<td>CSCE</td>
<td>A431</td>
<td>Compilers</td>
<td>CSCE</td>
<td>A498</td>
<td>Individual Research</td>
</tr>
</tbody>
</table>

**Students completing the Bachelor of Arts need an additional 12 upper division credits in CSCE, Mathematics (excluding MATH A420 and MATH A495), or Statistics. Nine of these credits must be in courses with a CSCE prefix. A maximum of 3 credits of CSCE A395, a maximum of 3 credits of CSCE A495, and a maximum of 6 credits of CSCE A498 may be applied to degree requirements.**