### 2021 - 2022 Major Map

**Applied Computing, BS**

**School/College:** New College of Interdisciplinary Arts and Sciences  
**Location:** West campus, ASU@Lake Havasu  
**ASACOBS**

#### Term 1 0 - 16 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACO 101: Introduction to Computer Science (CS)</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 101 or ENG 102: First-Year Composition</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 105: Advanced First-Year Composition</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 107 or ENG 108: First-Year Composition</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>NEW 101-M: The ASU New College Experience</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Historical Awareness (H)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social-Behavioral Sciences (SB)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 16

**Critical course signified by ⚫**

- Prerequisite MAT coursework may be required in Term 1 to prepare for MAT 210 (or higher-level MA) in Term 2. MAT 117 with a C or better serves as a prerequisite for MAT 210.
- ASU 101 or college-specific First-Year Seminar required of all first-year students. NEW 101-M satisfies this requirement.
- IAS 300 (3 credit hours) is required for all transfer students in place of NEW 101-M.
- Select your Career Interest Communities and play me3@ASU.
- Activate your Handshake account and build out your profile.

#### Term 2 16 - 32 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACO 102: Object-Oriented Programming (CS)</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>MAT 210: Brief Calculus (MA) OR MAT 251: Calculus for Life Sciences (MA)</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 101 or ENG 102: First-Year Composition</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 105: Advanced First-Year Composition</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>ENG 107 or ENG 108: First-Year Composition</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Global Awareness (G)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete ENG 101 OR ENG 105 OR ENG 107 course(s).</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 16

**Critical course signified by ⚫**

- Completion of ACO 101 and ACO 102 (with a C or better) fulfills the New College Proficiency - Language and Cultures requirement.
- MAT 210 or higher-level (MA) accepted. MAT 251 recommended.
- Create a first draft resume.
- Join a student club or professional organization.
- Secure a part-time job or volunteer experience.

#### Term 3 32 - 47 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACO 201: Data Structures and Algorithms (CS)</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>MAT 243: Discrete Mathematical Structures</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Cultural Diversity in the U.S. (C)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humanities, Arts and Design (HU)</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete First-Year Composition requirement.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Complete Mathematics (MA) requirement.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 15

**Critical course signified by ⚫**

- Develop your research skills.
- Develop your professional skills.
- Build your professional connections -- join the ASU Mentor Network.
### Term 4 - 47 - 62 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACO 240: Introduction to Programming Languages</td>
<td>3</td>
<td>C</td>
<td>• Explore an internship, an IGLE international experience, or ASU study abroad.</td>
</tr>
<tr>
<td>STP 226: Elements of Statistics (CS)</td>
<td>3</td>
<td>C</td>
<td>• Explore an internship, an IGLE international experience, or ASU study abroad.</td>
</tr>
<tr>
<td>Humanities, Arts and Design (HU)</td>
<td>3</td>
<td>C</td>
<td>• Explore an internship, an IGLE international experience, or ASU study abroad.</td>
</tr>
<tr>
<td>Literacy and Critical Inquiry (L)</td>
<td>3</td>
<td>C</td>
<td>• Explore an internship, an IGLE international experience, or ASU study abroad.</td>
</tr>
<tr>
<td>Social-Behavioral Sciences (SB)</td>
<td>3</td>
<td>C</td>
<td>• Explore an internship, an IGLE international experience, or ASU study abroad.</td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 15

### Term 5 - 52 - 75 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACO 320: Database Systems</td>
<td>3</td>
<td>C</td>
<td>• IAS 300 (3 credit hours) is required for all transfer students.</td>
</tr>
<tr>
<td>ACO 330: Computer Networks</td>
<td>3</td>
<td>C</td>
<td>• Thinking about graduate school? Consider registering for a grad school test prep course.</td>
</tr>
<tr>
<td>Upper Division Literacy and Critical Inquiry (L) OR IAS 300: Career Strategies and Personal Resilience (L or SB)</td>
<td>3</td>
<td>C</td>
<td>• Develop your professional online presence.</td>
</tr>
<tr>
<td>Natural Science - Quantitative (SQ) OR Natural Science - General (SG)</td>
<td>4</td>
<td>C</td>
<td>• Develop your professional online presence.</td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 13

### Term 6 - 67 - 90 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACO 350: Systems Programming (CS)</td>
<td>3</td>
<td>C</td>
<td>• Use Handshake to research employment opportunities.</td>
</tr>
<tr>
<td>Upper Division Applied Computing Elective</td>
<td>3</td>
<td>C</td>
<td>• Complete an in person or virtual practice interview.</td>
</tr>
<tr>
<td>Upper Division Communication Elective</td>
<td>3</td>
<td>C</td>
<td>• Complete Cultural Diversity in the U.S. (C) AND Global Awareness (G) AND Historical Awareness (H) course(s).</td>
</tr>
<tr>
<td>Liberal Arts Elective</td>
<td>3</td>
<td>C</td>
<td>• Complete ACO 320 AND ACO 330 course(s).</td>
</tr>
<tr>
<td>Elective</td>
<td>3</td>
<td>C</td>
<td>• Complete ACO 320 AND ACO 330 course(s).</td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 15

### Term 7 - 79 - 105 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Division Applied Computing Capstone Semester 1</td>
<td>3</td>
<td>C</td>
<td>• Completion of ACO 320 and ACO 330 with a C or better is required to enroll in ACO 484 and ACO 499. ACO 484 and ACO 499 may not be taken concurrently, and is limited to a maximum of three credit hours per semester (six hours total in the major). Subject of study must include databases, networks or cyber-security; faculty approval required.</td>
</tr>
<tr>
<td>Upper Division Applied Computing Elective</td>
<td>3</td>
<td>C</td>
<td>• Completion of ACO 320 and ACO 330 with a C or better is required to enroll in ACO 484 and ACO 499. ACO 484 and ACO 499 may not be taken concurrently, and is limited to a maximum of three credit hours per semester (six hours total in the major). Subject of study must include databases, networks or cyber-security; faculty approval required.</td>
</tr>
<tr>
<td>Upper Division Ethics Elective AND Upper Division Humanities, Arts and Design (HU)</td>
<td>3</td>
<td>C</td>
<td>• Completion of ACO 320 and ACO 330 with a C or better is required to enroll in ACO 484 and ACO 499. ACO 484 and ACO 499 may not be taken concurrently, and is limited to a maximum of three credit hours per semester (six hours total in the major). Subject of study must include databases, networks or cyber-security; faculty approval required.</td>
</tr>
<tr>
<td>Upper Division Liberal Arts Elective</td>
<td>3</td>
<td>C</td>
<td>• Completion of ACO 320 and ACO 330 with a C or better is required to enroll in ACO 484 and ACO 499. ACO 484 and ACO 499 may not be taken concurrently, and is limited to a maximum of three credit hours per semester (six hours total in the major). Subject of study must include databases, networks or cyber-security; faculty approval required.</td>
</tr>
<tr>
<td>Diversity Elective</td>
<td>3</td>
<td>C</td>
<td>• Completion of ACO 320 and ACO 330 with a C or better is required to enroll in ACO 484 and ACO 499. ACO 484 and ACO 499 may not be taken concurrently, and is limited to a maximum of three credit hours per semester (six hours total in the major). Subject of study must include databases, networks or cyber-security; faculty approval required.</td>
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</table>

**Term hours subtotal:** 15

### Term 8 - 88 - 120 Credit Hours

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
<th>Minimum Grade</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper Division Applied Computing Capstone Semester 2</td>
<td>3</td>
<td>C</td>
<td>• Completion of ACO 320 and ACO 330 with a C or better is required to enroll in ACO 484 and ACO 499. ACO 484 and ACO 499 may not be taken concurrently, and is limited to a maximum of three credit hours per semester (six hours total in the major). Subject of study must include databases, networks or cyber-security; faculty approval required.</td>
</tr>
<tr>
<td>Upper Division Applied Computing Elective</td>
<td>3</td>
<td>C</td>
<td>• Completion of ACO 320 and ACO 330 with a C or better is required to enroll in ACO 484 and ACO 499. ACO 484 and ACO 499 may not be taken concurrently, and is limited to a maximum of three credit hours per semester (six hours total in the major). Subject of study must include databases, networks or cyber-security; faculty approval required.</td>
</tr>
<tr>
<td>Upper Division Liberal Arts Elective</td>
<td>3</td>
<td>C</td>
<td>• Completion of ACO 320 and ACO 330 with a C or better is required to enroll in ACO 484 and ACO 499. ACO 484 and ACO 499 may not be taken concurrently, and is limited to a maximum of three credit hours per semester (six hours total in the major). Subject of study must include databases, networks or cyber-security; faculty approval required.</td>
</tr>
<tr>
<td>Complete 2 courses: Upper Division Elective</td>
<td>6</td>
<td>C</td>
<td>• Completion of ACO 320 and ACO 330 with a C or better is required to enroll in ACO 484 and ACO 499. ACO 484 and ACO 499 may not be taken concurrently, and is limited to a maximum of three credit hours per semester (six hours total in the major). Subject of study must include databases, networks or cyber-security; faculty approval required.</td>
</tr>
</tbody>
</table>

**Term hours subtotal:** 15
<table>
<thead>
<tr>
<th>Upper Division Applied Computing Electives</th>
<th>Upper Division Applied Computing Capstone</th>
<th>Upper Division Communication Elective</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACO 321: Database Development &amp; Applications</td>
<td>ACO 484: Internship</td>
<td>COM 316: Gender and Communication (SB &amp; C)</td>
</tr>
<tr>
<td>ACO 331: Network Forensics Analysis</td>
<td>ACO 499: Individualized Instruction</td>
<td>COM 317: Nonverbal Communication (SB)</td>
</tr>
<tr>
<td>ACO 351: Governance, Risk and Compliance</td>
<td></td>
<td>COM 353: Professional Communication</td>
</tr>
<tr>
<td>ACO 361: Secure Coding Concepts</td>
<td></td>
<td>COM 371: Language, Culture, and Communication (SB &amp; C &amp; G)</td>
</tr>
<tr>
<td>ACO 394: Special Topics</td>
<td></td>
<td>COM 415: Risk Communication</td>
</tr>
<tr>
<td>ACO 420: Big Data Systems</td>
<td></td>
<td>COM 416: Gender and Race in the Media</td>
</tr>
<tr>
<td>ACO 421: Data Mining and Warehousing</td>
<td></td>
<td>COM 457: New Media</td>
</tr>
<tr>
<td>ACO 423: Data Science</td>
<td></td>
<td>COM 459: Theory and Methods of Social Media Networks</td>
</tr>
<tr>
<td>ACO 430: Wireless Networks</td>
<td></td>
<td>COM 471: Global Media and Cultural Identity (G)</td>
</tr>
<tr>
<td>ACO 431: Network Security</td>
<td></td>
<td>COM 477: Sport, Culture, and Discourses</td>
</tr>
<tr>
<td>ACO 432: Distributed Systems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACO 461: Security Operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ACO 494: Special Topics</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Upper Division Ethics Electives</th>
<th>Diversity Electives</th>
<th>Liberal Arts Electives</th>
</tr>
</thead>
<tbody>
<tr>
<td>IAS 340: Bioethics (HU)</td>
<td>ASB 211: Women in Other Cultures ((HU or SB) &amp; G)</td>
<td>AMS Elective</td>
</tr>
<tr>
<td>IAS 406: Moral Dilemmas (L or HU) or PHI 406: Moral Dilemmas (L or HU)</td>
<td>COM 263: Elements of Intercultural Communication (SB &amp; C &amp; G)</td>
<td>ASB Elective</td>
</tr>
<tr>
<td>IAS 407: Environmental Philosophy and Policy (L or HU) or PHI 407: Environmental Philosophy and Policy (L or HU)</td>
<td>ENG 317: Cross-Cultural Writing ((L or HU) &amp; G)</td>
<td>COM Elective</td>
</tr>
<tr>
<td>IAS 409: Eco-Community Ethics (HU) or PHI 409: Eco-Community Ethics (HU)</td>
<td>POS 480: Global Justice (G) or SBS 480: Global Justice (G)</td>
<td>DST Elective</td>
</tr>
<tr>
<td>PHI 306: Applied Ethics (HU)</td>
<td>PSY 385: Psychology of Gender (SB)</td>
<td>ENG Elective</td>
</tr>
<tr>
<td>PHI 360: Business and Professional Ethics (HU)</td>
<td>REL 390: Women, Gender and Religion (HU &amp; G) or WST 390: Women, Gender and Religion (HU &amp; G)</td>
<td>ETH Elective</td>
</tr>
<tr>
<td></td>
<td>SBS 301: Cultural Diversity ((L or SB) &amp; C)</td>
<td>HRC Elective</td>
</tr>
<tr>
<td></td>
<td>WST 220: Gender, Media and Culture (HU &amp; C)</td>
<td>HST Elective</td>
</tr>
</tbody>
</table>

• Apply for full-time career opportunities.
Notes:

• First-Year Composition: All students are placed in ENG 101 unless submission of SAT, ACT, Accuplacer, IELTS, or TOEFL score, or college-level transfer credit or test credit equivalent to ASU's first-year composition course(s), determine otherwise. Students on Polytechnic, Downtown Phoenix and West Campuses are encouraged to complete the Directed Self-Placement survey to choose the first-year composition option they believe best suits their needs. Visit: https://cisa.asu.edu/DSP
• Mathematics Placement Assessment score determines placement in first mathematics course.

General University Requirements Legend

General Studies Core Requirements:
• Literacy and Critical Inquiry (L)
• Mathematical Studies (MA)
• Computer/Statistics/Quantitative Applications (CS)
• Humanities, Arts and Design (HU)
• Social-Behavioral Sciences (SB)
• Natural Science - Quantitative (SQ)
• Natural Science - General (SG)

General Studies Awareness Requirements:
• Cultural Diversity in the U.S. (C)
• Global Awareness (G)
• Historical Awareness (H)

First-Year Composition

General Studies designations listed on the major map are current for the 2021 - 2022 academic year.