Computer and Information Technology, BS

Program Description

This program provides students with a broad introduction to technology for professional practice, with an emphasis on the hands-on application of technology to solve problems. Students can choose to emphasize in Information Technology (focusing on networking, system administration, and databases), Software Development (focusing on the professional development of software), Web Design and Development (focusing on the design and implementation of web and mobile applications), or they can choose a broad treatment of technology subjects without an emphasis.

Program Curriculum

120 credits

DSU General Education Requirements

All DSU General Education requirements must be fulfilled. A previously earned degree may fulfill those requirements, but courses must be equivalent to DSU's minimum General Education standards in American Institutions, English, and Mathematics.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Hours</th>
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<tbody>
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<tr>
<td></td>
<td>English</td>
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<td></td>
<td>Mathematics</td>
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<td></td>
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<td></td>
<td>Laboratory Science</td>
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<td></td>
<td>Fine Arts</td>
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<tr>
<td></td>
<td>Literature/Humanities</td>
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<tr>
<td></td>
<td>Social &amp; Behavioral Sciences</td>
<td>3</td>
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<td></td>
<td>Exploration</td>
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<tr>
<td>CS 1400</td>
<td>Fundamentals of Programming</td>
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<tr>
<td>CS 1410</td>
<td>Object Oriented Programming</td>
<td>3</td>
</tr>
<tr>
<td>CS 2420</td>
<td>Introduction to Algorithms and Data Structures</td>
<td>3</td>
</tr>
<tr>
<td>CS 2450</td>
<td>Software Engineering</td>
<td>3</td>
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<tr>
<td>or WEB 3450</td>
<td>Software Engineering</td>
<td></td>
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<tr>
<td>CS 3005</td>
<td>Programming in C++</td>
<td>3</td>
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<tr>
<td>CS 3010</td>
<td>Mobile Application Development for Android</td>
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<tr>
<td>or CS 3020</td>
<td>Mobile Application Development: iOS</td>
<td></td>
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<tr>
<td>or CS 3500</td>
<td>Application Development</td>
<td></td>
</tr>
<tr>
<td>DES 1300</td>
<td>Design I</td>
<td>3</td>
</tr>
<tr>
<td>DES 2100</td>
<td>Design Thinking</td>
<td>3</td>
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<tr>
<td>DES 2300</td>
<td>Design II</td>
<td>3</td>
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<tr>
<td>ENGL 3010</td>
<td>Professional Writing and Business Ethics</td>
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<td>IT 1100</td>
<td>Introduction to Unix/Linux</td>
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<td>IT 2400</td>
<td>Intro to Networking</td>
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<td>IT 3100</td>
<td>Systems Design and Administration I</td>
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<tr>
<td>WEB 1400</td>
<td>Web Design I: Fundamentals (ALCS)</td>
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<tr>
<td>WEB 3400</td>
<td>Web Design II: Essentials (ALCS)</td>
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<td>WEB 3500</td>
<td>Tech Entrepreneurship</td>
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<td>MATH 1050</td>
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<td>CS 4600</td>
<td>Senior Project</td>
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<td>or IT 4600</td>
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<td>or WEB 4600</td>
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**Discipline Elective Requirements**

Complete 21 credits from the following (choices from above may not be repeated here):

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<th>Course Code</th>
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<tr>
<td>ARTH 3750</td>
<td>Graphic Design History</td>
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<tr>
<td>CS 2810</td>
<td>Computer Organization and Architecture</td>
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<td>CS 3010</td>
<td>Mobile Application Development for Android</td>
<td>3</td>
</tr>
<tr>
<td>CS 3020</td>
<td>Mobile Application Development: iOS</td>
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<tr>
<td>CS 3200</td>
<td>Web Application Development I</td>
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<tr>
<td>CS 3400</td>
<td>Operating Systems</td>
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<td>CS 3410</td>
<td>Distributed Systems</td>
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<td>CS 3440</td>
<td>Software Practices</td>
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<tr>
<td>CS 3600</td>
<td>Graphics Programming</td>
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<tr>
<td>CS 4200</td>
<td>Web Application Development II</td>
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<tr>
<td>CS 4300</td>
<td>Artificial Intelligence</td>
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<tr>
<td>CS 4307</td>
<td>Database Design &amp; Management</td>
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<tr>
<td>CS 4320</td>
<td>Machine Learning</td>
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<tr>
<td>CS 4550</td>
<td>Compilers</td>
<td>3</td>
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<tr>
<td>CS 4920R</td>
<td>Internship</td>
<td>1-3</td>
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<tr>
<td>CS 4990</td>
<td>Special Topics in Computer Science</td>
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<tr>
<td>CS 4991R</td>
<td>Competitive Programming</td>
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<td>DES 1100</td>
<td>Intro to Digital Design</td>
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<tr>
<td>DES 2710</td>
<td>Typography I</td>
<td>3</td>
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<tr>
<td>DES 3300</td>
<td>Motion Graphics I</td>
<td>3</td>
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<tr>
<td>DES 3400</td>
<td>Information Design</td>
<td>3</td>
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<tr>
<td>DES 3500</td>
<td>Interface Design</td>
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<tr>
<td>DES 3600</td>
<td>3-D Visualization</td>
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<tr>
<td>DES 3800</td>
<td>Branding</td>
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<tr>
<td>DES 4100</td>
<td>Interaction Design</td>
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<td>DES 4650</td>
<td>Publication Design</td>
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<tr>
<td>IT 1200</td>
<td>A+ Computer Hardware/Windows OS</td>
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<tr>
<td>IT 3110</td>
<td>System Automation</td>
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<td>IT 3150</td>
<td>Windows Servers</td>
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<tr>
<td>IT 3300</td>
<td>DevOps Virtualization</td>
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<tr>
<td>IT 4100</td>
<td>Files Systems and Storage Technologies</td>
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<tr>
<td>IT 4200</td>
<td>DevOps Lifecycle Management</td>
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<td>IT 4300</td>
<td>Database Design &amp; Management</td>
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<tr>
<td>IT 4310</td>
<td>Database Administration</td>
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<tr>
<td>IT 4400</td>
<td>Network Design &amp; Management</td>
<td>3</td>
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<tr>
<td>IT 4500</td>
<td>Information Security</td>
<td>3</td>
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<tr>
<td>IT 4510</td>
<td>Ethical Hacking &amp; Network Defense</td>
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<tr>
<td>IT 4920R</td>
<td>Internship</td>
<td>1-3</td>
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<td>IT 4990</td>
<td>Special Topics in Information Technology</td>
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<tr>
<td>WEB 3200</td>
<td>Web Application Development I</td>
<td>3</td>
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<td>WEB 3550</td>
<td>Online Marketing and SEO (ALCS)</td>
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<td>WEB 4200</td>
<td>Web Application Development II</td>
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<td>WEB 4400</td>
<td>Web Design III: Advanced Techniques (ALCS)</td>
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<td>WEB 4900R</td>
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<td>WEB 4920</td>
<td>Internship (ALPP)</td>
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<tr>
<td>WEB 4990</td>
<td>Special Topics in Web Development</td>
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</tbody>
</table>
NOTE: A course may only be used to fulfill one program requirement. Dual-listed courses may only be used once to fill requirements. Consult course descriptions in the current catalog to verify dual-listed courses.

Graduation Requirements

1. Complete a minimum of 120 college-level credits (1000 and above).
2. Complete at least 40 upper-division credits (3000 and above).
3. Complete at least 30 upper-division credits at DSU for institutional residency.
4. Cumulative GPA 2.0 or higher.
5. Grade C- or higher in each Core Discipline and Elective Requirement course.

Graduation Plan

1st Year

Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tr>
<td>First Year Recommended Elective</td>
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<tr>
<td>DES 1300 Design I</td>
<td>3</td>
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<tr>
<td>WEB 1400 Web Design I: Fundamentals (ALCS)</td>
<td>3</td>
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<tr>
<td>ENGL 1010 Introduction to Writing (EN) or ENGL 1010D or Introduction to Writing (EN)</td>
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<tr>
<td>MATH 1050 College Algebra / Pre-Calculus (MA)</td>
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Milestones & Notes: Meet with your program advisor. Maintain minimum prerequisite and program grade requirements.

Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CS 1400 Fundamentals of Programming</td>
<td>3</td>
</tr>
<tr>
<td>DES 2300 Design II</td>
<td>3</td>
</tr>
<tr>
<td>ENGL 2010 Interim Writing Selected Topics: (EN)</td>
<td>3</td>
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<tr>
<td>IT 1100 Introduction to Unix/Linux</td>
<td>3</td>
</tr>
<tr>
<td>General Education (Social &amp; Behavioral Sciences)</td>
<td>3</td>
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Milestones & Notes: Meet with your program advisor. Maintain minimum prerequisite and program grade requirements.

2nd Year

Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CS 1410 Object Oriented Programming</td>
<td>3</td>
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<td>IT 2400 Intro to Networking</td>
<td>3</td>
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<td>WEB 3400 Web Design II: Essentials (ALCS)</td>
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<tr>
<td>General Education (American Institutions)</td>
<td>3</td>
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<tr>
<td>General Education (Fine Arts)</td>
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Milestones & Notes: Meet with your program advisor. Maintain minimum prerequisite and program grade requirements.

Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CS 2420 Introduction to Algorithms and Data Structures</td>
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<tr>
<td>CS 3005 Programming in C++</td>
<td>3</td>
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<tr>
<td>DES 2100 Design Thinking</td>
<td>3</td>
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<td>CIT Elective: Upper Division</td>
<td>3</td>
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<tr>
<td>General Education (Literature/Humanities)</td>
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Milestones & Notes: Meet with your program advisor. Maintain minimum prerequisite and program grade requirements.

3rd Year

Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
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<tbody>
<tr>
<td>CS 2450 Software Engineering or WEB 3450 or Software Engineering</td>
<td>3</td>
</tr>
<tr>
<td>IT 3100 Systems Design and Administration I</td>
<td>3</td>
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<tr>
<td>CIT Elective: Upper Division</td>
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</table>
General Education (Life Sciences)  (catalog.dixie.edu/programs/generaleducation/#gerequirementstext)  3
General Education (Physical Sciences)  (catalog.dixie.edu/programs/generaleducation/#gerequirementstext)  3
General Education (Lab Science)  (catalog.dixie.edu/programs/generaleducation/#gerequirementstext)  1
Milestones & Notes: Meet with your program advisor. Maintain minimum prerequisite and program grade requirements.

### Spring Semester

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>WEB 3500</td>
<td>3</td>
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<tr>
<td>CIT Elective: Upper Division</td>
<td>3</td>
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<tr>
<td>ENGL 3010</td>
<td>3</td>
</tr>
<tr>
<td>General Education (Exploration) (catalog.dixie.edu/programs/generaleducation/#gerequirementstext)</td>
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Milestones & Notes: Meet with your program advisor. Maintain minimum prerequisite and program grade requirements.

### 4th Year

#### Fall Semester

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<tr>
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<td>or CS 3020</td>
<td>3</td>
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<td>or CS 3500</td>
<td>3</td>
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<tr>
<td>CIT Elective: Upper Division</td>
<td>3</td>
</tr>
<tr>
<td>CIT Elective: Upper Division</td>
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<tr>
<td>General Elective</td>
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<tr>
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Milestones & Notes: Apply for graduation (SPRING DEADLINE NOV. 1, FALL DEADLINE APR. 1). Meet with your program advisor. Maintain minimum prerequisite and program grade requirements.

#### Spring Semester

<table>
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<tr>
<th>Course</th>
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<tbody>
<tr>
<td>CS 4600</td>
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<td>or WEB 4600</td>
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<td>CIT Elective: Upper Division</td>
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<tr>
<td>General Elective</td>
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Milestones & Notes: Double check with advisor for final classes. Maintain minimum program grade requirements. Congratulations!

### Total Hours

120

**Computer and Information Technology Program Learning Outcomes**

At the successful conclusion of this program, students will be able to:

1. Design and create technological solutions that address contemporary real-world problems.
2. Evaluate current techniques, skills, and tools necessary for professional practice.
3. Weigh and apply ethical, legal, and social responsibilities in all aspects of practice.
4. Construct effective solutions in teams to accomplish a common goal.
5. Author effective visual, oral, and written communication for a range of audiences.