Information Science & Technology, B.A.

Learn more about the Bachelor of Arts in Information Science and Technology.

Students in the Information Science and Technology (IS&T) curriculum develop the skills and the knowledge necessary to analyze information problems and to apply current technology to their solution. The emphasis is to develop problem-solving and communication skills.

The technologies and methods include databases, web and mobile application development, client-server computing, network security, project management, software engineering principles, and quality assurance methodologies. A two-semester capstone project course is required. This course is designed to help students integrate what they have learned in other courses and apply this knowledge in the design and implementation of a software application.

The program is targeted for students who have a strong interest in applying computing technologies to solving problems in business, education, science, and government agencies. Our IS&T graduates are also involved in innovative product developments. They hold jobs as consultants, network engineers, business and systems analysts, database administrators, and web and application developers.

Undergraduate Contact Information:

Dr. Jamie Payton, Chair
Science Education and Research Center, Room 304
215-204-8450

Dr. Gene Kwatny, Vice Chair
Science Education and Research Center, Room 304
215-204-8450

Dr. Cindy Li, Faculty Advisor
Science Education and Research Center, Room 353
215-204-2940
xli@temple.edu

Bachelor of Arts

Summary of Requirements for the Degree

1. University Requirements (123 total s.h.)
   - MATH 0701 (4 s.h.) and/or ENG 0701 (4 s.h.), if required by placement testing.
   - All Temple students must take a minimum of two writing intensive courses at Temple as part of their major. Following is a list of courses that can be used to satisfy the writing-intensive requirement: CIS 4296 and CIS 4396.
   - Students must complete the General Education (GenEd) requirements.
     - See the General Education section of the Undergraduate Bulletin for the GenEd curriculum.
   - Students who complete CST majors typically receive a waiver for 2 Science & Technology (GS) and 1 Quantitative Literacy (GQ) GenEd courses.
   - Students must satisfy general Temple University residency requirements.
2. College Requirements
   - 90 credits within the College of Science & Technology (CST) or the College of Liberal Arts (CLA).
   - 45 Upper Level (2000+) credits within the College of Science & Technology (CST) or the College of Liberal Arts (CLA).
   - Second (2nd) Level of a Foreign Language (1002).
   - First Year Seminar Requirement: All students in the College of Science & Technology (CST) are required to take a 1 credit first year seminar course, SCTC 1001 CST First Year Seminar. Other courses that fulfill this requirement may be found on the CST College Requirements page. Only one course in this category may count towards graduation.
3. Major Requirements for Bachelor of Arts (64 s.h.)
   At least 7 courses required for the major must be completed at Temple. At least 6 CIS courses must be completed at Temple.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credit Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 1001</td>
<td>Introduction to Academics in Computer Science</td>
<td>1</td>
</tr>
<tr>
<td>CIS 1051</td>
<td>Introduction to Problem Solving and Programming in Python</td>
<td>4</td>
</tr>
<tr>
<td>or CIS 1057</td>
<td>Computer Programming in C</td>
<td></td>
</tr>
<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credit Hours</td>
</tr>
<tr>
<td>-------------</td>
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</tr>
<tr>
<td>CIS 1068</td>
<td>Program Design and Abstraction</td>
<td>4</td>
</tr>
<tr>
<td>or CIS 1968</td>
<td>Honors Program Design and Abstraction</td>
<td>4</td>
</tr>
<tr>
<td>CIS 1166</td>
<td>Mathematical Concepts in Computing I</td>
<td>4</td>
</tr>
<tr>
<td>or CIS 1966</td>
<td>Honors Mathematical Concepts in Computing I</td>
<td>4</td>
</tr>
<tr>
<td>CIS 2109</td>
<td>Database Management Systems</td>
<td>4</td>
</tr>
<tr>
<td>CIS 2168</td>
<td>Data Structures</td>
<td>4</td>
</tr>
<tr>
<td>CIS 2229</td>
<td>Architecture, Operating Systems and Networking</td>
<td>4</td>
</tr>
<tr>
<td>CIS 3309</td>
<td>Component-Based Software Design</td>
<td>4</td>
</tr>
<tr>
<td>CIS 3329</td>
<td>Network Architectures</td>
<td>4</td>
</tr>
<tr>
<td>CIS 3342</td>
<td>Server-Side Web Application Development</td>
<td>4</td>
</tr>
<tr>
<td>CIS 3344</td>
<td>Client-Side Scripting for the Web</td>
<td>4</td>
</tr>
<tr>
<td>CIS 4296</td>
<td>Information Systems Analysis and Design</td>
<td>4</td>
</tr>
<tr>
<td>CIS 4396</td>
<td>Information Systems Implementation</td>
<td>4</td>
</tr>
<tr>
<td>MATH 2031</td>
<td>Probability and Statistics</td>
<td>3</td>
</tr>
<tr>
<td>Select one of the following:</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>MATH 1031</td>
<td>Differential and Integral Calculus</td>
<td>4</td>
</tr>
<tr>
<td>MATH 1041</td>
<td>Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>MATH 1941</td>
<td>Honors Calculus I</td>
<td>4</td>
</tr>
<tr>
<td>Laboratory Science courses</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Two (2) laboratory science courses</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Total Credit Hours</td>
<td>64</td>
<td></td>
</tr>
</tbody>
</table>

1 IS&T majors are required to have completed MATH 1022. They can then choose either MATH 1031, MATH 1041 or MATH 1941.

2 Must select within a Sequence for Laboratory Science A and Laboratory Science B. See the Sequenced Laboratory Science list below for the science options.

## Sequenced Information Science and Technology Laboratory Science Requirements

### Biology Sequence

**Select one Biology Lab Science A:**

- BIOL 1011 General Biology I
- BIOL 1111 Introduction to Organismal Biology
- BIOL 1911 Honors Introduction to Organismal Biology (S)

**Select one Biology Lab Science B:**

- BIOL 1012 General Biology II
- BIOL 2112 Introduction to Cellular and Molecular Biology
- BIOL 2912 Honors Introduction to Cellular and Molecular Biology (F)

### Chemistry Sequence

1

**Select one Chemistry Lab Science A:**

- CHEM 1021 Introduction to Chemistry I
- CHEM 1023 and Introduction to Chemistry Laboratory I
- CHEM 1031 General Chemistry I
- CHEM 1033 and General Chemistry Laboratory I
- CHEM 1951 Honors General Chemical Science I
- CHEM 1953 and Honors Chemical Science Laboratory I

**Select one Chemistry Lab Science B:**

- CHEM 1022 Introduction to Chemistry II
- CHEM 1024 and Introduction to Chemistry Laboratory II
- CHEM 1032 General Chemistry II
- CHEM 1034 and General Chemistry Laboratory II
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CHEM 1952  & CHEM 1954  
Honors General Chemical Science II and Honors Chemical Science Laboratory II

Earth & Environmental Science Sequence  

Select this Lab Science A: 
EES 2001  Physical Geology 

Select one Lab Science B (both have co-requisite): 
EES 2011  Mineralogy I (with CHEM 1031 co-requisite) 
EES 2061  Introduction to Geochemistry (with CHEM 1031 co-requisite) 

Physics Sequence  

Select one Physics Lab Science A: 
PHYS 1021  Introduction to General Physics I 
PHYS 1061  Elementary Classical Physics I 
PHYS 1961  Honors Elementary Classical Physics I (F) 
PHYS 2021  General Physics I 
PHYS 2921  Honors General Physics I (F) 

Select one Physics Lab Science B: 
PHYS 1022  Introduction to General Physics II 
PHYS 1062  Elementary Classical Physics II 
PHYS 1962  Honors Elementary Classical Physics II (S) 
PHYS 2022  General Physics II 
PHYS 2922  Honors General Physics II (S) 

1 Students can choose to mix-and-match the Chemistry Sequence A and B courses. However, they must take at least 1 course from Chemistry Sequence A and 1 from Chemistry Sequence B. Note: Chemistry courses consist of a three-credit lecture plus a one-credit lab. 
2 The Earth & Environmental Science (EES) sequence will require students to take CHEM 1031 as a co-requisite to either of the two EES Sequence B courses. 
3 Students can choose to mix-and-match the Physics Sequence A and B courses. However, they must take at least 1 course from Physics Sequence A and 1 from Physics Sequence B. 

Calculation of Major GPA 

Courses listed under the major requirements for the degree will be included in the calculation of the major GPA. Courses that could not apply toward the major as an elective or required course would not be counted in the calculation of the major GPA. This would include CIS 1056, for example. 

Distinction in Major 

To graduate with Distinction in Major, students are required to have a 3.50 or higher grade point average (GPA) both in the major and overall, as well as be recommended by the department of Computer & Information Sciences. 

Suggested Academic Plan 

Bachelor of Arts in Information Science & Technology 

Requirements for New Students starting in the 2019-2020 Academic Year 

Year 1 

<table>
<thead>
<tr>
<th>Fall</th>
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<tr>
<td>CIS 1001</td>
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<td>MATH 1941</td>
<td>Honors Calculus I</td>
</tr>
<tr>
<td>SCTC 1001</td>
<td>CST First Year Seminar</td>
</tr>
<tr>
<td>General Education/Elective Credits</td>
<td>5</td>
</tr>
</tbody>
</table>

Term Credit Hours 15
### Fall
- **CIS 1068** or **1968** Program Design and Abstraction 4
- **CIS 1166** or **1966** Mathematical Concepts in Computing I 4
- General Education/Elective Credits 7

**Term Credit Hours**: 15

### Year 2
#### Fall
- **MATH 2031** Probability and Statistics 3
- **CIS 2168** Data Structures 4
- General Education/Elective Credits 8

**Term Credit Hours**: 15

### Spring
- **CIS 2109** Database Management Systems 4
- **CIS 2229** Architecture, Operating Systems and Networking 4
- General Education/Elective Credits 8

**Term Credit Hours**: 16

### Year 3
#### Fall
- **CIS 3309** Component-Based Software Design 4
- **CIS 3344** Client-Side Scripting for the Web 4
- IST Laboratory Science A 4
- General Education/Elective Credits 4

**Term Credit Hours**: 16

### Spring
- **CIS 3329** Network Architectures 4
- **CIS 3342** Server-Side Web Application Development 4
- IST Laboratory Science B 4
- General Education/Elective Credits 4

**Term Credit Hours**: 16

### Year 4
#### Fall
- **CIS 4296** Information Systems Analysis and Design [WI] 4
- General Education/Elective Credits 12

**Term Credit Hours**: 16

### Spring
- **CIS 4396** Information Systems Implementation [WI] 4
- General Education/Elective Credits 10

**Term Credit Hours**: 14

**Total Credit Hours**: 123

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