Information Science and Technology BA

Overview

Science and technology are the foundations of our future. The Department of Computer and Information Sciences (CIS) is focused on the understanding of fundamental scientific principles and the application of these principles to solving complex problems, using computing technology.

Students in the **Bachelor of Arts in Information Science and Technology** (IS&T) 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.

Campus Location: Main

Program Code: ST-IST-BA

Distinction in Major

To graduate with distinction in this major, a student must satisfy the following criteria:

- have a minimum 3.50 major GPA and
- have a minimum 3.50 cumulative GPA.

Undergraduate Contact Information

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

These requirements are for students who matriculated in academic year 2023-2024. Students who matriculated prior to fall 2023 should refer to the Archives *to view the requirements for their Bulletin year.*

Bachelor of Arts Requirements

Summary of Requirements for the Degree

1. University Requirements (123 total s.h.)
   - Students must complete all University requirements including those listed below.
   - All undergraduate students must complete at least two writing-intensive courses for a total of at least six credits at Temple as part of their major. The specific writing-intensive course options for this major are:

Code	Title	Credit Hours
CIS 4296	Information Systems Analysis and Design	4
CIS 4396	Information Systems Implementation	4

   - 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 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
   - A minimum of 90 total credits within the College of Science & Technology (CST), the College of Liberal Arts (CLA), and/or the College of Engineering (ENG).
     - A minimum of 45 of these credits must be upper-level (courses numbered 2000 and above).
     - A minimum of 6 of these credits must be upper-level (courses numbered 2000 and above) CLA credits.
   - Successful completion or waiver from the second level of a foreign language.
   - Complete a one-credit first-year or transfer seminar.
     - SCTC 1001 CST First Year Seminar for every entering first-year CST student.
     - SCTC 2001 CST Transfer Seminar for every entering transfer CST student.

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.

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

[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

Code	Title	Credit Hours
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 1112	Introduction to Biomolecules, Cells and Genomes
BIOL 1912	Honors Introduction to Biomolecules, Cells and Genomes
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 & CHEM 1023	Introduction to Chemistry I and Introduction to Chemistry Laboratory I
CHEM 1031 & CHEM 1033	General Chemistry I and General Chemistry Laboratory I
CHEM 1951 & CHEM 1953	Honors General Chemical Science I and Honors Chemical Science Laboratory I
Select one Chemistry Lab Science B:	
CHEM 1022 & CHEM 1024	Introduction to Chemistry II and Introduction to Chemistry Laboratory II
CHEM 1032 & CHEM 1034	General Chemistry II and General Chemistry Laboratory II
CHEM 1952 & CHEM 1954	Honors General Chemical Science II and Honors Chemical Science Laboratory II
Earth & Environmental Science Sequence [2]	
Select this Lab Science A:	
EES 2001	Physical Geology
Select one Lab Science B:	
EES 2011	Mineralogy I (with CHEM 1031 prerequisite)
EES 2021	Sedimentary Environments (no CHEM 1031 prerequisite)
EES 2061	Introduction to Geochemistry (with CHEM 1031 prerequisite)
Physics Sequence [3]	
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]

For the EES Sequence, two of the three Lab Science B options require students to take CHEM 1031 as a prerequisite, but EES 2021 does not.

[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.

Suggested Academic Plan

Bachelor of Arts in Information Science and Technology

Suggested Plan for New Students Starting in the 2023-2024 Academic Year

Year 1		
Fall		**Credit Hours**
CIS 1001	Introduction to Academics in Computer Science	1
Select one of the following:		4
CIS 1051	Introduction to Problem Solving and Programming in Python	
CIS 1057	Computer Programming in C	
Select one of the following: [1]		4
MATH 1031	Differential and Integral Calculus	
MATH 1041	Calculus I	
MATH 1941	Honors Calculus I	
SCTC 1001	CST First Year Seminar	1
GenEd Breadth Course		3
GenEd Breadth Course		3
	Credit Hours	**16**
Spring		

CIS 1068
    or CIS 1968
	Program Design and Abstraction
	    or Honors Program Design and Abstraction
		4

CIS 1166
    or CIS 1966
	Mathematical Concepts in Computing I
	    or Honors Mathematical Concepts in Computing I
		4

ENG 0802
    or ENG 0812
    or ENG 0902
	Analytical Reading and Writing
	    or Analytical Reading and Writing: ESL
	    or Honors Writing About Literature
		4

GenEd Breadth Course		3
	Credit Hours	**15**
Year 2		
Fall		
MATH 2031	Probability and Statistics	3
CIS 2168	Data Structures	4

IH 0851
    or IH 0951
	Intellectual Heritage I: The Good Life
	    or Honors Intellectual Heritage I: The Good Life
		3

GenEd Breadth Course		3
Elective		3
	Credit Hours	**16**
Spring		
CIS 2109	Database Management Systems	4
CIS 2229	Architecture, Operating Systems and Networking	4

IH 0852
    or IH 0952
	Intellectual Heritage II: The Common Good
	    or Honors Intellectual Heritage II: The Common Good
		3

GenEd Breadth Course		3-4
Elective		1-0
	Credit Hours	**15**
Year 3		
Fall		
CIS 3309	Component-Based Software Design	4
CIS 3344	Client-Side Scripting for the Web	4
IST Laboratory Science A		4
Foreign Language 1001 - First Level		4
	Credit Hours	**16**

Spring		
CIS 3329	Network Architectures	4
CIS 3342	Server-Side Web Application Development	4
IST Laboratory Science B		4
Foreign Language 1002 - Second Level		4
	Credit Hours	**16**
Year 4		
Fall		
CIS 4296	Information Systems Analysis and Design	4
Upper-level CLA Course (numbered 2000 and above)		3
Elective		3
Elective		3
Elective		3
	Credit Hours	**16**
Spring		
CIS 4396	Information Systems Implementation	4
Upper-level CLA Course (numbered 2000 and above)		3
Elective		3
Elective		3
	Credit Hours	**13**
	Total Credit Hours	**123**

[1]

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