# Artificial Intelligence BS

## Overview

Artificial Intelligence (AI) is reshaping how organizations across many sectors operate, creating demand for graduates who can build, evaluate, and responsibly deploy AI systems. The Department of Computer and Information Sciences offers the **Bachelor of Science in Artificial Intelligence** to prepare students for that work. The program combines a strong foundation in computer science, including programming, algorithms, data structures, and mathematics, with focused coursework in machine learning, AI methods, databases, and human-AI interaction. Graduates are not merely AI-literate; they are skilled programmers who can design and implement intelligent systems.

The program emphasizes applied work as well as theory. Students work with real datasets, build machine learning models, and complete a capstone project that integrates skills developed across the curriculum. Temple's location in Philadelphia, with employers in healthcare, finance, technology, and related fields, creates opportunities for internships, applied projects, and undergraduate research. Graduates are prepared for technical roles that require both computing depth and an understanding of responsible AI deployment.

**Campus Locations:** Main, Japan

**Program Code:** ST-AI-BS

## Distinction in Major

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

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

## Undergraduate Contact Information

### Main Campus

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Learn more about the Bachelor of Science in Artificial Intelligence.

*These requirements are for students who matriculated in academic year 2026-2027. Students who matriculated prior to fall 2026 should refer to the* Archives *to view the requirements for their Bulletin year.*

## Bachelor of Science 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 (WI) 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 3296 | Software Design (WI) | 4 |
| CIS 4398 | Projects in Computer Science (WI) | 3 |
| or CIS 4397 | Independent Research in Computer Science | |

- 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).
   - 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.

   a. Major Requirements for Bachelor of Science (76-79 s.h.)
   At least 9 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 and Information Science** | | |
| CIS 1001 | Introduction to Academics in Computer Science | 1 |
| CIS 1051 | Introduction to Problem Solving and Programming in Python [1] | 4 |
| or CIS 1951 | Honors Introduction to Problem Solving and Programming in Python | |
| 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 2033 | Computational Probability and Statistics | 3 |
| CIS 2109 | Database Management Systems | 4 |
| CIS 2166 | Mathematical Concepts in Computing II | 4 |
| CIS 2168 | Data Structures | 4 |
| CIS 3203 | Introduction to Artificial Intelligence | 4 |
| CIS 3223 | Data Structures and Algorithms | 3 |
| CIS 3296 | Software Design (WI) | 4 |
| CIS 3655 | Human and Artificial Intelligence Interaction (Human and Artificial Intelligence Interaction) | 3 |
| or CIS 3603 | User Experience Design | |
| Select one of the following: | | 3 |
| CIS 4398 | Projects in Computer Science (WI) | |
| CIS 4397 | Independent Research in Computer Science (WI) [2] | |
| CIS 4526 | Foundations of Machine Learning | 3 |
| **Artificial Intelligence Breadth Course** | | |
| Select one of the following: | | 3 |
| CIS 4203 | Artificial General Intelligence (Artificial General Intelligence) | |
| CIS 4517 | Data-Intensive and Cloud Computing (S) | |
| CIS 4523 | Knowledge Discovery and Data Mining [3] | |
| CIS 4524 | Analysis and Modeling of Social and Information Networks [3] | |
| CIS 4626 | Introduction to Deep Learning and Large Language Models (Introduction to Deep Learning and Large Language Models) | |
| CIS 4726 | Intelligent Agent Systems Development (Intelligent Agent Systems Development) | |
| **Artificial Intelligence Electives** | | |
| Select three courses from the following AI elective courses: | | 9-12 |
| CIS 3100 | Special Topics in CIS | |

| | | |
|---|---|---|
| CIS 3211 | Automata, Computability, and Languages | |
| CIS 3217 | Computer Architecture | |
| CIS 3219 | Computer Graphics and Image Processing | |
| CIS 3242 | Discrete Structures | |
| CIS 3308 | Web Application Programming | |
| CIS 3319 | Wireless Networks and Security | |
| CIS 3374 | Quality Assurance & Testing | |
| CIS 3381 | Cooperative Education Experience in Computer Science [4] | |
| CIS 3441 | Software Security | |
| CIS 3515 | Introduction to Mobile Application Development | |
| CIS 3605 | Introduction to Digital Forensics | |
| CIS 3715 | Principles of Data Science | |
| CIS 3755 | Introduction to Information Visualization | |
| CIS 4203 | Artificial General Intelligence (Artificial General Intelligence) [5] | |
| CIS 4282 | Independent Study [4] | |
| CIS 4305 | Real Time Computer Systems | |
| CIS 4307 | Introduction to Distributed Systems and Networks | |
| CIS 4319 | Computer Networks and Communications | |
| CIS 4324 | Compiler Design | |
| CIS 4345 | Introduction to Cloud Computing | |
| CIS 4350 | Seminar on Topics in Computer Science | |
| CIS 4360 | Seminar on Topics in Computer Science | |
| CIS 4419 | Securing the Internet of Things | |
| CIS 4515 | Advanced Mobile Application Development | |
| CIS 4517 | Data-Intensive and Cloud Computing [5] | |
| CIS 4523 | Knowledge Discovery and Data Mining [5] | |
| CIS 4524 | Analysis and Modeling of Social and Information Networks [5] | |
| CIS 4626 | Introduction to Deep Learning and Large Language Models (Introduction to Deep Learning and Large Language Models) [5] | |
| CIS 4696 | Ethical Hacking and Intrusion Forensics (WI) | |
| CIS 4726 | Intelligent Agent Systems Development (Intelligent Agent Systems Development) [5] | |
| MATH 2043 | Calculus III | |
| **Mathematics** | | |
| MATH 1041 | Calculus I | 4 |
| or MATH 1941 | Honors Calculus I | |
| MATH 1042 | Calculus II | 4 |
| or MATH 1942 | Honors Calculus II | |
| **Laboratory Science Courses** | | |
| Two (2) laboratory science courses [4] | | 8 |
| **Total Credit Hours** | | **76-79** |

1. CIS 1057 Computer Programming in C can be substituted for CIS 1051 Introduction to Problem Solving and Programming in Python, if it was already completed prior to starting the major.
2. CIS 4397 Independent Research in Computer Science requires permission of the department. View the course description for additional information.
3. Prerequisite of MATH 2043 Calculus III.
4. A maximum of four credits from CIS 3381 Cooperative Education Experience in Computer Science and/or CIS 4282 Independent Study may be used to fulfill the artificial intelligence elective requirement.
5. This course may be used to satisfy the AI Breadth Course or an AI Elective.
6. Must select one Lab Science Sequence from the options listed below. Lab Science A and Lab Science B must be taken from the same department.

## Sequenced 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 | |
| **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 | |
| **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) | |
| EES 3051 | Natural Hazards (no CHEM 1031 prerequisite) | |
| **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 | |
| PHYS 2021 | General Physics I (F) | |
| 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 | |
| PHYS 2022 | General Physics II (S) | |
| 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 Science in Artificial Intelligence

### Suggested Plan for New Students Starting in the 2026-2027 Academic Year

| | | |
|---|---|---|
| **Year 1** | | |
| **Fall** | | **Credit Hours** |
| MATH 1041<br>or MATH 1941 | Calculus I<br>or Honors Calculus I | 4 |
| CIS 1001 | Introduction to Academics in Computer Science | 1 |
| CIS 1051<br>or CIS 1951 | Introduction to Problem Solving and Programming in Python<br>or Honors Introduction to Problem Solving and Programming in Python | 4 |
| SCTC 1001 | CST First-Year Seminar | 1 |
| ENG 0802<br>or ENG 0812<br>or ENG 0902 | Analytical Reading and Writing [GW]<br>or Analytical Reading and Writing: ESL [GW]<br>or Honors Analytical Reading and Writing [GW] | 4 |
| Elective | | 1 |
| | **Credit Hours** | **15** |
| **Spring** | | |
| MATH 1042<br>or MATH 1942 | Calculus II<br>or Honors Calculus II | 4 |
| CIS 1068<br>or CIS 1968 | Program Design and Abstraction<br>or Honors Program Design and Abstraction | 4 |
| CIS 1166<br>or CIS 1966 | Mathematical Concepts in Computing I<br>or Honors Mathematical Concepts in Computing I | 4 |
| IH 0851<br>or IH 0951 | Intellectual Heritage I: The Good Life [GY]<br>or Honors Intellectual Heritage I: The Good Life [GY] | 3 |
| | **Credit Hours** | **15** |
| **Year 2** | | |
| **Fall** | | |
| CIS 2109 | Database Management Systems | 4 |
| CIS 2166 | Mathematical Concepts in Computing II | 4 |
| CIS 2168 | Data Structures | 4 |
| IH 0852<br>or IH 0952 | Intellectual Heritage II: The Common Good [GZ]<br>or Honors Intellectual Heritage II: The Common Good [GZ] | 3 |
| | **Credit Hours** | **15** |
| **Spring** | | |
| CIS 2033 | Computational Probability and Statistics | 3 |
| CIS 3655<br>or CIS 3603 | Human and Artificial Intelligence Interaction (Human and Artificial Intelligence Interaction)<br>or User Experience Design | 3 |
| GenEd Breadth Course | | 3 |
| GenEd Breadth Course | | 3 |
| Elective | | 3 |
| | **Credit Hours** | **15** |
| **Year 3** | | |
| **Fall** | | |
| Artificial Intelligence Elective (or MATH 2043) [1] | | 3-4 |
| CIS 3203 | Introduction to Artificial Intelligence | 4 |
| Laboratory Science A | | 4 |
| GenEd Breadth Course | | 3 |

| | | |
|---|---|---|
| Elective | | 1-0 |
| | **Credit Hours** | **15** |
| **Spring** | | |
| CIS 3223 | Data Structures and Algorithms | 3 |
| CIS 4526 | Foundations of Machine Learning | 3 |
| Laboratory Science B | | 4 |
| GenEd Breadth Course | | 3-4 |
| Elective | | 3-2 |
| | **Credit Hours** | **16** |
| **Year 4** | | |
| **Fall** | | |
| CIS 3296 | Software Design [WI] | 4 |
| GenEd Breadth Course | | 3 |
| Artificial Intelligence Breadth | | 3 |
| Artificial Intelligence Elective | | 3-4 |
| Elective | | 3-2 |
| | **Credit Hours** | **16** |
| **Spring** | | |
| Select one of the following: | | 3 |
| CIS 4398 | Projects in Computer Science [WI] | |
| CIS 4397 | Independent Research in Computer Science [WI] [2] | |
| Artificial Intelligence Elective | | 3-4 |
| Elective | | 3 |
| Elective | | 3 |
| Elective | | 4-3 |
| | **Credit Hours** | **16** |
| | **Total Credit Hours** | **123** |

1 MATH 2043 Calculus III is a prerequisite if CIS 4523 or CIS 4524 are selected in artificial intelligence breadth or in artificial intelligence elective requirements.

2 CIS 4397 requires permission of the department. View the course description for additional information.