ARTIFICIAL INTELLIGENCE METHODS AND APPLICATIONS, B.S. (CAPITAL)

Begin Campus: Any Penn State Campus

End Campus: Harrisburg

Degree Requirements

For the Bachelor of Science degree in Artificial Intelligence Methods and Applications, a minimum of 120 credits is required:

Requirement	Credits
General Education	45
Electives	14
Requirements for the Major	67

6 of the 45 credits for General Education are included in the Requirements for the Major. This includes: 6 credits of GQ courses.

Requirements for the Major

A grade of C or better is required for all courses in the major. To graduate, a student enrolled in the major must earn at least a C grade in each course designated by the major as a C-required course, as specified by Senate Policy 82-44 (https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/).

Code	Title	Credits
Prescribed Courses		
Prescribed Courses: Require a grade of C or better		
A-I 100	Artificial Intelligence: Automated Thinking to Augment Human Intellect	3
A-I 341W	Responsible Artificial Intelligence	3
A-I 370	Problem Formulation and Automated Problem Solving	3
A-I 375	Knowledge Representation and Inference	3
CMPSC 131	Programming and Computation I: Fundamentals	3
CMPSC 132	Programming and Computation II: Data Structures	3
MATH 140	Calculus With Analytic Geometry I	4
MATH 225	Mathematical Foundations for Machine Learning	4
STAT 401	Experimental Methods	3
Additional Courses		
Additional Courses: Require a grade of C or better		
Any First-Year Seminar		1
CMPSC 360 or MATH 311W	Discrete Mathematics for Computer Science Concepts of Discrete Mathematics	3
DS 200 or STAT 200	Introduction to Data Sciences Elementary Statistics	4
Select 3 credits from the following:		3
CMPSC 462	Data Structures	
CMPSC 465	Data Structures and Algorithms	
DS 305	Algorithmic Methods and Tools	
Select 3 credits from the following:		3
CMPSC 445	Applied Machine Learning in Data Science	
CMPSC 448	Machine Learning and Algorithmic AI	
DS 310	Machine Learning for Data Analytics	
Select 6 credits from the following:		6
AIMA 430 & AIMA 440	AI Capstone I: Project Design and AI Capstone II: Project Implementation	
A-I 494	Research Project	
Supporting Courses and Related Areas		
Supporting Courses and Related Areas: Require a grade of C or better		
Select 9 credits from the Technical Supporting Course list. At least 3 credits must be at the 400-level.		9
Select 9 credits from the Application Supporting Course list. At least 3 credits must be at the 300- or 400-level. Up to 6 credits of ROTC.		9

General Education

Connecting career and curiosity, the General Education curriculum provides the opportunity for students to acquire transferable skills necessary to be successful in the future and to thrive while living in interconnected contexts. General Education aids students in developing intellectual curiosity, a strengthened ability to think, and a deeper sense of aesthetic appreciation. These are requirements for all baccalaureate students and are often partially incorporated into the requirements of a program. For additional information, see the General Education Requirements (https://bulletins.psu.edu/undergraduate/general-education/baccalaureate-degree-general-education-program/) section of the Bulletin and consult your academic adviser.

The keystone symbol appears next to the title of any course that is designated as a General Education course. Program requirements may also satisfy General Education requirements and vary for each program.

Foundations (grade of C or better is required and Inter-Domain courses do not meet this requirement.)

- **Quantification (GQ):** 6 credits
- **Writing and Speaking (GWS):** 9 credits

Breadth in the Knowledge Domains (Inter-Domain courses do not meet this requirement.)

- **Arts (GA):** 3 credits
- **Health and Wellness (GHW):** 3 credits
- **Humanities (GH):** 3 credits
- **Social and Behavioral Sciences (GS):** 3 credits
- **Natural Sciences (GN):** 3 credits

Integrative Studies

- **Inter-Domain Courses (Inter-Domain):** 6 credits

Exploration

- **GN,** may be completed with Inter-Domain courses: 3 credits
- **GA, GH, GN, GS, Inter-Domain courses.** This may include 3 credits of World Language course work beyond the 12th credit level or the requirements for the student's degree program, whichever is higher**:** 6 credits

University Degree Requirements

First Year Engagement

All students enrolled in a college or the Division of Undergraduate Studies at University Park, and the World Campus are required to take 1 to 3

credits of the First-Year Seminar, as specified by their college First-Year Engagement Plan.

Other Penn State colleges and campuses may require the First-Year Seminar; colleges and campuses that do not require a First-Year Seminar provide students with a first-year engagement experience.

First-year baccalaureate students entering Penn State should consult their academic adviser for these requirements.

Cultures Requirement
6 credits are required and may satisfy other requirements

- United States Cultures: 3 credits
- International Cultures: 3 credits

Writing Across the Curriculum
3 credits required from the college of graduation and likely prescribed as part of major requirements.

Total Minimum Credits
A minimum of 120 degree credits must be earned for a baccalaureate degree. The requirements for some programs may exceed 120 credits. Students should consult with their college or department adviser for information on specific credit requirements.

Quality of Work
Candidates must complete the degree requirements for their major and earn at least a 2.00 grade-point average for all courses completed within their degree program.

Limitations on Source and Time for Credit Acquisition
The college dean or campus chancellor and program faculty may require up to 24 credits of course work in the major to be taken at the location or in the college or program where the degree is earned. Credit used toward degree programs may need to be earned from a particular source or within time constraints (see Senate Policy 83-80 (https://senate.psu.edu/students/policies-and-rules-for-undergraduate-students/82-00-and-83-00-degree-requirements/)). For more information, check the Suggested Academic Plan for your intended program.