

Artificial Intelligence

Course Overview

The course Artificial Intelligence is a single-semester course that explains the evolution of Artificial Intelligence and its scope in the future. This course also describes how Artificial Intelligence is used in fields such as games, speech recognition, and computer vision. In this course, you will learn about different types of intelligent agents and their environments. You will also learn how to formulate problems and represent knowledge. The course Artificial Intelligence also covers the concepts of machine learning, natural language processing, expert systems, and robots. You will also learn about the ethics and safety issues related to artificial intelligence.

Course Goals

By the end of this course, you will:

- Describe the evolution of artificial intelligence.
- Describe the use of artificial intelligence in various fields such as games, speech recognition, computer vision, expert systems, and natural language processing.
- Identify the different types of artificial intelligence agents and environments.
- Explain how to solve problems using various search algorithms and represent knowledge in artificial intelligence.
- Describe the role of reasoning in the implementation of artificial intelligence.
- Describe the basic concepts of machine learning.
- Explain how intelligent systems process natural language such as English.
- Describe the characteristics, capabilities, and components of expert systems.
- Explain how computers can understand images and videos.
- Describe the functioning of a robot and the advantages of using robots.
- Describe the ethics and safety issues related to artificial intelligence.

General Skills

To participate in this course, you should be able to do the following:

- Complete basic operations with word-processing software such as Microsoft Word or Google Docs.
- Perform online research using various search engines and library databases.

- Communicate through email and discussion boards.

For a complete list of general skills that are required for participation in online courses, refer to the Prerequisites section of the Plato Student Orientation document, found at the beginning of this course.

Credit Value

Artificial Intelligence is a 0.5-credit course.

Course Materials

- notebook
- computer with an Internet connection and speakers or headphones
- Microsoft Word or equivalent

Course Pacing Guide

This course description and pacing guide is intended to help you stay on schedule with your work. Note that your course instructor may modify the schedule to meet the specific needs of your class.

Day	Activity/Objective	Type
1 day: 1	Syllabus and Plato Student Orientation <i>Review the Plato Student Orientation and Course Syllabus at the beginning of this course.</i>	Course Orientation
6 days: 2-7	History of Artificial Intelligence <i>Describe the evolution of artificial intelligence.</i>	Lesson
6 days: 8-13	Applications of Artificial Intelligence <i>Describe the use of artificial intelligence in various fields such as games, speech recognition, computer vision, expert systems, and natural language processing.</i>	Lesson
6 days: 14-19	Intelligent Agents <i>Identify the different types of artificial intelligence agents and environments.</i>	Lesson
2 days: 20-21	Course Activity 1	Course Activity
1 days: 22	Course Discussion 1	Course Discussion

Day	Activity/Objective	Type
1 day: 23	Game 1–Para Jumble	Game
6 days: 24-29	Problem Solving by Searching <i>Explain how to solve problems using various search algorithms.</i>	Lesson
6 days: 30-35	Knowledge Representation <i>Explain how to represent knowledge in artificial intelligence.</i>	Lesson
1 day: 36	Game 2–Thwack-a-Mole	Game
6 days: 37-42	Reasoning <i>Describe the role of reasoning in the implementation of artificial intelligence.</i>	Lesson
2 days: 43-44	Course Activity 2	Course Activity
1 days: 45	Course Discussion 2	Course Discussion
6 days: 46-51	Machine Learning <i>Describe the basic concepts of machine learning.</i>	Lesson
1 day: 52	Game 3–Para Jumble	Game
5 days: 53-57	Natural Language Processing <i>Explain how intelligent systems process natural language such as English.</i>	Lesson
2 days: 58-59	Course Activity 3	Course Activity
1 days: 60	Course Discussion 3	Course Discussion
5 days: 61-65	Expert Systems <i>Describe the characteristics, capabilities, and components of expert systems.</i>	Lesson

Day	Activity/Objective	Type
1 day: 66	Game 4–Thwack-a-Mole	Game
5 days: 67-71	Computer Vision <i>Explain how computers can understand images and videos.</i>	Lesson
5 days: 72-76	Robotics <i>Describe the functioning of a robot and the advantages of using robots.</i>	Lesson
2 days: 77-78	Course Activity 4	Course Activity
1 days: 79	Course Discussion 4	Course Discussion
5 days: 80-84	Ethics and Safety <i>Describe the ethics and safety issues related to artificial intelligence.</i>	Lesson
2 days: 85-86	Course Activity 5	Course Activity
2 days: 87-88	Course Discussion 5	Course Discussion
1 day: 89	Game 5–Space Jumble	Game
1 day: 90	End of Semester Test	Assessment