

CSIT 259

Introduction to Artificial Intelligence

3 Credits

Community College of Baltimore County
Common Course Outline

Description

CSIT 259 – Introduction to Artificial Intelligence: provides an overview of the field of Artificial Intelligence (AI), exploring the foundations of machine learning, knowledge representation, intelligent systems, and natural language processing. Topics include agent-based systems, machine learning, search methodologies, genetic algorithms, knowledge representation, modeling, and examination of emerging trends in the field.

Pre-requisites: CSIT 210 or permission of the program director

Overall Course Objectives

Upon completion of this course, students will be able to:

1. describe the field of AI, the application in society, and how it differs from other areas of computer science;
2. design programs using appropriate AI techniques and algorithms;
3. define properties of agents, multi-agent systems, and how the technology is used in the field of AI;
4. apply machine learning techniques to a variety of data sets and real-world problems;
5. classify problems and their appropriate models, representations, or techniques to generate solutions;
6. explain the design and implementation of intelligent systems;
7. demonstrate the use of logic, inference, and fuzzy logic;
8. demonstrate the use of natural language processing;
9. describe search algorithms and methodologies used in the field of AI;
10. demonstrate the use of genetic algorithms;
11. identify ethical issues, bias, and problems of fairness in AI based systems; and
12. describe emerging trends and technologies in the field of AI.

Major Topics

- I. Introduction to AI
- II. Knowledge representation
 - a. Models
 - b. Frameworks
- III. Search methodologies
- IV. Logic and inference
- V. Machine learning
 - a. Supervised learning

The Common Course Outline (CCO) determines the essential nature of each course.

For more information, see your professor's syllabus.

- b. Unsupervised learning
- c. Reinforcement learning
- d. Neural networks
- VI. Agents and multi-agent system
- VII. Fuzzy logic
- VIII. Natural language processing
- IX. Genetic algorithms
- X. Ethics, bias, and fairness in AI systems
- XI. Emerging topics

Course Requirements

Grading will be determined by the individual faculty member, but shall include the following, at minimum:

- Six quizzes or assignments
- Six projects
- Two exams
- One comprehensive final exam and/or final project

Written assignments and research projects: Students are required to use appropriate academic resources in their research and cite sources according to the style selected by their professor.

Date Revised: 10/19/2021

The Common Course Outline (CCO) determines the essential nature of each course.
For more information, see your professor's syllabus.