



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF ENGINEERING

# Artificial Intelligence

## CSE 6521

**Credit Hours:**

3.00 - 3.00

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**Course Levels:**

Graduate (5000-8000 level)

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**Course Components:**

Lecture

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**Course Description:**

Survey of advanced concepts, techniques, and applications of artificial intelligence, including knowledge representation, learning, natural language understanding, and vision.

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**Prerequisites and Co-requisites:**

Prereq: 4256 or equiv., Math 4568 or equiv., and Stat 3470 or equiv.

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**Course Goals / Objectives:**

- Master advanced AI concepts, theories, and terminology
  - Master computational techniques in typical AI subareas
  - Master knowledge representation and reasoning methods in AI
  - Be exposed to current research topics in AI
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**Course Topics:**

- Search and problem formation
  - Uncertainty, probability theory, and utility theory
  - Bayesian Networks
  - Expectation-Maximization Algorithm
  - Markov Models
  - Markov Decision Processes and Reinforcement Learning
  - Decision Trees and Ensemble Learning
  - Perceptrons and Neural Networks
  - Clustering
  - Application Areas (Natural Language Processing, Vision)
  - AI, Ethics, and Bias
  - AI Pedagogy
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**Designation:**

Elective