



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF ENGINEERING

# Survey of Artificial Intelligence II: Advanced Techniques

## CSE 5522

**Credit Hours:**

3.00

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**Course Levels:**

Undergraduate (1000-5000 level)

Graduate

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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: 3521 or 5521, and enrollment in CSE, CIS, ECE, or Data Analytics major; or Grad standing.

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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:**

- Probability theory
  - Bayesian networks and probabilistic representations
  - Exact and approximate probabilistic inference
  - Machine learning
  - Computer vision
  - Computational audition
  - Automatic speech recognition
  - Natural language processing
  - Information retrieval
  - Diagrammatic reasoning and abductive inference
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**Designation:**

Elective