



**THE OHIO STATE UNIVERSITY**  
COLLEGE OF ENGINEERING

# Capstone Design: Knowledge-Based Systems

## CSE 5914

**Credit Hours:**

4.00

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**Course Levels:**

Undergraduate (1000-5000 level)

Graduate (5000-8000 level)

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**Course Components:**

Lecture

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**Course Description:**

Capstone design project; conceptual and technical design; theory and practice of knowledge-based systems; teamwork, written and oral communication skills.

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**Prerequisites and Co-requisites:**

Prereq: 3521 or 5521, and 2501 or Philos 1338, and CSE 3901 or 3902 or 3903, and second writing course; or Grad standing.

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### **Course Goals / Objectives:**

- Master task-level analysis and problem solving methods for configuration (design) problems;
  - Be competent with methods for representing and reasoning with uncertain knowledge; Be familiar with the analysis and methods of diagnosis problems;
  - Master synthesizing and applying prior knowledge to designing and implementing solutions to open-ended computational problems while considering multiple realistic constraints;
  - Be competent in evaluating design alternatives;
  - Be competent with software design and development practices and standards;
  - Be familiar with researching and evaluating computing tools and practices for solving given problems;
  - Be competent with deadline driven projects in a team setting;
  - Be competent with issues of project management, such as teamwork, project scheduling, individual and group time management;
  - Be competent with presenting work to a group of peers; Be familiar with presenting work to a range of audiences;
  - Be competent with techniques for effective written communication for a range of purposes (user guides, design documentation, storyboards etc.);
  - Be familiar with analyzing professional issues, including ethical, legal and security issues, related to computing projects;
  - Master task-level analysis and problem solving methods for classification problems;
  - GE Reflection-Engag Citizens & Intercultr Comp: Students consider public health, safety, and welfare as well as global, cultural, social, environmental, and economic factors in applying engineering design to produce solutions meeting specified needs.
  - GE Reflection - Personal and Professional Development: Students individually assess and pursue personal professional growth in concert with project requirements and personal career goals.
  - GE Reflection - Cultivate Engineering Mindset: Students develop an engineering mindset that demonstrates constant curiosity, makes connections between disparate bodies of information, and seeks opportunities to create value.
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### **Course Topics:**

- Introduction and overview
  - Natural language processing tools
  - Configuration and design
  - Reasoning with uncertain knowledge
  - Cloud-based question answering architectures
  - Current trends: Information search systems in industry
  - Design meetings, team work
  - Presentations
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### **Designation:**

Elective