

CSCE 781: KNOWLEDGE SYSTEMS Spring 2007

In this course you will learn about modern knowledge management, i.e., systems and techniques for capturing expertise, using it for automated reasoning, and making it available at Internet or intranet Web portals. One result would be intelligent services.

Time: MW 4:00 p.m.- 5:15 p.m. in Swearingen 2A22

Instructor: [Professor Michael N. Huhns](#)

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Text: Ronald Brachman and Hector Levesque, *Knowledge Representation and Reasoning*, Morgan Kaufmann, 2004, ISBN-10: 1558609326.

Supplementary Text: Mark Stefik, *Introduction to Knowledge Systems*, San Francisco, CA: Morgan Kaufmann Publishers, Inc., 1995.

Prerequisite: An introduction to artificial intelligence.

Grading Policy:

- Homework 40%
- Midterm exam 30%
- Final exam 30%

Outline:

- Epistemology
- Overview of Knowledge Systems
- First-Order Logic
- Resolution and Theorem Proving
- Structured Knowledge and Defaults
- Ontologies and Inheritance
- Representing and Reasoning about Uncertainty
- Actions and Planning
- Temporal Representation and Reasoning
- Spatial Representation and Reasoning
- Technology for Web Portal Development
- Architecture for Knowledge Systems
- Knowledge Acquisition and Maintenance for Knowledge Systems
- Knowledge Systems for Classification, Diagnosis, and Design

Required Software: You will need the software packages JESS and JADE. These can be downloaded for free from the following sites:

- JESS: <http://herzberg.ca.sandia.gov/jess>
- JADE: <http://jade.tilab.com/>