

## CS3368, Artificial Intelligence, Fall 2015

### Course Information

- Catalog Description: “This course provides introduction to theory, design, and implementation of intelligent systems”.
- Prerequisite: CS1382.

**Instructor:** Michael Gelfond  
Email Address: Michael.Gelfond@ttu.edu  
Office: 313

**Textbook:** “Knowledge Representation, Reasoning, and the Design of Intelligent Agents”, M. Gelfond and Y. Kahl, Cambridge University Press.

**Course Objectives:** Give an introduction to artificial intelligence with emphasis on theory, design and implementation of intelligent systems.

**Learning Outcomes:** Students are expected to learn:

- Knowledge Representation language Answer Set Prolog (ASP) and several of its variants. (a,b,c,i,j,k)
- Search and reasoning algorithms. (a,b,c,i,j,k)
- Methodology of knowledge representation and design of intelligent systems (a,b,c,i,j,k)

### Methods of Assessment:

Three Midterm Tests - 100 points each

Final exam (comprehensive) - 150 points

Home Work and Class Participation - 50 points.

**Homework Policy:** Homework will be given at least once a week. Some of it will be collected and graded. Questions about the homework (as well as other questions related to the subject material) are encouraged. Students are expected to spend *at least* two and a half hours preparing for each class.

**Attendance Policy:** You are expected to attend every lecture.

**Academic Conduct:** The rules governing academic conduct and Honesty by TTU (<http://www.depts.ttu.edu/opmanual/OP34.12.pdf>) and College of Engineering should be strictly obeyed.

**Students with Disabilities:** Any student who, because of a disability, may require special arrangements in order to meet course requirements should contact the instructor as soon as possible to make any necessary arrangements. Students should present appropriate verification from Student Disability Services during the instructor's office hours. Please note instructors are not allowed to provide classroom accommodations to a student until appropriate verification from Student Disability Services has been provided. For additional information, you may contact the Student Disability Services office in 335 West Hall or 806-742-2405.

**Student Absence for Observance of Religious Holy Day:** University rules (<http://www.depts.ttu.edu/opmanual/OP34.19.pdf>) should be followed.

### **The Intended Material**

- Syntax and Semantics of Answer Set Prolog (ASP).
- Modeling Common Sense Reasoning.
- Answer Set Programming.
- ASP Reasoning Methods.
- Modeling Dynamic Domain.
- Agents in Dynamic Domains: Planning and Diagnostics.
- Probabilistic Reasoning.

### **Lecture Schedule (subject to change as necessary)**

- 8/25 Introduction
- 8/30 The Related Software

- 9/1 Answer Set Prolog
- 9/3 Answer Set Prolog
- 9/8 Creating a Knowledge Base
- 9/10 Creating a Knowledge Base
- 9/15 Creating a Knowledge Base
- 9/17 Reasoning with defaults
- 9/22 Reasoning with defaults
- 9/24 Reasoning with defaults
- 9/29 Test
- 10/1 Discussion
- 10/6 Answer Set Programming
- 10/8 Answer Set Programming
- 10/13 Modeling Dynamic Domains
- 10/15 Modeling Dynamic Domains
- 10/20 Planning
- 10/22 Planning
- 10/27 Test
- 10/29 Discussion
- 11/3 Diagnostic Reasoning
- 11/5 Diagnostic Reasoning
- 11/10 Probabilistic Reasoning
- 11/12 Probabilistic Reasoning

- 11/17 Test
- 11/19 Discussion
- 11/24 Overview
- 12/1 Overview