

Course Outline

1. Document Information

Degree Program	Computer Science
Course Number	CS 536
Course Title	Artificial intelligence II
Semester Hours	3
Course Coordinator	Banafsheh Rekabdar
Revision Term	Fall 2020
Latest Revision	Spring 2021

2. Catalog Description

Theorem proving, the Resolution Principle, strategies, and achievements. Program verification. Natural language processing. Other selected topics.

3. Textbooks

4. References

5. Course Learning Outcomes

- To describe in depth current work in a wide variety of application areas and theoretical approaches.
- To present advanced Lisp and Prolog programming techniques.

6. Assessment of the Contribution to Student Outcomes

Outcome	1	2	3	4	5	6	7
Assessed	X	X				X	X

7. Prerequisites by Topic

CS 436

8. Major Topics Covered in the Course

1. Languages and architectures for problem solving
blackboards, production systems, connection networks, constraint propagation.
2. Default reasoning, uncertainty
nonmonotonic logic, belief revision, certainty factors
3. Natural language understanding
parsers, anaphora, plan recognition, schema application, focus, speech acts
4. Expert systems
MYCIN, XCON, shells, knowledge engineering
5. Advanced knowledge representation
intentional objects, naive physics, analogical representations
6. Programming techniques
agendas, streams, controlling backtracking in Prolog
7. AI research at SIU
8. Learning
version spaces, concept learning, Automated Mathematician
9. Planning
STRIPS, NOAH, metaplanning.

9. Major Lab Assignments and Projects

10. Assessment Plan for the Course

- Tool 1: Homework Assignment: Outcomes 1, 6

- Tool 2: Individual Semester project: Outcomes 6, 7
Research and Technical communication
Professional Development
- Tool 3: Two exams: Outcomes 2, 7