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## CSC 430 Introduction to Artificial Intelligence

(3 contact hours – 0 lab hours – 3 credits)

### Syllabus<sup>1</sup>

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- **General Information**

<b>Instructor</b>	
<b>Office</b>	
<b>Phone</b>	
<b>Class Time</b>	
<b>Class Location</b>	
<b>Office Hours</b>	
<b>Teaching Assistant</b>	

- **Required Textbook**

Artificial Intelligence: Foundations of Computational Agents, D. Poole and A. Mackworth, Cambridge Press, 2010.

- **Supplementary Textbook**

Artificial Intelligence: A Modern Approach, *Third Edition*, S. Russel and P. Norvig, Prentice Hall, 2009.

- **Course Description**

This course covers Turing test, blind search, iterative deepening, production systems, heuristic search, A\* algorithm, minimax and alpha-beta procedures, predicate and first-order logic, resolution refutation and non-monotonic reasoning.

- **Course Prerequisites**

CSC 226 and CSC 313

- **Course Category**

Required

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<sup>1</sup> This syllabus may change as needed. In such a case, students will be informed accordingly

- **Course Outcomes:**

After successful completion of this course the student will be able to:

1. Specify search problems and analyze the associated search spaces. [ABET b, c].
2. Explain the basic data structures and algorithms used in blind, informed, adversarial, and local search. [ABET b, c, j].
3. Implement custom search solutions for specific problems. [ABET c, i, j].
4. Perform time complexity, space complexity, and performance analysis of search algorithms. [ABET b, c, j].
5. Apply propositional logic for knowledge representation. [ABET a, b, i]
6. Explain the components and the architecture of learning. [ABET b, c, j]

- **Tentative Schedule**

<b>Topic</b>	<b>Week</b>
Introduction to AI	1
Chap 1: AI and Agents	2 - 3
Chap 2: Agent Architectures and Hierarchical Control	4 - 5
Chap 3: States and Searching	6 - 8
Chap 4: Features and Constraint	9 - 10
Chap 5: Propositions and Inference	11 - 12
Chap 7: Supervise Learning	13 - 15

- **Grading Scheme**

Quizzes	<b>10%</b>
Assignments	<b>10%</b>
Project	<b>10%</b>
Midterm Exam	<b>30%</b>
Final Exam	<b>40%</b>