CIS 479 Sections 101
Artificial Intelligence
3 Credit Hours, Summer 2020
Recitation, Distance Learning

Contact Information:

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Learning Goals:

Dearborn Discovery Core Category and Goals (intersections):

- Students are able to describe how ways of knowing and creating knowledge differ across disciplines and cultures.
- Students are able to demonstrate knowledge, skills, and attributes needed to understand diverse local or global contexts.
- Students are able to critically evaluate the narratives, values, artifacts, processes, technologies, or structures that may create a just and sustainable society.
- Students are able to creatively integrate theory and practice from across disciplines or from experiences outside of the classroom to address complex questions.

Program Learning Goals:

- Our graduates will be successfully employed in a computer and information science-related field or another career path, in an industrial, commercial, academic, governmental, or non-governmental organization, or will be a successful graduate student in a program preparing them for such employment
- Our graduates will lead and participate in culturally diverse teams, becoming global collaborators and adapting to an ever changing field
- Our graduates will continue their professional development by obtaining continuing education credits, professional registration or certifications, or post-graduate study credits or degrees

Course Objectives:

a. Outcomes of instruction
- The student will be able to describe common knowledge representation schemes

- The student will be able to describe the architectures of machine learning systems and expert systems
- The student will be able to design a state representation and a static evaluation function for an alpha-beta game algorithm
- The student will be able to design experiments using AI tools.

b. Student outcomes addressed in the course

- Outcome 1 – Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
- Outcome 2 – Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program's discipline.

Required Materials and/or Technology:

REQUIRED: Artificial Intelligence: A Modern Approach (3rd Ed) by S. Russell and P. Norvig, Prentice Hall, 2010.

RECOMMENDED: 9th Edition Lisp (3rd Ed) by P. Winston and B. Horn, Addison-Wesley, 1989.

URL: http://www-personal.umd.umich.edu/~bmaxim/
http://groups.umd.umich.edu/cis/course.des/cis479.html
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Assignments and Grading Distributions:

5	Project Assignments	(25 points each)	40%
10	Reading Reflections	(10 points each)	20%
10	Homework	(10 points each)	20%
2	Oral Presentations	(20 points each)	20%

97-100%	**A+**	84-86%	**B**	70-73%	**C-**
94-96%	**A**	80-83%	**B-**	67-69%	**D+**
90-93%	**A-**	77-79%	**C+**	64-66%	**D**
87-89%	**B+**	74-76%	**C**	60-63%	**D-**

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Tentative Course Outline and Schedule:

Date	Activity and Content	Reading
May 4	AI Introduction, State Space Representation	RN1, RN26
May 6	Intelligent Search and Agents	RN2-RN3
May 11	Turn-based Game Opponents and Constraints	RN5-RN6
May 13	Production Systems Expert Systems and Liability	RN7-RN9
May 15	Project 1 – due	
May 18	Uncertainty and Probabilistic Reasoning	RN13-RN14
May 20	Knowledge Acquisition, Decision Making, Prolog	RN16-RN17
May 22	Project 2 – due	
May 25	Memorial Day Holiday – no class	
May 27	Planning and Intelligent Agents	RN2, RN10-RN11
May 29	Project 3 - due	
June 1	Knowledge Representation	RN12
June 3	Genetic Algorithms	RN4
June 5	Project 4 – due	
June 8	Learning Machine and Human, Neural Networks	RN18-RN21
June 10	Natural Language Processing, Chat Bots	RN22-RN23
June 12	Project 5 – due	
June 15	Video Presentations on AI and Social Responsibility	
June 17	Reactive Game AI	Notes
June 19	Project 6 - due	
June 22	Oral Presentation Project Demo	

Course and University Policies:

Instructor or Course Specific Policies:

A student enrolled in a course (lecture, laboratory, recitation, colloquium, seminar, or other university approved format) is expected to attend every scheduled session of the course. The instructor of each course will make known to the students the course attendance policy with respect to student absences. It is the student's responsibility to be aware of this policy. The instructor makes the final decision to excuse or not to excuse an absence.

Presence or participation is also expected in online courses. Participation in online courses can take various forms; it is the instructor who determines what form of presence or participation is expected. Students enrolled in online courses are responsible for being aware of that policy/expectation. An instructor is entitled to give a failing grade for excessive absences or for a student who stops participating in class at some point during the semester.

The University of Michigan-Dearborn values academic honesty and integrity. Each student has a responsibility to understand, accept, and comply with the University's standards of academic conduct as set forth by the Code of Academic Conduct, as well as policies established by each college. Cheating, collusion, misconduct, fabrication, and plagiarism are considered serious offenses and violations can result in penalties up to and including expulsion from the University.

University-wide Policies or Statements Relevant to Courses:

Please see the 'Course Policies' Menu on Canvas for information on the following:

- University Attendance Policy
- Academic Integrity Policy
- Counseling
- Disabilities Services
- Safety Statement
- Harassment, Sexual Violence, Bias, and Discrimination