

CIS 479 Sections 101 and 102
Artificial Intelligence
3 Credit Hours, Summer 2020
6:00-8:40 M Recitation, Hybrid Online

Contact Information:

- Professor Bruce R. Maxim
 - Office Hours: 2-4 M W & by appt.
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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 (4th Ed) by S. Russell and P. Norvig, Prentice Hall, 2021`.

URL: <http://www-personal.umd.umich.edu/~bmaxim/>
<http://groups.umd.umich.edu/cis/course.des/cis479.html>

Assignments and Grading Distributions:

5 of 6	Project Assignments	(25 points each)	40%
10 of 12	Reading Reflections	(10 points each)	20%
10 of 12	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-

Tentative Course Outline and Schedule:

Date	Activity and Content	Reading
May 5	AI Introduction, State Space Representation	RN1, RN26
May 10	Intelligent Search and Agents	RN2-RN3
May 12	Turn-based Game Opponents and Constraints	RN5-RN6
May 14	Project 1 – due	
May 17	Expert Systems and Liability	RN7-RN9,RN26
May 19	Uncertainty and Probabilistic Reasoning	RN12-RN13
May 21	Project 2 – due	
May 24	Knowledge Acquisition, Decision Making, Prolog	RN16-RN17
May 26	Planning and Intelligent Agents	RN2, RN11
May 28	Project 3 - due	
May 31	Memorial Day Holiday	
June 02	Genetic Algorithms	RN4
June 04	Project 4 – due	
June 07	Knowledge Representation	RN10
June 09	Natural Language Processing, Chat Bots	RN23
June 11	Project 5 – due	
June 14	Learning Machine and Human, Neural Networks	RN19-RN22
June 16	Video Presentations on AI and Social Responsibility	
June 18	Project 6 - due	
June 21	Oral Presentation Project Demo	

Course and University Policies:

Instructor or Course Specific Policies:

University Attendance Policy:

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.

CECS Academic Code of Conduct

The Faculty of the University of Michigan - Dearborn, College of Engineering and Computer Science (CECS) believe that our students are honorable, ethical, trustworthy people. Students who engage in cheating of any kind, place the academic integrity and reputation of our university and our college in jeopardy.

To ensure that all CECS students receive an equitable education and are prepared for the workforce, the [University of Michigan - Dearborn Academic Code of Conduct](#) will be strictly enforced in all CECS courses. All CECS students are required to read, understand, and follow the Academic Code of Conduct, as well as any additional rules that the course instructor provides. Students who violate the Academic Code of Conduct or course rules, are subject to all penalties indicated, including failing the course, potential loss of scholarship funds or expulsion from the university.

Cheating includes, but is not limited to:

- Receiving assistance of any kind, on any individual, graded assignment or exam
- Providing assistance of any kind, on an individual, graded assignment or exam
- Using materials that are prohibited on any graded assignment or exam
- Test/Exam Parties - i.e., completing an individual exam as a group project
- Collusion/Deception of any kind, including but not limited to:
 - coordinating with others to obtain or distribute prohibited or unpublished materials
 - giving false information to receive time extensions or re-takes
 - obtaining and using previous exams not provided by the instructor
- Using a mobile device (including smart watches) to communicate with others during an exam
- Paying another person to complete coursework, including exams
- Receiving payment to complete another student's work, including exams

- Requesting and using help from Chegg, Course Hero or any other such service
- Submitting examination information to Chegg, Course Hero or any other such service
- Plagiarism - using another person's work without properly citing
- Storing equations or solutions in a calculator to use on a quiz or exam when not permitted
- Screenshots of Canvas quizzes or exams
- Any "hacks" used to access Canvas content or other materials before released
- Any other dishonest action that violates course rules and/or the Academic Code of Conduct

If you are questioning an action you are about to take and cannot reach your instructor to verify, it is likely that you should not proceed with that action. Oral exams may be given to determine if a student understands the course material.

Mask Policy

Research indicates that the transmission of COVID-19 is greatly reduced when all individuals wear face coverings in any gathering. In accordance with Michigan Governor Gretchen Whitmer's [Executive Order 2020-153](#) and the Centers for Disease Control and Prevention [guidelines](#), the University of Michigan-Dearborn [Face Covering Policy for COVID-19](#) requires everyone to wear a face covering over their nose and mouth on campus grounds, in any campus building, especially in laboratory and classroom spaces. The University will provide face coverings to any student, faculty, or staff member upon request.

Anyone attending class in person without a proper and visible face covering will be asked to put one on or leave. Instructors will end class if anyone present refuses to appropriately wear a mask for the duration of class. Students should also be sure they are situated at least six feet away from anyone in the class and located in a seat designated to ensure that distance.

Students who refuse to wear face coverings or appropriately adhere to other stated requirements may face disciplinary action under the [Disruptive Student Behavior policy](#). Students may contact [Disability Services](#) to determine if an accommodation is reasonable under the Americans with Disabilities Act.

Food Pantry

The pantry exists to support individuals on their journey as they work toward achieving their goals. We are committed to increasing access to food as a key to success, by assisting any student in need! If you need access or have questions, please contact the Office of Student Life by phone at 313-593-5390, by email at umdearbornpantry@umich.edu.

Library

Go to the Mardigian Library website at library.umd.umich.edu for information about accessing research help, accessing the library's online databases, articles, and ebooks, and checking out physical items from the library. Research librarians will be available online Sunday through Friday via live chat, text, email, and by appointment to help you with any of your research needs. Contactless pickup is also available Sunday through Thursday by appointment for books, course reserves, DVDs, and loanable technology including Chromebooks.



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