# University of Michigan-Dearborn Syllabus


**CIS 479: Introduction to Artificial Intelligence, 3 Credits**
Semester and Year: Summer 2022

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Office hours: MW 12:30PM-2PM via https://umich.zoom.us/j/99375190366 or by appointment; or in person by appointment
Course Meeting Times and Format(s): MW 3:00PM - 5:45PM, Lecture in ELB 1321
Lecture Video Availability: MW
Dearborn Discovery Core Category or Categories: Intersections

**Course Description** This course is intended to provide an overview of the problems and methods studied in the field of artificial intelligence. The focus of the course will be on the study of methods of knowledge representation, data structures, and algorithms useful to the development of intelligent programs. The course will also include discussion of important applications of AI methodology.
Prerequisites: CIS 350 or CIS 3501 or IMSE 350 or (ECE 370 and ECE/MATH 276).

### Program 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.

### Dearborn Discovery Core Goals

- 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.

**Course Objectives**

- Ability to describe architectures of machine learning systems or expert systems.
- Ability to describe common knowledge representation schemes.
- Ability to design state representations and heuristic functions to guide the automated solution of simple problems.
- Demonstrate an understanding of professional, ethical, legal, security and social issues and responsibilities associated with computer-controlled systems.
- An ability to develop computer-based solutions to problems using artificial intelligence tools and techniques.

**Required Materials and/or Technology:**

- [Required Textbook] Artificial Intelligence: A Modern Approach (4th Edition) by S. Russell and Peter Norvig, Addison-Wesley, 2020. The 3rd edition is acceptable too. The chapter numbers I quote will be based on the 4th Edition.
- [Required Technology] Computer Access.

**University Attendance Policy** Each in-classroom student is expected to attend every class. Each student needs to inform the instructor of the reason for each absence. Each distance learning student is expected to watch every recorded lecture instead. The instructor is entitled to give a failing grade (E) for excessive absences or an Unofficial Drop (UE) for a student who stops attending or watching recorded lectures at some point during the semester.

**Academic Integrity** 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 (`http://umdearborn.edu/697817`), as well as policies established by each college. Cheating, collusion, misconduct, fabrication, and plagiarism are considered serious offenses, and may be monitored using tools including but not limited to `Turnitin Simcheck`. Violations can result in penalties up to and including expulsion from the University. At the instructor's discretion, the penalty may be a grade of zero on the assignment up to and including recommending that the student be expelled from the University. It is the sole responsibility of the student to understand and follow academic guidelines regarding plagiarism. The University of Michigan-Dearborn has an online academic integrity tutorial that can be accessed at `https://webapps.umd.umich.edu/aim`.

Practice of this class: ZERO Tolerance of Violation! For any suspect of a violation, the instructor will meet with the student. For a minor violation, half credit of the whole assignment

will be deducted. Otherwise, the instructor will check with College Undergraduate Advising Office to see if the student has prior violation in the university-level database. For a first time offender case, the penalty will be a grade of zero on the assignment up to. For a repeat offender case, it goes to the Code of Conduct Committee (Integrity Committee, as is referred to in the campus document) for further deliberation.

**Grading Policy**

- Items: This course includes (subject to change)

| Items | Counts | Credits |
|---|---|---|
| Participation | multiple | 8% |
| Homework | 4 | 4%*4 |
| Programming | 2 | 8%*2 |
| Exams | 2 | 30%*2 |

- Grading Scale: No curve will be used. The final grade will strictly follow this scale:

| | | | | | |
|---|---|---|---|---|---|
| A+ | 100%+ – 96.67% | A | 96.66% – 93.34% | A- | 93.33% – 90.00% |
| B+ | 89.99% – 86.67% | B | 86.66% – 83.34% | B- | 83.33% – 80.00% |
| C+ | 79.99% – 76.67% | C | 76.66% – 73.34% | C- | 73.33% – 70.00% |
| D+ | 69.99% – 66.67% | D | 66.66% – 63.34% | D- | 63.33% – 60.00% |
| E | 59.99% – 00.00% | | | | |

- Participation: A quiz will be posted on Canvas after each lecture. Each student is given a few days to work on each quiz. All students are expected to watch the recorded lecture in order to work on the quizzes. Late submission is acceptable but with 1%-credit-per-hour penalty.

- Homework assignments: All should be done individually. All will be due at the time specified and should be submitted through Canvas website. Late submission is acceptable but with 1%-credit-per-hour penalty. Since all homework assignments will be reviewed before the exams, late submissions for HW2 and HW4 will NOT accepted after the review lectures start. Exceptions to these rules will be made only under exceptional circumstances, and then only with an appropriate written excuse. Many questions are similar to the ones in exams. So, make sure to finish them well.

- Programming assignments: All could be done by a team with at most two members. Late submission is acceptable but with 1%-credit-per-hour penalty.

- Exams: All will be done remotely but with time constraints. No late submission is allowed. Make-up exams will NOT be given unless there is prior notification of and arrangement with the instructor. In case of emergency on the day of exam, a police report, birth certificate, doctor's note or the equivalent is required for the make-up to be granted. We expect that the exams will have some bonus points.

**Disability Statement** The University will make reasonable accommodations for persons with documented disabilities. Students need to register with Counseling & Disability Services (DS) every semester they are enrolled. DS is located in 2157 UC (`https://umdearborn.edu/students/`

disability-services). To be assured of having services when they are needed, students should register no later than the end of the add/drop deadline of each term. If you have a disability that necessitates an accommodation or adjustment to the academic requirements stated in this syllabus, you must register with DS as described above and notify the instructor.

**Harassment, Sexual Violence, Bias, and Discrimination** The University of Michigan-Dearborn recognizes that students have a right to study in a safe atmosphere free of sexual violence, harassment, bias and discrimination. Should you wish to report an incident of sexual assault, harassment, bias and discrimination, visit https://umdearborn.edu/offices/enrollment-management-student-life/incident-and-complaint-reporting.

**Course schedule** Check online on Canvas (subject to change).