

University of North Texas
Department of Computer Science and Engineering
CSCE 5210 – Fundamentals of Artificial Intelligence
Session: Fall/2025

Class:

CSCE 5210-001 (7406), CSCE 5210-600 (9143)
Th 5:30PM - 8:20PM– **NTDP B155**

Instructor:

Dr. Moawia Eldow

Office: E250E

Email: moawia.eldow@unt.edu

Office hours: TuTh: 11:30 am – 1:00 pm

TAs/IAs:

Name: Yuxuan Liu

Email: YuxuanLiu@my.unt.edu

Office hours: Th 2:30–4:30 pm, (F288), Fr 1:00–2:00 pm (Online)

(Important statement: *We reserve the right to modify course policies, the course outline, assignment or project point values, and due dates.***)**

Description:

A broad understanding of the basic techniques for building intelligent computer systems and how AI is applied to solve problems. The emergent nature of intelligent behavior through robust and efficient sensation, knowledge representation, and decision making are demonstrated through a series of hands-on demonstrations and tutorials. Ethical implications of automation and autonomy of machines are discussed through case studies.

Prerequisites: None. Good backgrounds on **programming languages**, **discrete math** and **data structures** can help overcome many fundamentals covered in the class.

Learning Outcomes:

By the end of the course, students will

1. Be familiar with intelligent agents and basic concepts of artificial intelligence.
2. Be familiar with search algorithms including informed search and heuristic search.
3. Be able to design and use agents for constraint satisfaction problems
4. Be able to use propositions and inference techniques.
5. Be able to use basic algorithms in supervised machine learning.
6. Be familiar with neural networks and deep learning
7. Be familiar with reasoning under uncertainty.
8. Be familiar with ethical and social impacts of artificial intelligence and describe the societal responsibility for ethical considerations for AI developers, operators, and users to always act legally and ethically.

Primary Text (required):

Artificial Intelligence: Foundations of Computational Agents, 3rd Edition,

David L. Poole and Alan K. Mackworth,

Cambridge University Press, 2023. ISBN: 9781009258197 (print), 9781009258227 (digital).

Available online at: <https://artint.info/3e/html/ArtInt3e.html>

Assessment Components:

Class Participation:

Student participation in this class can be counted from the attendance, the Canvas contribution (the volume of student work/activity on Canvas) and the discussion participation in the class.

Quizzes:

Generally, quizzes will be given based on the readings and topics covered in classes. Quizzes will test students' knowledge on the most important aspects of the readings and understanding of the topics covered in some modules. **Quizzes will be available only in the week as the module, and it will be only on Fridays.**

Homework Assignments:

Written homework assignments/exercises Assignments may be turned in using the dropbox on canvas. Please use a high resolution black and white scan for handwritten exercises. **Homework assignments will be due at 11:59 pm on Wednesdays.**

Programming Assignments:

The program may be written in any language as long as the TA and the professor are able to build and execute from source code. If in doubt, contact the instructor to verify that the programming environment is acceptable. Assignments may require using modifying the textbook's python code from AI Python. Programs may be turned in using the dropbox on canvas. **Programming assignments will be due at 11:59 p.m. on Fridays.**

Project:

Each group of 3 to 5 students need to work in one project through the term. Components of the project may include a proposal, milestone first report, and final project code and report. Projects may be turned in using the dropbox on canvas before the due date.

Exams:

There will be one **midterm exam** during the semester at the normal lecture time, which will cover the first half of the class topics. There will also be a **final exam** during finals week, which will cover the second half of the class topics.

Grading:

Participation	5%
Quizzes	10%
Homework Assignments	20%
Programming Assignments	15%
Project	10%
Midterm Exam	20%
Final Exam	20%

Grading Scale:

for score x in 90 _ x	A
80 _ x < 90	B
70 _ x < 80	C
60 _ x < 70	D
x < 60	F

Late Submission Policy:

Assignments may be turned in late, but not more than two weeks. All the late submissions may lose a percentage of their graded point values according to the following schedule:

On time : 0%, 1-3 days : 10%, 4-7 days : 20%, 8-14 days : 40%, > 14 days : 100%

CSCE 5210 - Course Outline (Tentative Schedule):

<u>Weeks</u>	<u>Reading chapters and Topics</u>	<u>Quiz (Q), Homework (H), Program (P) (on/due date)</u>
<u>Aug 18 - 22</u>	Overview of Class <u>Ch1</u> – Artificial Intelligence & Agents	
<u>Aug 25-29</u>	<u>Ch1</u> – AI & Agents (cont.)	H1 (09/03)
<u>Sep 1-5</u>	<u>Ch3</u> – Searching of Solutions	<u>Project Proposal due on Sep 5th, 2025</u>
<u>Sep 8-12</u>	<u>Ch3</u> – Searching of Solutions (cont.)	<u>Q1 (09/12), H2 (09/17), P1 (09/19)</u>
<u>Sep 15-19</u>	<u>Ch4</u> – Reasoning with Constraints	
<u>Sep 22-26</u>	<u>Ch4</u> – Reasoning with Constraints (Cont.)	H3 (10/01), P2 (10/03)
<u>Sep 29-Oct 3</u>	<u>Ch5</u> – Propositions and Inference	<u>Project milestone first report due on Oct 3th, 2025</u>
<u>Oct 6-10</u>	Mid-Term Exam (<u>Thursday 10/09/25</u>)	
<u>Oct 13-17</u>	<u>Ch15</u> – Individuals and Relations	<u>Q2 (10/17), H4 (10/22), P3 (10/24)</u>
<u>Oct 20-24</u>	<u>Ch7</u> – Supervised Machine Learning	H5 (10/29), P4 (10/31)
<u>Oct 27-31</u>	<u>Ch8</u> – Neural Networks & Deep Learning	<u>Q3 (10/31), H6 (11/05), P5 (11/07)</u>
<u>Nov 3-7</u>	<u>Ch9</u> – Reasoning with Uncertainty	H7 (11/12)
<u>Nov 10-14</u>	<u>Ch18</u> – The Social Impacts of AI	<u>Q4 (11/14), Project final report due on Nov 14th, 2025</u>
<u>Nov 17-21</u>	Project Presentations: Discussion Forum (Posting presentation videos, sending questions to other groups, and replying to questions from another groups/instructor/TAs)	
<u>Nov 24-28</u>	<u>Thanksgiving Break - No Classes</u>	
<u>Dec 1-5</u>	Review Week	
<u>Dec 8-12</u>	Final Exam (<u>Thursday 12/11/2025</u>)	

Communication

Students are expected to communicate with the instructor/TAs through the office hours, using only the UNT emails of students and instructor/TAs, and/or the communication facilities provided in Canvas. Connect with me through email and/or by attending office hours. During busy times, my inbox becomes rather full, so if you contact me and do not receive a response within two business days, please send a follow up email. A gentle nudge is always appreciated.

Laboratory Safety Procedures and Guidelines policy

Students can access this policy at: [Laboratory Safety Procedures and Guidelines policy \(PDF\)](https://policy.unt.edu/sites/default/files/06.049_Standard%20Syllabus%20Policy%20Statements_supplement.pdf) (https://policy.unt.edu/sites/default/files/06.049_Standard%20Syllabus%20Policy%20Statements_supplement.pdf).

Attendance and Participation

Research has shown that students who attend class are more likely to be successful. You should attend every class unless you have a university excused absence such as active military service, a religious holy day, or an official university function as stated in the [Student Attendance and Authorized Absences Policy \(PDF\)](https://policy.unt.edu/sites/default/files/06.039_StudAttnandAuthAbsence.Pub2_.19.pdf) (https://policy.unt.edu/sites/default/files/06.039_StudAttnandAuthAbsence.Pub2_.19.pdf). If you cannot attend a class due to an emergency, please let me know. Your safety and well-being are important to me.

Digital Requirements

This course has digital components. To fully participate in this class, students will need internet access to reference content on the Canvas Learning Management System. If circumstances change, you will be informed of other technical needs to access course content. Information on how to be successful in a digital learning environment can be found at Learn Anywhere (<https://online.unt.edu/learn>).

How to Succeed in this Course

The University of North Texas makes reasonable academic accommodation for students with disabilities. Students seeking reasonable accommodation must first register with the Office of Disability Access (ODA) to verify their eligibility. If a disability is verified, the ODA will provide you with a reasonable accommodation letter to be delivered to faculty to begin a private discussion regarding your specific needs in a course. You may request reasonable accommodations at any time; however, ODA notices of reasonable accommodation should be provided as early as possible in the semester to avoid any delay in implementation. Note that students must obtain a new letter of reasonable accommodation for every semester and must meet with each faculty member prior to implementation in each class. Students are strongly encouraged to deliver letters of reasonable accommodation during faculty office hours or by appointment. Faculty members have the authority to ask students to discuss such letters during their designated office hours to protect the privacy of the student. For additional information, refer to the [Office of Disability Access](http://www.unt.edu/oda) website (<http://www.unt.edu/oda>). You may also contact ODA by phone at (940) 565-4323.

Supporting Your Success and Creating an Inclusive Learning Environment

Every student in this class should have the right to learn and engage within an environment of respect and courtesy from others. We will discuss our classroom's habits of engagement and I also encourage you to review UNT's student code of conduct so that we can all start with the same baseline civility understanding ([Code of Student Conduct](https://deanofstudents.unt.edu/conduct)) (<https://deanofstudents.unt.edu/conduct>)

Academic integrity, student misconduct, and professionalism policies for CSE

These are the policies of the Department of Computer Science and Engineering (CSE) at University of North Texas related to academic integrity, student misconduct, and professionalism.

All department policies on Academic Integrity and Student Conduct apply for this course – these are available at the following link:

<https://engineering.unt.edu/cse/students/resources/academic-integrity.html>

You can also download one copy from the course site on Canvas.

Artificial Intelligence in Academic Integrity

Students need to be aware the "unauthorized" use of any person or technology that assists in a student's assignment, project, or paper is considered cheating under the UNT Student Academic Integrity Policy (UNT Policy 6.003). Unless a professor or instructor gives explicit "authorization," AI cannot be used to assist in the completion of assignments, projects, or papers. Doing so will result in a "cheating" violation. Again, if uncertain contact the instructor prior to using AI tools.

Other University Policies

Students will be aware about Eagle Alert if there is a campus closing that will impact a class and the calendar is subject to change, refer to the [Emergency Notifications and Procedures Policy \(PDF\)](#) and the Campus Closures Policy (<https://policy.unt.edu/policy/15-006>).

Students can access these policies in Navigate (Navigate.unt.edu), in Canvas under the Help menu, in EIS, and on the [Student Support Services & Policies](#) page.