CS4442/9542 Course Outline

1. Course Information

Course Information
Artificial Intelligence II (4442/9542), Fall 2024, the lectures will be held in NCB-113 on Mondays 9:30 – 11:30 AM and Wednesdays 10:30 -11:30 AM.

List of Prerequisites
Mathematics 1600A/B or Applied Mathematics 1411A/B, and Computer Science 3307A/B/Y or Software Engineering 3350A/B. In addition, students should have a solid background in linear algebra and statistics.

Unless you have either the requisites for this course or written special permission from your Dean's Designate (Department/Program Counsellors and Science Academic Advisors) to enroll in it, you may be removed from this course and it will be deleted from your record. This decision may not be appealed. You will receive no adjustment to your fees in the event that you are dropped from a course for failing to have the necessary prerequisites.

2. Instructor Information

Instructors	Email	Office	Phone	Office Hours
Dr. Boyu Wang (Course Coordinator)	bwang@csd.uwo.ca	MC-366		Wednesdays 11:30am-12:30pm @ MC-366 or by appointment
Dr. Yalda Mohsenzadeh	ymohsenz@uwo.ca	MC-385		Wednesdays 11:30am-12:30pm @ MC-385 or by appointment TA: TBD
TA	TBD			

Students must use their Western (@uwo.ca) email addresses when contacting their instructors. The students should include the course number in the subject line of the email and what the email is related to. For example: CS4442 – assignment 1.

3. Course Syllabus, Schedule, Delivery Mode

A broad range of areas falls into the field of Artificial Intelligence. In this course we give a brief introduction to two very active areas of Artificial Intelligence: machine learning and deep learning with applications in computer vision and/or natural language processing. The programming assignments will be done in Python/Matlab. During this course we will study both algorithmic perspectives of artificial intelligence and their practical applications.

Classes begin: Sept. 5, 2024
Fall Reading Week: Oct. 12 – 20, 2024
Classes end: Dec. 6, 2024
Exam period: Dec. 9 – 22, 2024

Contingency plan
Although the intent is for this course to be delivered in person, should any university-declared emergency require some or all of the course to be delivered online, either synchronously or asynchronously, the course will adapt accordingly. The grading scheme will **not** change. Any assessments affected will be conducted online as determined by the course instructor.

4. Course Materials

There is no required textbook. However, there are several good machine learning and computer vision textbooks describing parts of the material that we will cover.

- Mitchel, “Machine Learning”, McGraw-Hill, 1997
- Forsyth and Ponce, “Computer Vision: A Modern Approach”, Prentice Hall, 2002
- Goodfellow, Bengio, Courville, “Deep Learning”, MIT Press, 2016
- Bishop, “Pattern Recognition and Machine Learning”, Springer, 2006.
- Murphy, "Machine Learning: a Probabilistic Perspective", MIT Press, 2012.

Individual papers or web resources may be assigned to supplement lecture material.

All course material will be posted to OWL: https://westernu.brightspace.com/

Students are responsible for checking the course OWL site (https://westernu.brightspace.com/) regularly for news and updates. This is the primary method by which information will be disseminated to all students in the class.

If students need assistance with the course OWL site, they can seek support on the OWL Brightspace Help page. Alternatively, they can contact the Western Technology Services Helpdesk. They can be contacted by phone at 519-661-3800 or ext. 83800.

Technical Requirements
The students need to have access to stable internet connection, computer with working microphone and/or webcam.

5. Methods of Evaluation

The overall course grade will be calculated as listed below:

Undergrad students:	
Assignments (4)	60%
Final Project	40%

Graduate students:	
Assignments (4)	40%
Project Presentation	10%
Final Project	50%

Undergraduate students will write submit the report of their final project. Graduate students will present their final project and submit a report of their final project.

Tentative Timetable:
Undergraduate students will write submit the report of their final project. Graduate students will present their final project and submit a report of their final project. **Please note that the timetable is tentative and subject to change. Specific deadlines may be adjusted as the course progresses to accommodate the pace and needs of the class.**

Assignment 1: Release: September 23 Due: October 7
Assignment 2: Release: October 11, Due: October 28
Assignment 3: Release: November 8, Due: November 22
Assignment 4: Release: November 22, Due: December 6

10% of each assignment will be taken off each day for late submissions; after 5 days being late, no points are given anymore.

Final Project:

The project is to be completed in groups of two-three graduate students or two-four undergrad students. Students who are working for their research on problems that are amenable to machine learning solutions are strongly encouraged to formulate a project related to their work. Students who do not have such problems should contact the course instructor to discuss possible projects.

Undergraduate students will be required to write a project report.
Graduate students will be required to write a project report, and to do a final project presentation (10 minutes per team). The presentations will be scheduled in the last week of class, during of the class time.

Students are permitted to use ChatGPT or similar software to polish their project reports. However, the use of ChatGPT to generate the entire report is strictly prohibited. Any violation of this policy will result in the report being invalidated, and the grade will be forfeited.

For undergrad students, final project will be due on Dec. 6.
For graduate students, final project report will be due on Dec. 20.

General information about missed coursework
Students must familiarize themselves with the *University Policy on Academic Consideration – Undergraduate Students in First Entry Programs* posted on the Academic Calendar:
https://www.uwo.ca/univsec/pdf/academic_policies/appeals/academic_consideration_Sep24.pdf

This policy does not apply to requests for Academic Consideration submitted for **attempted or completed work**, whether online or in person.

The policy also does not apply to students experiencing longer-term impacts on their academic responsibilities. These students should consult Accessible Education.

For procedures on how to submit Academic Consideration requests, please see the information posted on the Office of the Registrar's webpage:
https://registrar.uwo.ca/academics/academic_considerations/
All requests for Academic Consideration must be made within 48 hours after the assessment date or submission deadline.

All Academic Consideration requests must include supporting documentation; however, recognizing that formal documentation may not be available in some extenuating circumstances, the policy allows students to make one Academic Consideration request **without supporting documentation** in this course. However, the following assessments are excluded from this, and therefore always require formal supporting documentation:

- Presentation/Group Project

When a student ***mistakenly*** submits their one allowed Academic Consideration request **without supporting documentation** for the assessments listed above or those in the **Coursework with Assessment Flexibility** section below, the request cannot be recalled and reapplied. This privilege is forfeited.

Essential Learning Requirements
Even when Academic Considerations are granted for missed coursework, the following are deemed essential to earn a passing grade:

Students must obtain at least 50% score of the assignments AND complete the final project to pass the course. For the project report, students are not expecting to be accommodated if they become sick at the due date.

6. Additional Statements

Religious Accommodation
When conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request an accommodation for their absence in writing to the course instructor and/or the Academic Advising office of their Faculty of Registration. This notice should be made as early as possible but not later than two weeks prior to the writing or the examination (or one week prior to the writing of the test).

Please visit the Diversity Calendars posted on our university's EDID website for the recognized religious holidays:

https://www.edi.uwo.ca.

Accommodation Policies
Students with disabilities are encouraged to contact Accessible Education, which provides recommendations for accommodation based on medical documentation or psychological and cognitive testing. The policy on Academic Accommodation for Students with Disabilities can be found at:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic Accommodation_disabilities.pdf

Academic Policies
The website for Registrar Services is https://www.registrar.uwo.ca/.

In accordance with policy,

https://www.uwo.ca/univsec/pdf/policies_procedures/section1/mapp113.pdf

the centrally administered e-mail account provided to students will be considered the individual's official university e-mail address. It is the responsibility of the account holder to ensure that e-mail received from the University at their official university address is attended to in a timely manner.

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf

Support Services
Please visit the Science & Basic Medical Sciences Academic Advising webpage for information on adding/dropping courses, academic considerations for absences, appeals, exam conflicts, and many other academic-related matters: https://www.uwo.ca/sci/counselling/.

Students who are in emotional/mental distress should refer to Mental Health@Western (https://uwo.ca/health/) for a complete list of options about how to obtain help.

Western is committed to reducing incidents of gender-based and sexual violence and providing compassionate support to anyone who has gone through these traumatic events. If you have experienced sexual or gender-based violence (either recently or in the past), you will find information about support services for survivors, including emergency contacts at

https://www.uwo.ca/health/student_support/survivor_support/get-help.html

To connect with a case manager or set up an appointment, please contact support@uwo.ca.

Please contact the course instructor if you require lecture or printed material in an alternate format or if any other arrangements can make this course more accessible to you. You may also wish to contact Accessible Education at

http://academicsupport.uwo.ca/accessible_education/index.html

if you have any questions regarding accommodations.

Learning-skills counsellors at Learning Development and Success (https://learning.uwo.ca) are ready to help you improve your learning skills. They offer presentations on strategies for improving time management, multiple-choice exam preparation/writing, textbook reading, and more. Individual support is offered throughout the Fall/Winter terms in the drop-in Learning Help Centre, and year-round through individual counselling.

Western University is committed to a thriving campus as we deliver our courses in the mixed model of both virtual and face-to-face formats. We encourage you to check out the Digital Student Experience website to manage your academics and well-being: https://www.uwo.ca/se/digital/.

Additional student-run support services are offered by the USC, https://westernusc.ca/services/.