CS4442/9542 Course Outline

1. Course Information

Course Information
Artificial Intelligence II (4442/9542), Fall 2022, the lectures will be held in B&GS-0165 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.

Unless you have either the requisites for this course or written special permission from your Dean 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.

In addition, students should have a solid background in linear algebra and statistics.

2. Instructor Information

Instructors	Email	Office	Phone	Office Hours
Dr. Boyu Wang (course coordinator)	bwang@csd.uwo.ca	MC-366		Wednesdays 2:00pm-3:00pm @ MC-366 or by appointment
Mr. Xinyu Yun	xyun@uwo.ca	https://westernuniversity.zoom.us/j/96096930784 (passcode: 4442)		Thursdays 1:30pm-2:30pm on Zoom or by appointment
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

This course is a continuation of CS3346, Artificial Intelligence I. 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: September 8, 2022
Fall Reading Week: October 31 – November 6, 2022
Classes end: December 8, 2022

Contingency plan for an in-person class pivoting to 100% online learning
In the event of a COVID-19 resurgence during the course that necessitates the course delivery moving away from face-to-face interaction, affected course content will be delivered entirely online, either synchronously (i.e., at the times indicated in the timetable) or asynchronously (e.g., posted on OWL for students to view at their convenience). The grading scheme will **not** change. Any remaining assessments will also 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.

Students should check OWL (http://owl.uwo.ca) on a regular basis for news and updates. This is the primary method by which information will be disseminated to all students in the class. Students are responsible for checking OWL on a regular basis.

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All course material will be posted to OWL: http://owl.uwo.ca.

If students need assistance, they can seek support on the OWL 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:
Assignment 1: Release: September 23 Due: October 6
Assignment 2: October 14, Due: October 28
Assignment 3: November 11, Due: November 25
Assignment 4: November 25, Due: December 8

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 Boyu and/or Xinyu 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.

For undergrad students, final project will be due on December 8th.
For graduate students, final project report will be due on December 30th.

In order to do pass the course,
- Undergraduate students must obtain at least 50% score in this course. They must do the final project and they must at least obtain half of the assignments score.
- Graduate students must obtain at least 60% score in this course. They must present their final project and write the final report, and they must obtain at least half of the assignments score.

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

6. Student Absences

By policy, academic considerations for work totalling 10% or more of the final course grade can be granted only by the student's Faculty of Registration (typically by their academic counsellors). In such cases, students should be directed as follows.

You must provide valid medical or supporting documentation to the Academic Counselling Office of your Faculty of Registration as soon as possible. For further information, please consult the University's medical illness policy at

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

The Student Medical Certificate is available at

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

Absences from Final Examinations

This course does not have a final exam, but you are not able to submit your final report due to illness, please contact the Academic Counselling office of your Faculty of Registration as soon as you are able to do so.

Note: missed work can *only* be excused through one of the mechanisms above. Being asked not to attend an in-person course requirement due to potential COVID-19 symptoms is **not** sufficient on its own.

6. Accommodation and Accessibility

Religious Accommodation
When a course requirement conflicts with a religious holiday that requires an absence from the University or prohibits certain activities, students should request accommodation for their absence in writing at least two weeks prior to the holiday to the course instructor and/or the Academic Counselling office of their Faculty of Registration. Please consult University's list of recognized religious holidays (updated annually) at

https://multiculturalcalendar.com/ecal/index.php?s=c-univwo.

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.

7. Academic Policies

The website for Registrarial Services is http://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.

Completion of this course will require you to have a reliable internet connection and a device that meets the system requirements for Zoom. Information about the system requirements are available at the following link:
https://support.zoom.us/hc/en-us

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:

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

8. Support Services

Please visit the Science & Basic Medical Sciences Academic Counselling 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.

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