

COURSE OUTLINES (SYLLABI) FOR UNDERGRADUATE COURSES

1. General Course Information

Course Information

Artificial Intelligence II (4442), Winter 2020, the lectures will be held at WSC 55 on Mondays, Wednesdays, Fridays at 9:30 to 10:30 AM.

List of Prerequisites [if applicable]

- Computer Science 3346 (AI 1) and Computer Science 2210a/b are official prerequisites, with a grade of at least 60%. However, the material covered in AI 2 does not really need AI 1 or Data structure as a prerequisite, therefore we usually give permission to enroll in AI 2 without AI 1 or Data structure.
- One full-course equivalent from: Calculus, Linear Algebra, Statistics

2. Instructor Information

Boyu Wang and, Assistant Professor, bwang@csd.uwo.ca, MC 366

Yalda Mohsenzadeh, Assistant Professor, ymohsenz@uwo.ca, MC 385

Office Hours: Mondays at 3:00 to 4:00 or by appointment

Students must use their Western (@uwo.ca) email addresses when contacting their instructors.

3. Course Description/Syllabus

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 computer vision. The programming assignments will be done in Matlab/Python. During this course we will study both algorithmic perspectives of artificial intelligence and their practical applications especially in computer vision.

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.

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.

5. Methods of Evaluation

The overall course grade will be calculated as listed below:

Assignments (4)	40%
Final Exam (undergraduate)	60%
Final Project (graduate)	60%

Undergraduate students will write the final exam. Graduate students can choose to write the final exam or do a final project.

Tentative schedule:

Assignment 1: Feb 2nd

Assignment 2: Feb 25th

Assignment 3: March 8th

Assignment 4: March 22nd

Final Exam (for undergraduate students): TBD

No electronics device will be allowed (e.g., cellphone, laptop) during the exam, but students can bring one A4 size paper of cheat sheet.

Final Project (for graduate students)

The project is to be completed in groups of two-three graduate 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 Yalda to discuss possible projects.

All 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 (March 30th – April 3rd), during of the class time, and the project report will be due on **TBD**.

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

In order to do pass the course, undergraduate students should take the final exam and graduate students should either take the final exam or present their final project and write the final report.

6. Accommodation and Accessibility

If you are unable to meet a course requirement due to illness or other serious circumstances, you must seek approval for the absence as soon as possible. Approval can be granted either through a self-

reporting of absence or via the Dean's Office/Academic Counselling unit of your Home Faculty. If you are a Science student, the Academic Counselling Office of the Faculty of Science is located in NCB 280, and can be contacted at scibmsac@uwo.ca.

For further information, please consult the university's policy on academic consideration for student absences:

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

If you miss the Final Exam, please contact your faculty's Academic Counselling Office as soon as you are able to do so. They will assess your eligibility to write the Special Exam (the name given by the university to a makeup Final Exam).

You may also be eligible to write the Special Exam if you are in a "Multiple Exam Situation" (see http://www.registrar.uwo.ca/examinations/exam_schedule.html).

7. Academic Policies

The website for Registrarial Services is <http://www.registrar.uwo.ca>.

In accordance with policy, <http://www.uwo.ca/its/identity/activatenonstudent.html>, 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 his/her 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: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_undergrad.pdf.

All required papers may be subject to submission for textual similarity review to the commercial plagiarism detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

Computer-marked multiple-choice tests and exams may be subject to submission for similarity review by software that will check for unusual coincidences in answer patterns that may indicate cheating.

8. Support Services

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 Student Accessibility Services (SAS) at 661-2147 if you have any questions regarding accommodations.

The policy on Accommodation for Students with Disabilities can be found here:

https://www.uwo.ca/univsec/pdf/academic_policies/appeals/Academic%20Accommodation_disabilities.pdf

The policy on Accommodation for Religious Holidays can be found here:

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

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

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