

CS 3346b / CS 3121b

WINTER 2018

Course Description

The academic calendar states "Introduction to Artificial Intelligence; logic programming; heuristic search; knowledge representation; expert systems." This description is a bit dated. The course is an introduction to Artificial Intelligence but looks instead at the fundamentals used in the construction of intelligent agents. Included is heuristic search and knowledge representation, but also included is logical reasoning, machine learning, and planning. Programming will require the use of Python. Expert systems will not be covered.

Students will be introduced to a number of fundamental ideas which are useful for understanding the research literature and building intelligent artifacts.

Prerequisites

Either (Computer Science 2210A/B and 2211A/B) or (Software Engineering 2203A/B, 2205A/B and 2250A/B); Computer Science 2209A/B, or registration in the BESC program in Computer Engineering or Software Engineering. Students are responsible for the appropriate algorithmic or logic background.

Unless you have either the requisites for this course or written special permission from your Dean to enroll in it, you will 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.

Instructor

Name	Dr. Robert Mercer
Office	MC 28A-2
Office Hours	Wednesday 9-10am (or by appointment)
Phone	86893 (emergencies only)
E-Mail	mercero@csd.uwo.ca (preferred communication method)

Course Materials

Textbooks: Artificial Intelligence : A Modern Approach (Stuart J. Russell and Peter Norvig) (available in the library) and Artificial Intelligence:

Foundations of Computational Agents 2nd edition (David L. Poole and Alan K. Mackworth) (available online at <http://artint.info/>)

Lecture Slides: Slides will be available online on the course website.
Alternative Reading: Artificial Intelligence : Structures And Strategies For Complex Problem Solving (George F. Luger)
This textbook is available in the library.

Course Website

<http://www.csd.uwo.ca/courses/CS3346a/>

Course Topics

The course will follow the textbooks reasonably closely with some chapters left out. In the following, “RN” are chapters from Russell and Norvig and “AI2e” are chapters from Poole and Mackworth.

Topic 1: Chapter RN1: Introduction
Topic 2: Chapter RN2: Intelligent Agents
Topic 3: Chapter RN3: Solving Problems by Searching
Topic 4: Chapter RN5: Adversarial Search
Topic 5: Chapter RN6 and AI2e4: Constraint Satisfaction Problems
Topic 6: Chapter RN7, RN8, RN9, and AI2e5: Logical Agents using Classical and Non-classical Logic
Topic 7: Chapter RN10: Classical Planning
Topic 8: Chapter RN18: Learning from Examples
Topic 9: Introduction to Prolog and Answer Set Programming
Topic 10: Introduction to OWL

Class Schedule

Lectures: Tuesday 9:30-11:30am UCC 56 Wednesday 9:30-10:30am, MC 105b

TA Consulting Hours

TA: TBA TBA, MC 4A

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Computing Facilities

Each student will be given an account on the Computer Science Department senior undergraduate computing facility, GAUL. In accepting the GAUL account, a student agrees to abide by the department's [Rules of Ethical Conduct](#) .

Email Contact

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We occasionally need to send email messages to the class or to students individually. Email is sent to the UWO email address as assigned to you by Information Technology Services (ITS), i.e. your email address @uwo.ca. It is your responsibility to read this email on a frequent and regular basis, or to have it forwarded to an alternative email address if preferred. See the ITS website for directions on forwarding email.

However, note that email at ITS (your UWO account) and other email providers may have quotas or limits on the amount of space they dedicate to each account. Unchecked email may accumulate beyond those limits and you may be unable to retrieve important messages from your instructors. Losing email is not an acceptable excuse for not knowing about the information that was sent.

Student Evaluation

Four assignments worth 25% each.

If for any reason the assignment schedule given below cannot be adhered to, the assignment marks will be pro-rated. (The n assignments are worth $k\%$ of the overall mark for the course. If an assignment has to be cancelled for any reason, the remaining assignment weights will be prorated to add up to $k\%$.)

Every effort will be made to have assignments marked and handed back within 3 weeks of the handin date, preferably sooner.

Academic Accommodation for Medical Illness

If you are unable to meet a course requirement due to illness or other serious circumstances, you must provide valid medical or other supporting documentation to your the Academic Counselling Office of your home faculty as soon as possible and contact your instructor immediately. If you are a Science student, the Academic Counselling Office of the Faculty of Science is located in WSC 140, and can be contacted at scibmsac@uwo.ca.

and contact your instructor immediately. It is the student's responsibility to make alternative arrangements with their instructor once the accommodation has been approved and the instructor has been informed. In the event of a missed final exam, a "Recommendation of Special Examination" form must be obtained from the Dean's Office immediately. For further information please see:

<http://www.uwo.ca/sci/counselling/pdf/Submission-of-Medical-Documentation-for-Course-Appeal.pdf>

A student requiring academic accommodation due to illness should use the Student Medical Certificate when visiting an off-campus medical facility or request a Record's Release Form (located in the Dean's Office) for visits to Student Health Services. The form can be found here: http://www.uwo.ca/univsec/pdf/academic_policies/appeals/medicalform.pdf

Assignment and Exam Schedule

Due Dates, Assignment Weights, Workload (light, medium, heavy)

All assignments are due by 4pm of the due date.

Assignment 1: Due 26 January 2018 (25% medium)
Assignment 2: Due 16 February 2018 (25% medium)
Assignment 3: Due 16 March 2018 (25% Medium)
Assignment 4: Due 6 April 2018 (25% Medium)

Exam Schedule

There are no exams in this course

Assignments

Submission of Assignments: Instructions will be given with each assignment.

Late Assignment Policy (4pm cutoff):

1 day late: -10% (Monday following due date; before 4pm)

2 days late: -50% (Tuesday following due date; before 4pm)

3 days late: -100% (but will be marked) (after 4pm Tuesday following due date)

Extensions:

Extensions may be granted only by the course instructor. If you have serious medical or compassionate grounds for an extension, you should contact the instructor.

Accessibility Statement

Please contact the course instructor if you require material in an alternate format or if you require any other arrangements to make this course more accessible to you. You may also wish to contact Services for Students with Disabilities (SSD) at 661-2111 x 82147 for any specific question regarding an accommodation.

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

www.uwo.ca/univsec/pdf/academic_policies/appeals/accommodation_disabilities.pdf

Support Services

*The website for Registrarial Services is <http://www.registrar.uwo.ca>
Additional student-run support services are offered by the USC, <http://westernusc.ca/services>.*

Ethical Conduct

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.

Plagiarism: Students must write their assignments in their own words. Whenever students take an idea, or a passage from another author, they must acknowledge their debt both by using quotation marks where appropriate and by proper referencing such as footnotes or citations. Plagiarism is a major academic offence.

All assignments are individual assignments. You may discuss approaches to problems among yourselves; however, the actual details of the work (assignment coding, answers

to concept questions, etc.) must be an individual effort.

The standard departmental penalty for assignments that are judged to be the result of academic dishonesty is, for the student's first offence, a mark of zero for the assignment, with an additional penalty equal to the weight of the assignment also being applied. You are responsible for reading and respecting the Computer Science Department's policy on *Scholastic Offences* and *Rules of Ethical Conduct* .

The University of Western Ontario uses software for plagiarism checking. Students may be required to submit their written work and programs in electronic form for plagiarism checking.

Tutoring

The role of tutoring is to help students understand course material. Tutors should not write assignments or take-home tests for the students who hire them. Having employed the same tutor as another student is not a legitimate defence against an accusation of collusion, should two students hand in assignments judged similar beyond the possibility of coincidence.