



COSC 3P71: Introduction to Artificial Intelligence

Course Information

Course Number: 3P71

Term/Year/Duration: 2024 Fall D2

Course Title: Introduction to Artificial Intelligence

Instructor Information

Instructor Name: Reginald McLean

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Office Locations: TBD

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Teaching Assistants: Tyler McDonald, Zachary McGovarin, Michael Eshun, Rasa Khosrowshahli

Times and Locations

Lectures: Monday & Wednesdays, 12:30-14:00 STH 203

Tutorials: Thursdays, 11:00-12:00, STH203

Course Calendar Description

This is an introductory course to artificial intelligence: fundamental principles, philosophy, and applications.

Required Readings or Texts

Textbook: Artificial Intelligence, A Modern Approach. 4th Edition, S. Russell & P. Norvig, Prentice Hall, 2020.

Course Communications

Through Brightspace.

Assessment Components and Due Dates

Assignments (3): 40%

Midterm: 25%

Final Exam: 35%

Late Submission Policy

No late submissions will be accepted.

Important dates

First day of classes: 4 September

Last day of lectures: 3 December

Last day of exams: 19 December

Deadline for withdrawal without academic penalty: 5 November

Academic Policies

Academic Integrity

Academic misconduct is a serious offence. The principle of academic integrity, particularly of doing one's own work, documenting properly (including use of quotation marks, appropriate paraphrasing and referencing/citation), collaborating appropriately, and avoiding misrepresentation, is a core principle in university study. Students should consult Section VII, "Academic Misconduct", in the "Academic Regulations and University Policies" entry in the [Undergraduate Calendar](#) to view a fuller description of prohibited actions, and the procedures and penalties. Information on what constitutes academic integrity is available at [Brock University Academic Integrity Website](#).

Plagiarism software:

This course may use Turnitin.com, phrase-matching software. If you object to uploading your assignments to Turnitin.com for any reason, please notify the instructor to discuss alternative submissions.

Penalties for Academic Misconduct in the Faculty of Mathematics and Science

The following are standard penalties imposed in academic misconduct cases in FMS. Please be aware that the Associate Dean, Undergraduate Programs, may assign different penalties than those listed here, depending on the details of individual cases. ***Requests for special academic consideration, such as exceptions to academic regulations, will not be considered while academic integrity cases are ongoing.***

Penalties for misconduct in course work, including mid-term tests

First offence: Zero grade on assignment, additional penalty of 100% of the weight of the assignment to be subtracted from the final grade, mandatory completion of the AZLS Academic Integrity workshop

Second offence: Zero grade on assignment, 4-month suspension

Third offence: Zero grade in course, 1-year suspension, permanent removal from major program.

Fourth offence: Permanent suspension / debarment.

Penalties for misconduct in final exams:

First offence: Zero grade in course

Second offence: Zero grade in course, 4-month suspension

Third: Zero grade in course, 1-year suspension, permanent removal from major program,

Fourth offence: Permanent suspension / debarment.

Intellectual Property Notice

All slides, presentations, handouts, tests, exams, and other course materials created by the instructor in this course are the intellectual property of the instructor. A student who publicly posts or sells an instructor's work, without the instructor's express consent, may be charged with misconduct under Brock's Academic Integrity Policy and/or Code of Conduct, and may also face adverse legal consequences for infringement of intellectual property rights.

Accommodations

The University is committed to fostering an inclusive and supportive environment for all students and will adhere to the Human Rights principles that ensure respect for dignity,

individualized accommodation, inclusion and full participation. The University provides a wide range of resources to assist students, as follows:

- a) If you require academic accommodation because of a disability or an ongoing health or mental health condition, please contact Student Accessibility Services at askSAS@brocku.ca or 905 688 5550 ext. 3240.

b) Medical Self-Declaration Forms (brief absence up to 72 hours)

In the case of a short-term medical circumstance, if a student wishes to seek an academic consideration, please use the [Medical Self-Declaration Form](#). The request is to be made in good faith by the student requesting the academic consideration due to a short-term condition that impacts their academic activities (e.g., participation in academic classes, delay in assignments, etc.).

The period of this short-term medical condition for academic consideration must fall within a 72-hour (3 day) period. The form must be submitted to the instructor either during your brief absence or if you are too unwell, within 24 hours of the end of your 3 day brief absence.

Medical Verification Form (extended duration)

In cases where a student requests academic consideration due to a medical circumstance that exceeds 72 hours (three days) and will impact their academic activities (e.g., participation in academic classes, delay in assignments, etc.), or in the case of a final exam deferral, the [medical verification form](#) must be signed by the student and the health professional as per process set out in the [Faculty Handbook III:9.4.1](#).

- c) If you are experiencing mental health concerns, contact the Student Wellness and Accessibility Centre. *Good2Talk* is a service specifically for post-secondary students, available 24/7, 365 days a year, and provides anonymous assistance: [Good 2 Talk](#) or call **1-866-925-5454**. For information on wellness, coping and resiliency, visit: [Brock University \(Mental Health\)](#)
- d) If you require academic accommodation on religious grounds, you should make a formal, written request to your instructor(s) for alternative dates and/or means of satisfying requirements. Such requests should be made during the first two weeks of any given academic term, or as soon as possible after a need for accommodation is known to exist.
- e) If you have been affected by sexual violence, the Human Rights & Equity Office offers support, information, reasonable accommodations, and resources through the Sexual Violence Support & Education Coordinator. For information on sexual violence, visit [Brock's Sexual Assault and Harassment Policy](#) or contact the Sexual Violence Support & Response Coordinator at humanrights@brocku.ca or 905 688 5550 ext. 4387.

- f) If you have experienced discrimination or harassment on any of the above grounds, including racial, gender or other forms of discrimination, contact the Human Rights and Equity Office at humanrights@brocku.ca.

Sequence and Dates of Topics and Readings

1. What is AI?
2. Intelligent Agents
3. Problem Solving & Search
4. Informed Search
5. Beyond Classical Search & Adversarial Search
6. Evolutionary Computing & Swarm Intelligence (Guest Lecture)
7. Midterm / Reading Week
8. Neural Networks & Backprop
9. Supervised Learning
10. Unsupervised & Self-Supervised Learning
11. Deep Learning (Computer Vision & Natural Language Processing)
12. Reinforcement Learning
13. AI/ML Applications