

CSC311H1 F

Introduction to Machine Learning

Fall 2024 Syllabus

Course Meetings

CSC311H1 F

Section	Day & Time	Delivery Mode & Location
LEC0101	Wednesday, 11:00 AM - 1:00 PM	In Person: EM 001
	Friday, 11:00 AM - 12:00 PM	In Person: EM 001
LEC0201	Tuesday, 3:00 PM - 5:00 PM	In Person: AH 100
	Thursday, 3:00 PM - 4:00 PM	In Person: KP 108

Refer to ACORN for the most up-to-date information about the location of the course meetings.

Course Contacts

Course Website: https://www.cs.toronto.edu/~rahulgk/courses/csc311_f24/index.html

Instructor: Rahul G. Krishnan

Email: rahulgk@cs.toronto.edu

Additional Notes: - Use CSC311 in the subject line - Please allow 24-48 hours for a response to a request

Instructor: Amanjit Kainth

Email: amanjitsingh.kainth@mail.utoronto.ca

Course Overview

An introduction to methods for automated learning of relationships on the basis of empirical data. Classification and regression using nearest neighbour methods, decision trees, linear models, and neural networks. Clustering algorithms. Problems of overfitting and of assessing accuracy. Basics of reinforcement learning.

An introduction to methods for automated learning of relationships on the basis of empirical data. The course will cover classification and regression using nearest neighbour methods, decision trees, linear models, and neural networks. The second half of the class covers unsupervised discovery of structure using dimensionality reduction and clustering algorithms. The course will also touch on practical issues of ML including programming in python, overfitting and of assessing accuracy.

Prerequisites: CSC207H1/ [APS105H1](#)/ [APS106H1](#)/ [ESC180H1](#)/ CSC180H1; MAT235Y1/ MAT237Y1/ MAT257Y1/ (minimum of 77% in MAT135H1 and MAT136H1)/ (minimum of 73% in

MAT137Y1)/ (minimum of 67% in MAT157Y1)/ [MAT291H1](#)/ [MAT294H1](#)/ (minimum of 77% in [MAT186H1](#), [MAT187H1](#))/ (minimum of 73% in MAT194H1, MAT195H1)/ (minimum of 73% in [ESC194H1](#), [ESC195H1](#)); MAT223H1/ MAT240H1/ [MAT185H1](#)/ [MAT188H1](#); STA237H1/ STA247H1/ STA255H1/ STA257H1/ STA286H1/ [CHE223H1](#)/ [CME263H1](#)/ [MIE231H1](#)/ [MIE236H1](#)/ [MSE238H1](#)/ [ECE286H1](#)

Corequisites: None

Exclusions: CSC411H1, STA314H1, [ECE421H1](#), CSC311H5, CSC411H5, CSCC11H3.

NOTE: Students not enrolled in the Computer Science Major or Specialist program at A&S, UTM, or UTSC, or the Data Science Specialist at A&S, are limited to a maximum of 1.5 credits in 300-/400-level CSC/ECE courses.

Recommended Preparation: MAT235Y1/ MAT237Y1/ MAT257Y1

Credit Value: 0.5

Marking Scheme

Assessment	Percent	Details	Due Date
Midterm	20%	Held during class times (location to be confirmed later, hopefully at the exam center).	2024-10-16,2024-10-17
HW1	10%		2024-09-24
HW2	10%		2024-10-08
HW3	10%		2024-11-05
Project	10%		2024-11-26
Embedded Ethics module	5%	Pre-Module Survey 1% Completion Class Participation 0.5% Automatically Given Reflection on Class Activity 2% Good-Faith Effort Post-Module Survey 1.5% Completion	2024-11-13,2024-11-14
In-Person Final Exam	35%		Final Exam Period

There is a 40% minimum grade required on the final exam to prevent an autofail in the class. A bonus of up to 2% will be provided to the top 5 students who assist with answering questions on Piazza through the semester.

Late Assessment Submissions Policy

All students have three grace days for homeworks/assignments. No work will be accepted after that time (without the prior submission of accessibility or special consideration forms).

Policies & Statements

Make-Up Quizzes/Tests

This item is listed here to remind you that you may wish to include your policy on make-up quizzes and term tests in your syllabus. There is some latitude in designing a policy that will work in the context of your course, but any policy works best if it is stated clearly from the outset and applied fairly and consistently. See Section 5.3 in the [A&S Academic Handbook \(https://www.artsci.utoronto.ca/faculty-staff/teaching/academic-handbook#TermTests\)](https://www.artsci.utoronto.ca/faculty-staff/teaching/academic-handbook#TermTests).

Academic Integrity

All suspected cases of academic dishonesty will be investigated following procedures outlined in the [Code of Behaviour on Academic Matters \(https://governingcouncil.utoronto.ca/secretariat/policies/code-behaviour-academic-matters-july-1-2019\)](https://governingcouncil.utoronto.ca/secretariat/policies/code-behaviour-academic-matters-july-1-2019). If you have questions or concerns about what constitutes appropriate academic behaviour or appropriate research and citation methods, please reach out to me. Note that you are expected to seek out additional information on academic integrity from me or from other institutional resources. For example, to learn more about how to cite and use source material appropriately and for other writing support, see the U of T writing support website at <http://www.writing.utoronto.ca>. Consult the Code of Behaviour on Academic Matters for a complete outline of the University's policy and expectations. For more information, please see [A&S Student Academic Integrity \(https://www.artsci.utoronto.ca/current/academic-advising-and-support/student-academic-integrity\)](https://www.artsci.utoronto.ca/current/academic-advising-and-support/student-academic-integrity) and the [University of Toronto Website on Academic Integrity \(https://www.academicintegrity.utoronto.ca\)](https://www.academicintegrity.utoronto.ca).

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Make-Up Quizzes/Tests

All students are expected to write the midterm corresponding to their own session. If the student misses the midterm, the grade will be moved to the final. No make up test will be offered. If the student misses the final, they will be expected to work with the Faculty of Arts and Science to retake the test. If the student, for valid reasons that are documented, is unable to complete an

assignment, the instructor has the discretion to distribute the grade for the assignment across different, similar assignments.

Late/Missed Assignments

All deadlines are firm. Each student will receive three grace days for homeworks/assignments to use as they wish. There will be no work accepted after that period.

Video Recording and Sharing (Download and Re-use Prohibited)

This course, including your participation, will be recorded on video and will be available to students in the course for viewing remotely and after each session.

Course videos and materials belong to your instructor, the University, and/or other sources depending on the specific facts of each situation and are protected by copyright. Do not download, copy, or share any course or student materials or videos without the explicit permission of the instructor.

For questions about the recording and use of videos in which you appear, please contact your instructor.