Faculty of Arts and Sciences - Computer Science

CSC310H1 S
Information Theory
Winter 2024 Syllabus

Course Meetings

CSC310H1 S

Section	Day & Time	Delivery Mode & Location
LEC0101	Monday, 11:00 AM - 1:00 PM Wednesday, 11:00 AM - 12:00 PM	In Person: BA 1170 In Person: BA 1190

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

Tutorials start on the first week.

Course Contacts

Course Website: https://q.utoronto.ca/courses/334543

Instructor: Swastik Kopparty
Email: swastik.kopparty@utoronto.ca
Office Hours and Location: Tuesdays: 2pm-3pm, SF3324

Course Overview

Measuring information. Entropy, mutual information and their meaning. Probabilistic source models and the source coding theorem. Data compression. Noisy channels and the channel coding theorem. Error correcting codes and their decoding. Applications to inference, learning, data structures and communication complexity.

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Course Learning Outcomes

Prerequisites: 60% or higher in CSC148H1, CSC263H1/ CSC265H1, MAT223H1/ MAT240H1
Corequisites: None
Exclusions: None
Recommended Preparation: None
Credit Value: 0.5

Course Materials

Recommended books - listed on the course website, available online for free.

Marking Scheme

Assessment	Percent	Details	Due Date
Midterm	20%		2024-02-12
Problem sets	40%	5 HWs, with the lowest grade dropped.	No Specific Date
In-Person Final Exam	40%		Final Exam Period

Late Assessment Submissions Policy

No late HW is accepted. The lowest HW grade is dropped.

Policies & Statements

Religious Accommodations

As a student at the University of Toronto, you are part of a diverse community that welcomes and includes students and faculty from a wide range of cultural and religious traditions. For my part, I will make every reasonable effort to avoid scheduling tests, examinations, or other compulsory activities on religious holy days not captured by statutory holidays. Further to University Policy, if you anticipate being absent from class or missing a major course activity (such as a test or in-class assignment) due to a religious observance, please let me know as early in the course as possible, and with sufficient notice (at least two to three weeks), so that we can work together to make alternate arrangements.

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). 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) and the University of Toronto Website on Academic Integrity (https://www.academicintegrity.utoronto.ca).

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).

Students with Disabilities or Accommodation Requirements

Students with diverse learning styles and needs are welcome in this course. If you have an acute or ongoing disability issue or accommodation need, you should register with Accessibility Services (AS) at the beginning of the academic year by visiting https://studentlife.utoronto.ca/department/accessibility-services/. Without registration, you will not be able to verify your situation with your instructors, and instructors will not be advised about your accommodation needs. AS will assess your situation, develop an accommodation plan with you, and support you in requesting accommodation for your course work. Remember that the process of accommodation is private: AS will not share details of your needs or condition with any instructor, and your instructors will not reveal that you are registered with AS.

Quercus Info (if using)

This Course uses the University's learning management system, Quercus, to post information about the course. This includes posting readings and other materials required to complete class activities and course assignments, as well as sharing important announcements and updates. New information and resources will be posted regularly as we move through the term. To access the course website, go to the U of T Quercus log-in page at https://q.utoronto.ca. SPECIAL NOTE ABOUT GRADES POSTED ONLINE: Please also note that any grades posted are for your information only, so you can view and track your progress through the course. No grades are considered official, including any posted in Quercus at any point in the term, until they have been formally approved and posted on ACORN at the end of the course. Please contact me as soon as possible if you think there is an error in any grade posted on Quercus.