

CSC236H1 Y

Introduction to the Theory of Computation

Summer 2024 Syllabus

Course Meetings

CSC236H1 Y

Section	Day & Time	Delivery Mode & Location
LEC5101	Wednesday, 6:00 PM - 8:00 PM	In Person: BA 1130
TUT5101	Wednesday, 8:00 PM - 9:00 PM	In Person: BA 2159
TUT5102	Wednesday, 8:00 PM - 9:00 PM	In Person: BA 2139
TUT5103	Wednesday, 8:00 PM - 9:00 PM	In Person: BA 2135
TUT5104	Wednesday, 8:00 PM - 9:00 PM	In Person: BA B024

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

Course Contacts

Course Website: <https://q.utoronto.ca/courses/345743>

Instructor: Lily Li

Email: csc236-2024-05@teach.cs.toronto.edu

Office Hours and Location: Friday 1~3pm (BA 2272)

Additional Notes: Please allow 48 business hours for a response.

Course Overview

The application of logic and proof techniques to Computer Science. Mathematical induction; correctness proofs for iterative and recursive algorithms; recurrence equations and their solutions; introduction to automata and formal languages. This course assumes university-level experience with proof techniques and algorithmic complexity as provided by CSC165H1. Very strong students who already have this experience (e.g. successful completion of MAT157Y1) may consult the undergraduate office about proceeding directly into CSC236H1 or CSC240H1.

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Course Learning Outcomes

- Use simple, complete, and structural induction.
- Evaluate the correctness and style of mathematical proofs.
- Evaluate the correctness of algorithms.
- Describe the capabilities and limitations of finite automaton.

Prerequisites: (60% or higher in CSC148H1, 60% or higher in CSC165H1) / (60% or higher in CSC111H1)

Corequisites: None

Exclusions: CSC240H1, CSC236H5, CSCB36H3

Recommended Preparation: None

Credit Value: 0.5

Course Materials

Textbooks:

- [Primary] David Liu's CSC236 Lecture Notes and Vassos Hadzilacos' Introduction to the Theory of Computation.
- [Supplementary] John E. Hopcroft, Rajeev Motwani, and Jeffrey D. Ullman's *Introduction to Automata Theory, Languages, and Computation* 3rd ed.
- [Supplementary] Ronald L. Graham, Donald E. Knuth, and Oren Patashnik, *Concrete Mathematics: a foundation for computer science*.
- [Supplementary] Cristopher Moore and Stephan Mertens, *The Nature of Computation*.

Marking Scheme

Assessment	Percent	Details	Due Date
Quizzes	8%	11 total; one before every lecture (best 8). Worth 1% each.	2024-05-08,2024-05-15,2024-05-22,2024-05-29,2024-06-05,2024-06-12,2024-07-03,2024-07-10,2024-07-24,2024-07-31,2024-08-07
Assignments	32%	6 total (best 4). Worth 8% each.	2024-05-20,2024-06-03,2024-06-24,2024-07-08,2024-07-29,2024-08-07
Midterm 1	15%	This midterm will be held during the June exam period (exact time to be scheduled by the Faculty of Arts & Science).	2024-06-19,2024-06-20,2024-06-21,2024-06-22,2024-06-23,2024-06-24
Midterm 2	15%		2024-07-17

Assessment	Percent	Details	Due Date
In-Person Final Exam	30%		Final Exam Period

The final exam has a 40% autofail threshold. *You must earn at least 40% on the final in order to pass the course.*

Late Assessment Submissions Policy

For assignments: 10% penalty per day for up to three days.

Policies & Statements

Course Materials, including lecture notes

Lectures will be recorded. These materials should not be reposted, shared, put in the public domain, or otherwise distributed without the explicit permission of the instructor. These materials belong to your instructor, the University, and/or other sources depending on the specific facts of each situation and are protected by copyright. Students violating these policies will be subject to disciplinary actions under the Code of Student Conduct.

Assignment Submission Method

Assignments are to be submitted to Markus. They can be done in groups and the groups should be set-up *at least two days before* it is due.

Late/Missed Assignments

There is a 10% penalty every day up to three days for late submissions. Work will not be accepted afterwards because the solutions will be released.

Make-Up Quizzes/Tests

There *will not* be any make up midterms or assignments. However, if you have a legitimate absence for a midterm, you can get it reweighted to the final if you pass a 30 minutes ~ 1 hour oral exam with your instructor/TA (time TBD). Note that you should only take this option as a last resort because we will not hesitate to give you a zero if we do not feel that you have a solid grasp of the required material.

Re-marking Policy - Timeline and Protocol

Submit a remark request by filling out a remark request form. You have one week from the time the marks are released for an assignment or midterm to do so. Expect to get a response one to two weeks after that.

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>).

Specific Medical Circumstances

If you become ill and it affects your ability to do your academic work, consult me right away. Normally, I will ask you for documentation in support of your specific medical circumstances. This documentation can be an Absence Declaration (via ACORN) or the University's Verification of Student Illness or Injury (VOI) form. The VOI indicates the impact and severity of the illness, while protecting your privacy about the details of the nature of the illness. If you cannot submit a VOI due to limits on terms of use, you can submit a different form (like a letter from a doctor), as long as it is an original document, and it contains the same information as the VOI (including dates, academic impact, practitioner's signature, phone and registration number). For more information on the VOI, please see <http://www.illnessverification.utoronto.ca>. For information on Absence Declaration Tool for A&S students, please see <https://www.artsci.utoronto.ca/absence>. If you get a concussion, break your hand, or suffer some other acute injury, you should register with Accessibility Services as soon as possible.

Accommodation for Personal Reasons

There may be times when you are unable to complete course work on time due to non-medical reasons. If you have concerns, speak to me or to an advisor in your College Registrar's office; they can help you to decide if you want to request an extension or other forms of academic consideration. They may be able to email your instructors directly to provide a College Registrar's letter of support and connect you with other helpful resources on campus.

Mental Health and Well-being

As a student, you may experience challenges that can interfere with learning, such as strained relationships, increased anxiety, substance use, feeling down, difficulty concentrating and/or lack of motivation, financial concerns, family worries and so forth. These factors may affect your academic performance and/or reduce your ability to participate fully in daily activities. Everyone feels stressed now and then – it is a normal part of university life. Some days are better than others, and there is no wrong time to reach out. There are resources for every situation and every level of stress.

There are many helpful resources available through your College Registrar or through Student Life (<http://studentlife.utoronto.ca> and <http://www.studentlife.utoronto.ca/feeling-distressed>). An

important part of the University experience is learning how and when to ask for help. Please take the time to inform yourself of available resources.

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/departments/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.

Equity, Diversity and Inclusion

The University of Toronto is committed to equity, human rights and respect for diversity. All members of the learning environment in this course should strive to create an atmosphere of mutual respect where all members of our community can express themselves, engage with each other, and respect one another's differences. U of T does not condone discrimination or harassment against any persons or communities.