CIS*3150 – Theory of Computation [0.5 credits]
Course Outline – Fall 2023

Instructor: David Calvert
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Timetable
Lecture: Monday, Wednesday, Friday, 9:30-10:20, MCLN 102

Textbook: Introduction to the Theory of Computation
Michael Sipser, Cengage India, 3rd edition 2014.
ISBN-10 8131771865
ISBN-13 978-8131525296

Course Web Page: All course material will be posted to Courselink.

`https://courselink.uoguelph.ca`

Marking Scheme

Programming

- Assignments: 50%

Written

- Midterm Exam: 25%
- Final Exam: 25%

Notes:

- You must achieve a passing grade in each of the Written and Programming sections to pass the course. A failing total in either of the above two sections will result in a final grade in the course equal to that failing total. The highest grade you can achieve if you fail either section is 45%.
- There is no group work in this course. Any work which is the product of more than one person's efforts is grounds for academic misconduct. All submitted code will be checked for copying. All parties involved will be reported to the Director of SOCS as participants in academic misconduct. See Academic Misconduct in Section VIII of the Undergraduate Calendar. The penalties for academic misconduct are described in the University of Guelph Undergraduate Calendar.
- Code which is submitted and does not compile or execute will be given a mark of zero.
- Failure to submit assignments correctly will result in a substantial loss of marks.

- Remarking of assignments will occur in the advising times for the teaching assistant. Requests for remarking will be considered for only one week after the assignment has been returned.
- Assignments may be handed in up to two days after the due date listed on the assignment with no penalty. **No other extensions will be granted.**
- Classes missed due to holidays are made up in the last week of the semester.

Lecture Topics

1. Automata
2. Context Free Languages and Parsers
3. Turing Machines
4. Complexity Theory

Semester Schedule

- Assignment 1 due Friday, Sept. 29
- Midterm – Friday, Oct. 6 in class
- Assignment 2 due Friday, Oct. 20
- Assignment 3 due Friday, Nov. 3
- Assignment 4 due Friday, Nov. 24

Calendar Description

This course explores the theory of computation including automata theory, Turing machines and their variants, formal languages, parsing, the Halting problem, undecidability, and NP- completeness.
Prerequisite(s): CIS*2750, CIS*3490

E-mail Communication

As per university regulations, all students are required to check their ¡mail.uoguelph.ca¿ e-mail account regularly: e-mail is the official route of communication between the University and its students.

When You Cannot Meet a Course Requirement

When you find yourself unable to meet an in-course requirement because of illness or compassionate reasons, please advise the course instructor (or designated person, such as a teaching assistant) in writing, with your name, id number, and e-mail contact. See the undergraduate calendar for information on regulations and procedures for Academic Consideration.

Drop Date

Students will have until the last day of classes to drop courses without academic penalty. The regulations and procedures for course registration are available in their respective Academic Calendars.

Copies of out-of-class assignments

Keep paper and/or other reliable back-up copies of all out-of-class assignments: you may be asked to resubmit work at any time.

Accessibility

The University promotes the full participation of students who experience disabilities in their academic programs. To that end, the provision of academic accommodation is a shared responsibility between the University and the student.

When accommodations are needed, the student is required to first register with Student Accessibility Services (SAS). Documentation to substantiate the existence of a disability is required, however, interim accommodations may be possible while that process is underway.

Accommodations are available for both permanent and temporary disabilities. It should be noted that common illnesses such as a cold or the flu do not constitute a disability.

Use of the SAS Exam Centre requires students to book their exams at least 7 days in advance, and not later than the 40th Class Day. More information: www.uoguelph.ca/sas

Academic Misconduct

The University of Guelph is committed to upholding the highest standards of academic integrity and it is the responsibility of all members of the University community – faculty, staff, and students – to be aware of what constitutes academic misconduct and to do as much as possible to prevent academic offences from occurring. University of Guelph students have the responsibility of abiding by the University's policy on academic misconduct regardless of their location of study; faculty, staff and students have the responsibility of supporting an environment that discourages misconduct. Students need to remain aware that instructors have access to and the right to use electronic and other means of detection.

Please note: Whether or not a student intended to commit academic misconduct is not relevant for a finding of guilt. Hurried or careless submission of assignments does not excuse students from responsibility for verifying the academic integrity of their work before submitting it.

Students who are in any doubt as to whether an action on their part could be construed as an academic offence should consult with a faculty member or faculty advisor.

The Academic Misconduct Policy is detailed in the Undergraduate Calendar.

Recording of Materials

Presentations which are made in relation to course work—including lectures cannot be recorded or copied without the permission of the presenter, whether the instructor, a classmate or guest lecturer. Material recorded with permission is restricted to use for that course unless further permission is granted.

Resources

The Academic Calendars are the source of information about the University of Guelph's procedures, policies and regulations which apply to undergraduate, graduate and diploma programs.