

# COMP 3803

## Introduction to Theory of Computation

Fall 2024

**Instructor:** Michiel Smid

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**Course webpage:** <http://cglab.ca/~michiel/3803.html>

### Lectures:

- Wednesday and Friday, 11:35 - 12:55.
- Classroom: check on Carleton Central.
- All lectures will be in-person; they will not be video-recorded.
- A tentative schedule for each lecture will be posted once the course starts.

**Teaching assistants:** A list of teaching assistants and their contact/office hours information will be posted once the course starts.

**Office hours:** will be posted once the course starts.

### Course calendar description:

- Theoretical aspects of computer science. Topics include: formal languages and automata theory, computability theory.
- Prerequisite: COMP 2804.
- Precludes additional credit for COMP 2805 (no longer offered).
- Lectures three hours a week.

### List of topics:

- Formal languages and automata theory: regular languages, finite automata, context-free languages, pushdown automata.

- Computability theory: Turing machines, Church-Turing Thesis, decidability, Halting Problem.

**Textbook:** Introduction to Theory of Computation, by Anil Maheshwari and Michiel Smid. The book is freely available at

<https://cglab.ca/~michiel/TheoryOfComputation/>

### Grading scheme:

- 4 assignments: 25%
- midterm (in class and in-person): 25%
- final exam (in-person): 50%
- Due dates for assignments and dates for the midterm will be posted on the course webpage.

### Plagiarism and integrity:

- If you are unsure of the expectations regarding academic integrity (how to use and cite references, collaboration with classmates), then you must ASK your instructor. Sharing assignment or quiz specifications or posting them online (to sites like Chegg, CourseHero, OneClass, etc.) is ALWAYS considered academic misconduct. You are NEVER permitted to post, share, or upload course materials without explicit permission from your instructor. Academic integrity offences are reported to the office of the Dean of Science. Information, process and penalties for such offences can be found on the ODS webpage

<https://science.carleton.ca/students/academic-integrity/>

- Many of the assessed activities in this course were designed to be completed by an individual working alone. Unless it is explicitly stated otherwise, the use of any AI system will be considered academic misconduct. This includes, but is not limited to, chatbots or code generators (e.g., ChatGPT, Google Gemini, Microsoft Copilot), research assistants (e.g., Elicit), and image generators (e.g., Stable Diffusion, Dall-E).
- An exception to the above rule is made for automated grammar and punctuation checking tools (such as Grammarly).
- References to any material you use but did not originate must use the IEEE/APA/MLA citation style. Failure to reference materials correctly can result in severe penalties, and the use of manufactured (i.e., falsified) or misleading references will be treated as evidence of plagiarism and considered academic misconduct.

- Everything you submit for evaluation (i.e., assignments, quizzes, tutorials, examinations, etc.) must be the result of your own work and only your own work. If you copy more than five consecutive words or any non-trivial snippet of code from a single source without providing a valid reference, then that is considered plagiarism and an example of academic misconduct.

**Undergraduate academic advisors:** The Undergraduate Advisors for the School of Computer Science are available in Room 5302HP; or by email at

`scs.ug.advisor@cunet.carleton.ca`

The undergraduate advisors can assist with information about prerequisites and preclusions, course substitutions/equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisors will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and Writing Tutorial Services.

**University policies:**

- **Academic accommodations:** Carleton is committed to providing academic accessibility for all individuals. Please review the academic accommodation available to students here:

<https://students.carleton.ca/course-outline/>

- **Academic integrity:**

- **Student academic integrity policy:** Every student should be familiar with the Carleton University Student Academic Integrity policy. A student found in violation of academic integrity standards may be sanctioned with penalties which range from a reprimand to receiving a grade of F in the course, or even being suspended or expelled from the University. Examples of punishable offences include plagiarism and unauthorized collaboration. Any such reported offences will be reviewed by the office of the Dean of Science. More information on this policy may be found on the ODS Academic Integrity page

<https://science.carleton.ca/students/academic-integrity/>

- **Plagiarism:** As defined by Senate, plagiarism is presenting, whether intentional or not, the ideas, expression of ideas or work of others as one's own. Such reported offences will be reviewed by the office of the Dean of Science. More information and standard sanction guidelines can be found at

<https://science.carleton.ca/students/academic-integrity/>

Please note that content generated by an unauthorized A.I.-based tool *\*is\** considered plagiarized material.

- **Unauthorized collaboration:** Senate policy states that to ensure fairness and equity in assessment of term work, students shall not co-operate or collaborate in the completion of an academic assignment, in whole or in part, when the instructor has indicated that the assignment is to be completed on an individual basis.