COMP 3804 B - Fall 2025
Design and Analysis of Algorithms I

People

Instructor	Darryl Hill	HP5167	Office Hours: TBD
TA's	https://brightspace.carleton.ca	TBD	Office Hours: TBD

Course Information

Class Time 3804B	Tuesday & Thursday 11:35 - 12:55
Class Location	Please see Carleton Central
Course Website	https://brightspace.carleton.ca

The delivery of material will consist of the following:

- **Lectures** will be given **live** and **in class**, but also recorded and posted to Brightspace.
- **Tutorial Sessions** are weekly workshops where you may work on class work and get TA assistance. This is also where you will write your tests.
- **Assignments** are to be used as study tools. Solutions will be given, but there are no assignment marks.
- **Tests** will be held during the tutorial session on the dates indicated in the calendar (attached and available on Brightspace). The test content will be based on the assignments.
- **TA office hours** will be posted on **Brightspace** once finalized.
- In addition to office hours, questions pertaining to lectures, quizzes, and general course material can be asked / answered on **Brightspace**.
- The **final exam** will an **in-person exam** scheduled by registrar.

Course Description

An introduction to the design and analysis of algorithms. Topics include: divide-and-conquer, dynamic programming, linear programming, greedy algorithms, graph algorithms, NP-completeness.

Prerequisites

COMP 2402 and one of (COMP 2804 or MATH 3855 or MATH 3825 or COMP 3805). For all course prerequisites, see the course calendar here:
calendar.carleton.ca/undergrad/

Reference Textbook

- Handwritten lecture notes.
- Algorithms, by Sanjoy Dasgupta, Christos Papadimitriou, and Umesh Vazirani.
- Students are not required to purchase textbooks or other learning materials for this course.

SCS Laptop Requirement

Every student that has been enrolled in a 1000-level (i.e., first year) course offered by the School of Computer Science after the 2020/2021 school year is required to have a laptop. This includes COMP1001, COMP1005, and COMP1006. For more information, please visit
https://carleton.ca/scs/scs-laptop-requirement/
and then review the requirements at
https://carleton.ca/scs/scs-laptop-requirement/laptop-specs/.

Evaluation

Final grades will be determined using the scheme described below, and no extra credit assignments will be provided under any circumstances.
See the **Calendar** attached and posted to Brightspace for the test dates.

Tests (4)	15% each	60%
Final Examination (1)		40%
Total		100%

Late and Missed Work Policies

If you miss a test for any reason, the weight of that test will be moved to the final exam. You may miss at most one test. Subsequent missed tests will receive a mark of 0.

It is **your responsibility** to ensure that your quiz, tutorial, and assignment marks posted to Brightspace are correct within one week of the date the marks were released. Concerns or complaints about grading must be communicated (first to the teaching assistant, then, if the result is unsatisfactory, to the instructor) within that time. After one week, all marks are considered final and will not be changed under any circumstances.

Collaboration Policy

★ There is absolutely no collaborating allowed for the tests.

Collaboration on assignments is encouraged.

Academic Integrity

Assignments are for learning, not for marks. You may use any resource that helps you learn for an assignment.

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/

If you are unsure of the expectations regarding academic integrity, then you must ASK your instructor.

Additional Notes

In addition to the time spent attending lectures, students can expect to spend **between nine and twelve (9-12) hours per week** on this course. Students are responsible for all course materials, including lecture notes, and all materials discussed in class and on any of the official discussion boards.

Students are asked to pose all questions related to course content using **the official discussion boards on Brightspace**; students should not email the instructor directly unless the question contains **confidential information** or is of a personal nature.

The instructor will attempt to answer every student email received **within three business days** of the time the message was received, unless the email requests information already posted on Brightspace or in the course outline. To ensure that all announcements are received, students are expected to check their email on a daily basis.

All materials created for this course (including, but not limited to, lecture notes, in-class examples, assignments, examinations, and posted solutions) **remain the intellectual property of the instructor**. These materials are intended for the personal and non-transferable use of students registered in the current offering of the course. **Reposting, reproducing, or redistributing any course materials**, in part or in whole, without the written consent of the instructor, **is strictly prohibited**.

SCS Computer Laboratory

SCS students can access one of the designated labs for your course. The lab schedule can be found at: https://carleton.ca/scs/tech-support/computer-laboratories. All SCS computer lab and technical support information can be found at: https://carleton.ca/scs/technical-support. Technical support is available in room HP5161 Monday to Friday from 9:00 until 17:00 or by emailing SCS.Tech.Support@cunet.carleton.ca.

Undergraduate Academic Advisor

The Undergraduate Advisor for the School of Computer Science is available in Room 5302C HP, by telephone at 520-2600, ext. 4364 or by email at **scs.ug.advisor@carleton.ca**.

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

University Policies

Full academic regulations are found in the University's calendar (http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/ Some excerpts are below.

Requests for Academic Accommodation
You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

Academic Accommodations for Students with Disabilities
If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. Visit the PMC website: http://carleton.ca/pmc

Religious Obligations
Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit https://carleton.ca/equity/focus/discrimination-harassment/religious-spiritual-observances/
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Pregnancy Obligation
Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: http://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf

Survivors of Sexual Violence
As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and is survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: http://carleton.ca/sexual-violence-support

For more information on academic accommodation, please contact the departmental administrator

or visit: http://students.carleton.ca/course-outline

SEP-OCT
2025

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
31	September 1	2	3	COMP3804B 4 11:35-12:55 pm 1-Introduction	5	6
7	8	COMP3804B 9 11:35-12:55 pm 2-Divide and Conquer	10	COMP3804B 11 11:35-12:55 pm 3-Master Theorem	12 Tutorial 1 4:05-5:25pm	13
14	15	COMP3804B 16 11:35-12:55 pm 4-Selection and Median	17	COMP3804B 18 11:35-12:55 pm 5-Randomized Selection	19 Tutorial 2 4:05-5:25pm	20
21	22	COMP3804B 23 11:35-12:55 pm 6-Heaps	24	COMP3804B 25 11:35-12:55 pm 7-Graphs	26 Tutorial 3 4:05-5:25pm Test 1	27
28	29	COMP3804B 30 11:35-12:55 pm 8-Graphs II	October 1	COMP3804B 2 11:35-12:55 pm 9-Graphs III	3 Tutorial 4 4:05-5:25pm	4

Oct-Nov
2025

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
5	6	COMP3804B 7 11:35-12:55 pm 10-DAGS	8	COMP3804B 9 11:35-12:55 pm 11-DAGS II	10 Tutorial 5 4:05-5:25pm	11
12	Thanksgiving Statutory Holiday 13 Enjoy	COMP3804B 14 11:35-12:55 pm 12-DAGS III	15	COMP3804B 16 11:35-12:55 pm 13-Shortest Paths	17 Tutorial 6 4:05-5:25pm Test 2	18
19	Reading Week Statutory Holiday 20 Enjoy	Reading Week Statutory Holiday 21 Enjoy	Reading Week Statutory Holiday 22 Enjoy	Reading Week Statutory Holiday 23 Enjoy	Reading Week Statutory Holiday 24 Enjoy	25
26	27	COMP3804B 28 11:35-12:55 pm 14-Union Find	29	COMP3804B 30 11:35-12:55 pm 15-MSTs	31 Tutorial 7 4:05-5:25pm	November 1
2	3	COMP3804B 4 11:35-12:55 pm 16-Dynamic Programming	5	COMP3804B 6 11:35-12:55 pm 17-Matrix Multiplication	7 Tutorial 8 4:05-5:25pm	8

Nov-Dec
2025

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
9	10	COMP3804B 11 11:35-12:55 pm 18-Longest Common Subsequence	12	COMP3804B 13 11:35-12:55 pm 19-APSP	14 Tutorial 9 4:05-5:25pm Test 3	15
16	17	COMP3804B 18 11:35-12:55 pm 20-P vs NP	19	COMP3804B 20 11:35-12:55 pm 21-Reductions	21 Tutorial 10 4:05-5:25pm	22
23	24	COMP3804B 25 11:35-12:55 pm 22-More Reductions	26	COMP3804B 27 11:35-12:55 pm 23-Circuit SAT is NP-Complete	28 Tutorial 11 4:05-5:25pm Test 4	29
30	December 1	COMP3804B 2 11:35-12:55 pm 24-Zero Knowledge Proofs	3	COMP3804B 4 11:35-12:55 pm 25-Exam Review	Monday schedule 5	6
7	8	9	10	11	12	13