

Course Outline

Course Information

Instructor	Alina Shaikh
Contact	Alina.Shaikh@carleton.ca
Classroom	Zoom (link will be available on cuLearn)
Class Times	Wednesday and Friday 11:35 am – 12:55 pm
Course Website	https://www.carleton.ca/culearn/

Course Delivery

This course will be delivered using a blended approach. Scheduled lectures on Wednesdays/Fridays will be synchronous (live) via Zoom. You are expected to attend the live lectures. The lectures will also be recorded and shared online. The instructor and TAs will be available via Discord (or Google Meet) during scheduled hours to answer questions and clarify topics. Students will be required to use an alias that includes their first and last name, as listed on cuLearn, in the course Discord and in any other course meetings or activities (Zoom, Google Meet, ...).

Course Description

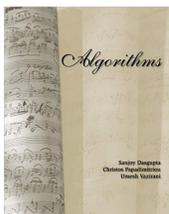
This course is an introduction to the design and analysis of algorithms. Topics include:

- Basics of Algorithm Analysis,
- Algorithm Design Techniques (Greedy Algorithms, Divide-and-Conquer, Dynamic Programming),
- Graphs and Graph Algorithms,
- Linear Programming,
- NP-Completeness.

Prerequisite(s):

One of COMP 2402 or SYSC 2100, and either COMP 2804 or both of MATH 2007 and MATH 2108 or equivalents.

Recommended Reference Textbooks



Title	Algorithms
Authors	S. Dasgupta, C. Papadimitriou, U. Vazirani
Publisher	McGraw-Hill Education
ISBN	0073523402

All of the concepts taught in the class will also have many freely available online references.

Evaluation

25%	Four assignments (electronic submission via cuLearn)
25%	in-class test. Date: March 3, 2021
50%	Final Exam (scheduled by the university)

Assignments: Each assignment must be submitted as one single PDF file through [cuLearn](#). Late assignments will not be accepted.

Grades: Marks will be posted on [cuLearn](#).

Midterm: The test will take place on March 3, 2021 during our regular class time (11:35 am – 12:55 pm). There will be no make-up tests. Only in very exceptional circumstances the weight of the test will be shifted towards the final exam.

Collaboration Policy

There is absolutely no collaborating allowed for the tests and final exam.

Collaboration on assignments is acceptable but only at the level of discussion. When writing down the solutions, please write them down on your own. If you need help, please see a TA or your instructor.

Posting assignment solutions on discussion boards before the due date and time is also prohibited.

Academic Integrity (New, Please Read)

As of 2020, there are new penalties in place for academic integrity violations. These will be issued by the Associate Dean (Undergraduate Affairs) of Science to students who copy, in whole or in part, work they submit for assignments.

- First offence, first-year students (< 4.0 credits completed): No credit for assessment(s) in question, or a final grade reduction of one full letter grade (e.g., $A-$ becomes $B-$), whichever is a greater reduction.
- First offence (anyone else): A grade of F in the course.
- Second offence (anyone): A grade of F in the course and a one-term suspension from studies.

- Third offence: Expulsion from the University.

Note: While these are the standard penalties, more severe penalties may be applied when warranted. For more information, go to <https://science.carleton.ca/academic-integrity/>

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 undergraduate_advisor@scs.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

For information about Carleton's academic year, including registration and withdrawal dates, see [Carleton's Academic Calendar](#).

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

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](#).

Religious 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](#).

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. For more details, visit the [Paul Menton Centre](#) website.

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 where 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: carleton.ca/sexual-violence-support

Accommodation for Student Activities

Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must be provided to students who compete or perform at the national or international level. 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, see the [policy](#).

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 awarded penalties which range from a reprimand to receiving a grade of F in the course or even being expelled from the program or University. Examples of punishable offences include: plagiarism and unauthorized co-operation or collaboration. Information on this policy may be found [here](#).

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.

Unauthorized Co-operation or 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". Please refer to the course outline statement or the instructor concerning this issue.