

4900E APPROXIMATION ALGORITHMS
Term Fall 2026

Course Instructor: Svetlana Obraztsova Email: svetlana.obraztsova.teaching@gmail.com Office Hours: will be decided by voting in class How to address me: Lana Best ways to contact: in class or during office hours	Office Location: Room HP5376 Class Location: Check Carleton Central Lecture times: 13 weeks, 2 times per week Tutorial times: None Course website: See Brightspace
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Important dates and deadlines can be found here: Dates, Deadlines, and Regulations—Registrar's Office, including class suspension for fall, winter breaks, and statutory holidays.

1 Topics Covered

Week	Topic/content
10, 15, 17 Sept	Basic combinatorial optimization problems and definitions. Set cover problem.
22, 24 Sept	Crash course in graph theory. Online quiz 1.
29 Sept, 1 Oct	Travelling salesman problem, minimum spanning tree problem. In class quiz 1.
6,8 Oct	Knapsack problem.
13, 15 Oct	Bin packing problem. In class test 1.
20, 22 Oct	Crash course in Linear Programming. Online quiz 2.
3, 5 Nov	Introduction to LP Duality. In class quiz 2.
10, 12 Nov	Dual fitting.
17, 19 Nov	Dual fitting. In class test 2.
24, 26 Nov	Rounding. In class quiz 3.
1, 3 Dec	Scheduling on unrelated parallel machines. Online quiz 2.
8, 10 Dec	Q&A. In class test 3.

Important dates and deadlines can be found here: [link](#), including class suspension for fall, winter breaks, and statutory holidays.

Assessments

Grade Breakdown

COMPONENT	GRADE VALUE	DATE
Online quizzes	24%	Deadlines: 2 Oct, 6 Nov, 10 Dec
In class quizzes	46%	1 Oct, 5 Nov, 26 Nov
In class tests	30%	15 Oct, 19 Nov, 8 Dec

2 best out of 3 in class tests will contribute 15% into final grade each, 2 best out of 3 in class quizzes will contribute into final grade 23%. All 3 online quizzes will contribute into final grade.

In class tests and quizzes will be full length (70 min) and closed books. Online quizzes will be published 1 week before deadline.

In class tests and quizzes will be available for reviewing during office hours.

During in class quizzes and test I will follow the School policy: All quizzes, tests and exams are expected to be completed individually, and without electronic aid; any communication or access of electronic devices (e.g. cellphones) during the test will be considered cheating. Use of Smart Glasses (or other similar assistive technologies) before or during a test is strictly prohibited and is considered an academic integrity violation. Even if you have prescription glasses with assistive technologies, you will not be allowed to use them during the test, so please make sure that you have acceptable prescription glasses. The proctor has the right to ask to inspect your glasses before or during the test. In addition, unless authorized with PMC accommodations, you are NOT allowed to use headphones nor ear buds during a test. Also, during a test, if you choose to wear a baseball cap, sunglasses or anything else that would prevent a proctor from monitoring where your eyes are focused during the test, you will likely be asked by a proctor to move to a different seat. Lastly, you must submit your test before leaving the classroom or it won't be graded.

Late and Missed Work Policies

Due to "2 best out of 3" policy no make up in class quizzes or tests will be available. No deadline extensions will be granted for online quizzes.

Learning Materials and other Course/Lab Resources

Learning Materials	Options for Purchasing	Approximate Costs
Vijay V. Vazirani "Approximation Algorithms"	Available online for free	0

Students are not required to purchase textbooks or other learning materials for this course.

Academic Accommodations and Regulations

Carleton is committed to providing academic accessibility for all individuals. You may need special arrangements to meet your academic obligations during the term. The accommodation request processes are outlined on the Academic Accommodations website (<https://students.carleton.ca/course-outline/>).

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.

Statement on Academic Integrity

Misconduct in scholarly activity will not be tolerated and will result in consequences as outlined in Carleton University's Academic Integrity Policy (see here). A list of standard sanctions in the Faculty of Science can be found here. Additional details about this process can be found on the Faculty of Science Academic Integrity website. Students are expected to familiarize themselves with and abide by Carleton University's Academic Integrity Policy.

Student Rights and Responsibilities

Students are expected to act responsibly and engage respectfully with other students and members of the Carleton and the broader community. See the 7 Rights and Responsibilities Policy for details regarding the expectations of non-academic behaviour of students. Those who participate with another student in the commission of an infraction of this Policy will also be held liable for their actions.