COMP5900D/4900E Approximation Algorithms

Instructor: Svetlana Obraztsova

Email: Svetlana.obraztsova.teaching@gmail.com

Office Location: HP5376

Best Way to be in Touch: during office hours

Teaching Assistant: None

Class Location: Please check Carleton Central for the room location.

Lecture Times: 12 weeks, 2 lectures per week

Tutorial Times: No tutorials

Course Website: See Brightspace

Brightspace access for University of Ottawa Students; please see information here: https://gradstudents.carleton.ca/faculty-of-graduate-and-postdoctoral-affairs-access-to-brightspace/

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.

Learning Material(s) and Other Course/Lab-Related Resources

Learning Material	Options for Purchasing *(e.g., Bookstore, Used, etc.)*	Approximate Cost
Vijay V. Vazirani "Approximation Algorithms"	Available online for free	0

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

Topics Covered and Learning Outcomes
Inclusive Teaching Statement (Examples can be found in the EDI Course Outline Template, which can be accessed through Section 1 of the EDI Teaching Toolkit)

Detailed list of topics to be covered, including dates and required reading for each week.

Week	Topic/Content	Readings/Prep for Class
1	Basic combinatorial optimization problems and definitions.	None
2	Set cover problem.	None

3	Crash course in graph theory. Assignment 1	None
4	Test 1. Travelling salesman problem, minimum spanning tree problem	None
5	Knapsack problem.	None
6	Bin packing problem. Quiz 1.	None
7	Test 2. Crash course in Linear Algebra.	None
8	Introduction to LP Duality. Assignment 2.	None
9	Dual fitting. Quiz 2.	None
10	Dual fitting. Test 3.	None
11	Rounding. Assignment 3.	None
12	Scheduling on unrelated parallel machines. Quiz 3.	None
13	Q&A	

Learning outcomes are statements that describe the knowledge, skills and attitudes students are expected to develop in your course. For each class you teach, you will want to come up with 3-4 learning outcomes that summarize the overarching expectations of that lesson.
More information [here](#).

Assessment Scheme
Grade Breakdown

COMPONENT	GRADE VALUE	DATE
Quizzes	20%	10 Oct, 7 Nov, 28 Nov
Assignment 1	12%	19 Sept
Assignment 2	12%	31 Oct
Assignment 3	12%	21 Nov
Tests	44%	26 Sept, 17 Oct, 14 Nov

2 best out of 3 tests will contribute 22% into final grade each, 2 best out of 3 quizzes will contribute into final grade.

Quizzes will be short (~30 min), in class, closed books.
Tests will be full length (~80 min), in class, closed books.
Assignment will be published ~ 1 week before submission deadline, should be submitted via Brightspace in pdf.

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.

Graduate Academic Advisors

The Graduate Advisors for the School of Computer Science are available in Room 5302 HP; or by email at grad.scs@carleton.ca. The graduate advisors can assist with understanding your academic audit and the remaining courses required to meet graduation requirements.

SCS Computer Laboratory

Students taking a COMP course can access the SCS computer labs. The lab schedule and location 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/tech-support/. Technical support staff may be contacted in-person or virtually, see this page for details: https://carleton.ca/scs/tech-support/contact-it-support/.

Academic Accommodations and Regulations

Academic Accommodation

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/).

Chat GPT/Generative AI Usage

Do not use Chat GPT/Generative AI to solve assignments.

Academic Integrity

Students are expected to uphold the values of academic Integrity, which include fairness, honesty, trust, and responsibility. Examples of actions that compromise these values include but are not limited to plagiarism, accessing unauthorized sites for assignments or tests, unauthorized collaboration on assignments or exams, and using artificial intelligence tools such as ChatGPT when your assessment instructions say it is not permitted.

Misconduct in scholarly activity will not be tolerated and will result in consequences as outlined in Carleton University's Academic Integrity Policy. 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 & 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.

Student Concerns

If you have any concerns regarding this course, your first point of contact is me. Please visit during my student hours, and I will do my best to address your concerns. If I cannot resolve the issue, the next point of contact is the School of Computer Science at studentconcerns@scs.carleton.ca. If the concern remains unresolved, the final point of contact is the Office of the Dean of Science at ODScience@carleton.ca. Please follow this order of contact.

Note: You can also bring your concerns to Ombuds services.