Recent Announcements

Welcome to CSC263
(https://q.utoronto.ca/courses/250296/discussion_topics/1551304)
Welcome to 263! As you know, in-person classes at the University of Toronto are d…

Posted on:
Jan 7, 2022 at 5:12pm

CSC263H1 S 20221 (All Sections): Data Structures and Analysis

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Getting Started

Welcome to CSC263H! Please start by reading the entire syllabus (this page) and then checking the course Modules (use the link on the left). The material posted on Quercus is required reading. You are responsible for all announcements made in lecture and on Quercus.

For general course-related questions, please use Piazza or visit us during **office hours**.

To contact the course instructors regarding personal issues related to csc263, please send email from your U of T email address to **csc263-2022-01@cs.toronto.edu** (mailto:csc263-2022-01@cs.toronto.edu)

Do not use Quercus messaging for anything related to CSC263.

Instructors, Contact Hours, and Communication

Section	LEC0101	LEC0201	LEC0301	LEC5101

Time	TR 1-2 **+ Friday**	TR 3-5 **+ Friday**	TR 4-5 **+ Friday**	R 6-8 **+ Friday**
Instructor	Michelle Craig	Michelle Craig	Michelle Craig	Samar Sabie
Room (Tues & Thurs)	MS 2170	BA 1130	BA 1130	BA 1160
Zoom Link (Tues & Thurs)	**0101 Zoom Link (https://utoronto.zoom.us /s/84751447682)** Passcode: 26312	**0201 Zoom Link (https://utoronto.zoom.us /s/81356020057)** Passcode: 26334	**0301 Zoom Link (https://utoronto.zoom.us /j/81242494787)** Passcode: 26345	**5101 Zoom Link (https://utoronto.zoom.us /j/83372392020)** Passcode: 26368

For electronic communication, please use email from your UofT email address for personal issues and the Piazza discussion forum to ask general course-related questions. For email, include your full name and your UTORID. As the course coordinator, Michelle and her instructional support staff deal with all administrative issues (ex. missed work, problems with your grades, the course website).

Lectures

CSC263 is scheduled as in in-person course with three contact hours per week. When you signed up on ACORN, you enrolled in a lecture section LEC and a tutorial section TUT. Because of changes to accommodate online learning, **all of these meeting times are lectures given by an instructor**. You are expected to attend your assigned Tuesday/Thursday section and one of the two Friday lectures. You may attend the Friday section in which you are enrolled on ACORN or you may choose to attend the other time.

Time	Fridays 10-11	Fridays 11-12
Instructor	Michelle Craig	Samar Sabie
Zoom Link	**Friday 10 am Zoom Link** (https://utoronto.zoom.us /j/82645685108) Passcode: 26310	**Friday 11am Zoom Link** (https://zoom.us /j/95959856903?pwd=eGFMd3hNOWIHS0hDWnV0eis5Yi9ZZz09) Passcode: 26311

Once the university re-opens for in-person learning, Tuesday and Thursday lectures will be held in person in the rooms listed above. Lectures on Fridays (on the non-test weeks) will continue to be online all term. If the university re-opens for in-person learning, tests will be in person. While the university remains closed to in-person classes, all lectures will be held online using Zoom. As a University of Toronto student, you have access to a free Zoom account, register here: **https://utoronto.zoom.us** **(https://utoronto.zoom.us/)** If you are attending a synchronous lecture, you must be logged in using your utoronto Zoom account to join the session. .

Please make sure you have reviewed **these guidelines for participating in our online course.**

Learning Outcomes

By the end of this course, students will be familiar with a variety of standard, complex data structures and abstract data types (graphs, dictionaries, balanced search trees, hash tables, heaps, disjoint sets), and with standard complexity measures (worst-case, average-case, amortized). More specifically, students will be able to:

- recognize algorithms that employ each data structure,
- write algorithms that employ each data structure,
- recognize when each complexity measure is most appropriate,
- analyze the efficiency of algorithms using each complexity measure
- choose and/or modify data structures appropriately to solve various problems.

Marking Scheme Summary

Weekly Quercus Modules (11)	11%	Each worth 1%.	Completed Individually
Problem Sets (3)	32%	PS1 (10%), PS2 (10%), PS3 (12%)	Completed Individually or with one partner
Term Tests (2)	27%	Test 1 (12%), Test 2 (15%)	Completed Individually
Final Exam	30%	Students must earn at last 40% on the final exam to pass the course.	Completed Individually

Please make sure you have reviewed the **Course Policies for Technical Issues** for CSC263.

Quercus Modules

Starting in Week 2, you will complete a weekly Quercus Module worth 1%, due by noon every Tuesday. These modules must be completed **individually** (without partners), and will have components marked for correctness. You may submit answers as many times as you wish (up to the deadline), but **only your last on-time submission will be marked**. Each Module will consist of a combination of the following elements.

- **Demonstrate**: Quiz questions that give the opportunity to demonstrate and exercise the main concepts from the previous week's lectures and tutorial.
- **Discover**: Readings or links to a video or simulation where new material is introduced. CSC263H1 is not completely "flipped", unlike courses like CSC108H1 and CSC209H1. However, some of the easier concepts will be taught through Discover components. You must complete these components before the following lectures. This allows the lectures to go further by building on the content of the Discover modules, instead of having to "waste" lecture time going over the easiest concepts. Each Discover component will usually be paired with a Describe component.

- **Describe**: Short quiz questions about new material from an associated Discover component. If you find that you cannot answer these questions, you should go back and redo the Discover activity more carefully, before trying the Describe quiz again. You may also find it helpful to consult the relevant chapters in the course textbook, for additional explanations and examples.
- **Review**: Short quizzes that mostly test prerequisite material (concepts that you are expected to know from previous courses). If you are not confident about your answers to a review quiz, please take the time to review the corresponding material from your prerequisite courses and then retake the quiz (before its deadline, of course).

*Please aim to complete the Quercus Modules **well before** their submission deadline (noon on Tuesdays):* **late submissions will NOT be accepted under any circumstance**. Each module will be available well before it is due, so you have plenty of time to attempt it before Tuesday and to work around any technical difficulties you may encounter. If you face an unexpected personal emergency that makes you incapable of doing any coursework *for multiple days before the due date,* please request special consideration.

Problem Sets

Problem set 1 will be due on Monday February 7. Problem set 2 will be due on Monday March 7th. And Problem set 3 will be due on Wednesday March 30th. All problem sets are due at 4pm. They will be submitted electronically, using MarkUs. For all problem sets, your submission must be fully typed and we will accept only PDF files. You may use any software you wish to typeset your problem sets. We will be offering special office hours on using Latex for those students who are unfamiliar with this software and would like to take this opportunity to learn it.

Students will have the opportunity to complete each problem set as an individual or to work with one partner. If you are working in a group for a problem set, it is your responsibility to declare this group on MarkUs well before the due date. If you are creating a group for the first time or you have not used MarkUs before, please consult the following **Documentation for Students** **(https://github.com /MarkUsProject/Markus/wiki/Student-Guide#how-to-form-group)** on MarkUs. Note that only one partner should create the group, and invite the other partner by using their UTORid. You can also ask questions on Piazza.

Problem Sets: Late Penalty

We recognize that unexpected problems sometimes make it difficult to submit assignments on time. For this reason, we will accept limited late problem sets with a penalty. There is a one hour grace period after the problem set is due in which no late penalty is

applied. For the next five hours after the deadline, the deduction will be 5% (of the total possible mark) per hour. For the next five hours, the additional deduction will be 15% per hour. Here it is broken down by hour.

CSC263 problem set late penalty policy

On time or early	no penalty
less than 1 hour late	no penalty
less than 2 hours late	5% penalty
less than 3 hours late	10% penalty
less than 4 hours late	15% penalty
less than 5 hours late	20% penalty
less than 6 hours late	25% penalty
less than 7 hours late	40% penalty
less than 8 hours late	55% penalty
less than 9 hours late	70% penalty
less than 10 hours late	85% penalty
10 hours late or later	100% penalty

Refer to the Special Consideration section below for what to do in case of serious emergencies.

Tests and Final Exam

Term tests will take place on Friday February 18 and Friday March 18 during the tutorial slot. The final exam will be scheduled by Arts and Science. If we have returned to in-person learning in time for a test or exam, then **the assessment will be in person**. More details will be provided when the tests approach.

Reporting a Marking Error

If you believe there was an error in the marking of an assignment, you may report that error in MarkUs. Only error reports submitted

within the time frame indicated on MarkUs will be accepted - this is typically within two weeks of when feedback for the assessment was returned. Please note that when we receive an error report, we regrade the entire submission, not just a specific question. Your mark may go up or down as a result.

Academic Integrity

All of the work you submit must be done by you (or your problem-set partner), and your work must not be submitted by someone else. Plagiarism is academic fraud and is taken very seriously. Please read the Rules and Regulations from the U of T Governing Council (especially the Code of Behaviour on Academic Matters): **http://www.governingcouncil.utoronto.ca/policies/behaveac.htm (http://www.governingcouncil.utoronto.ca/policies/behaveac.htm)**

Please also see the information for students from the Office of Student Academic Integrity: **https://www.artsci.utoronto.ca/current /academic-advising-and-support/student-academic-integrity (https://www.artsci.utoronto.ca/current/academic-advising-and-support /student-academic-integrity)**

Accessibility Needs

The University of Toronto is committed to accessibility. If you require accommodations or have any accessibility concerns, please visit **http://www.accessibility.utoronto.ca (http://www.accessibility.utoronto.ca/)** as soon as possible.

Students who require accommodations for online tests need to register with Test & Exam Services. We will only be providing test accommodations sent to us through that official channel.

Special Consideration

Students experiencing illness or other emergencies that prevent them from being able to complete homework on time, or write tests, can apply to the instructors for special consideration. You will be required to affirm that you are abiding by the **Code of Behaviour on Academic Matters (http://www.governingcouncil.utoronto.ca/policies/behaveac.htm)**, in particular that it is an offence

> *to engage in any form of cheating, academic dishonesty or misconduct, fraud or misrepresentation not herein otherwise described, in order to obtain academic credit or other academic advantage of any kind*

That is, that you are truly experiencing an emergency, and acknowledge that to falsely claim so is an academic offence. Applying does not guarantee that you will be granted special consideration.

To apply for special consideration in CSC263, complete the **Special Consideration Request Form** ⤓ **(https://q.utoronto.ca/courses /250296/files/18485052/download?download_frd=1)** and email it to the course account (**csc263-2022-01@cs.toronto.edu (mailto:csc263-2022-01@cs.toronto.edu)**) *from your UofT email address*. You will receive an email response to your request within 1-2 business days.

IMPORTANT: *Submit your request soon as possible if you find yourself in such a situation. It is easier to resolve situations earlier rather than later.* If your emergency will affect your ability to complete coursework for more than a few days, or in multiple courses, we recommend you also talk to your registrar. You should also complete the absence declaration form on ACORN.

Video Recording and Sharing policy

This course, including your participation, will be recorded on video and will be available to students in the course for viewing remotely and after each session. Course videos and materials belong to your instructor, the University, and/or other source depending on the specific facts of each situation, and are protected by copyright. In this course, you are permitted to download session videos and materials for your own academic use, but you should not copy, share, or use them for any other purpose without the explicit permission of the instructor. For questions about recording and use of videos in which you appear please contact your instructor.

Textbook

The textbook, **Cormen, Lieserson, Rivest & Stein: Introduction to Algorithms**, *3rd edition* **(https://mitpress.mit.edu/books /introduction-algorithms-third-edition)** is available online from the **University of Toronto library** **(https://search.library.utoronto.ca /details?8858586)** .

Course Summary:

Date	Details	Due

Date	Details	Due
Thu Sep 30, 2021	📝 **Demonstrate: Binary Search Trees** **(https://q.utoronto.ca/courses/250296/assignments /795684)**	due by 5pm
	📝 **Describe: AVL Trees** **(https://q.utoronto.ca /courses/250296/assignments/795687)**	due by 5pm
	📝 **Review: Problem Set 1 Handout** **(https://q.utoronto.ca/courses/250296/assignments /795688)**	due by 5pm
Thu Oct 7, 2021	📝 **Demonstrate: AVL Trees** **(https://q.utoronto.ca/courses/250296/assignments /795689)**	due by 5pm
	📝 **Describe: Hashing** **(https://q.utoronto.ca /courses/250296/assignments/795691)**	due by 5pm
Thu Oct 14, 2021	📝 **Demonstrate: Augmentation** **(https://q.utoronto.ca/courses/250296/assignments /795692)**	due by 5pm
	📝 **Describe: Quicksort** **(https://q.utoronto.ca /courses/250296/assignments/795693)**	due by 5pm
Thu Oct 21, 2021	📝 **Describe: Dynamic Arrays** **(https://q.utoronto.ca/courses/250296/assignments /795696)**	due by 5pm

Date	Details	Due
Fri Oct 22, 2021	📝 **Demonstrate: Hashing** **(https://q.utoronto.ca /courses/250296/assignments/795694)**	due by 5pm
Thu Oct 28, 2021	📝 **Demonstrate: Amortized Analysis (https://q.utoronto.ca/courses/250296/assignments /795699)**	due by 5pm
	📝 **Demonstrate: Randomized Quicksort (https://q.utoronto.ca/courses/250296/assignments /795695)**	due by 5pm
	📝 **Describe: Graphs (https://q.utoronto.ca /courses/250296/assignments/795700)**	due by 5pm
Thu Nov 4, 2021	📝 **Demonstrate: Graph Representations and BFS (https://q.utoronto.ca/courses/250296 /assignments/795701)**	due by 5pm
Thu Nov 18, 2021	📝 **Demonstrate: Depth First Search (https://q.utoronto.ca/courses/250296/assignments /795702)**	due by 5pm
	📝 **Describe: Spanning Trees (https://q.utoronto.ca/courses/250296/assignments /795703)**	due by 5pm
Thu Nov 25, 2021	📝 **Demonstrate: Minimum Spanning Trees (https://q.utoronto.ca/courses/250296/assignments /795705)**	due by 5pm

Date	Details	Due
	📝 **Demonstrate: Strongly Connected Components** (https://q.utoronto.ca/courses /250296/assignments/795704)	due by 5pm
	📝 **Describe: Disjoint Set ADT** (https://q.utoronto.ca/courses/250296/assignments /795707)	due by 5pm
Thu Dec 2, 2021	📝 **Demonstrate: Disjoint Sets** (https://q.utoronto.ca/courses/250296/assignments /795752)	due by 5pm
	📝 **Describe: Comparison Trees** (https://q.utoronto.ca/courses/250296/assignments /795759)	due by 5pm
Tue Jan 18, 2022	📝 **Demonstrate: Week 1 Concepts and Reading the Syllabus** (https://q.utoronto.ca /courses/250296/assignments/795608)	due by 12pm
	📝 **Describe: Priority Queue ADT** (https://q.utoronto.ca/courses/250296/assignments /795614)	due by 12pm
	📝 **Review: Binary Trees** (https://q.utoronto.ca /courses/250296/assignments/795616)	due by 12pm
Tue Jan 25, 2022	📝 **Demonstrate: Heap Operations** (https://q.utoronto.ca/courses/250296/assignments /795673)	due by 12pm

Date	Details	Due
	📝 **Describe: Dictionaries (https://q.utoronto.ca /courses/250296/assignments/795674)**	due by 12pm
	📝 **Review: Binary Search Trees (https://q.utoronto.ca/courses/250296/assignments /795675)**	due by 12pm