CPSC 320: Intermediate Algorithm Design and Analysis

UBC's Vancouver campus is located on the traditional, ancestral, unceded territory of the Musqueam People.

What is the course about?

- This is a course about problem solving:
  - recognizing which algorithm design technique an algorithm uses.
  - recognizing similarities between new problems and problems you're already familiar with.
  - selecting a promising data structure or technique to tackle a problem.
  - implementing a solution to a problem, using a specific technique.
  - establishing tight bounds on the running time of your solution and proving its correctness.

COVID rules for in person classes: masks

- Masks are optional
  - But we recommend you wear them if you’re sitting close to other students.

COVID rules for in-person classes: if you are sick

- If you are feeling sick:
  - **Stay home**.
  - If you miss a tutorial or midterm, please contact the course coordinator.
  - We have policies in place to ensure you will not be penalized for being sick.

COVID rules for in person classes: if I'm sick

- If I am feeling sick:
  - If it's relatively minor (say I'm coughing) then lectures may move to zoom with fairly little warning.
  - If it's not so minor, I may have to cancel class.
  - Announcements will be posted on piazza.

COVID rules for in person classes: if you test positive

- You **must** self-isolate.
- Coming to class or tutorial after a positive COVID test
  - will be treated as (non-academic) misconduct
  - and prosecuted vigorously
- Once again:
  - we have policies in place to ensure you will not be penalized for being sick.

COVID rules for in person classes: other information

- Please
  - sit in the same spot (or at least close by) every time. This reduces the number of interactions and thus the odds of transmission. - work w/ same neighbors
  - wait until the previous class has left before coming into the room.
  - leave the classroom promptly at the end of class.

    ↳ No loitering.

Course mechanics

- We learn by doing:
  - I can talk about something, but you will only learn it when you actually work on it.
  - So we will spend a lot of our class and tutorial time working on problems
    - worksheets
    - tutorial questions
  - There will be “mini-lectures” to introduce a topic or algorithm design paradigm.

- Not much talking

Course Mechanics

- Worksheets:
  - Will be posted on the course web site ahead of time.
  - Form groups of 3 to 5 students with people nearby.
  - Assume the health situation allows it, TAs and instructors will walk around answering questions.

– he will bring printouts of worksheets

Course mechanics

- Assigned readings:
  - we will assign readings from the textbook weekly
  - then there will be a short quiz so you can test your understanding of what you read.
  - pre-class (reading) Canvas quizzes are due every Sunday at 19:00 PDT.

Course mechanics

- Tutorials: will alternate (roughly) between
  - Group work on practice problems.
  - Tutorial quizzes: - 2%
    - Group work on a small number of questions on a new problem domain
    - Followed by an individual, low-stake quiz on similar questions.
    - The quizzes will be graded based on apparent effort rather than correctness.
    - The problem domains will likely reappear on the next assignment.
      - Looks like you thought abt. the problem.

Course mechanics

- Assignments (5):
  - posted every 2nd or 3rd Friday, after the last tutorial.
  - due 10 days later (Monday evening) at 22:00 PDT.

Detailed Schedule

	Sunday	Monday	Tuesday	Wednesday	Thurday	Friday	Saturday
September 4th			Imagine Day	First Day of Classes			
September 11th							
September 18th		Tut. Quiz 1 →				→	
September 25th						National Day for Truth and Reconciliation	
October 2nd		Tut. Quiz 2 Ass 1 due →		**Take-home Test #1**		→	
October 9th		Thanksgiving Day					
October 16th		Tut. Quiz 3 Ass 2 due →				→	

Detailed Schedule [continued]

	Sunday	Monday	Tuesday	Wednesday	Thurday	Friday	Saturday
October 23rd							
October 30th		Tut. Quiz 4 Ass 3 due			**Midterm**		
November 6th				Reading break	Reading break	Remembrance Day	
November 13th		Ass 4 due					
November 20th		Tut. Quiz 5		**Take-home Test # 2**			
November 27th							
December 4th		Ass 5 due		**Last Day of Classes**			

Grading

- Breakdown:
  - Pre-class quizzes: 3%
  - Tutorial quizzes (5): 2%
  - Assignments (5): - 6% ea 30%
  - Take-home tests (2): 20%
    - Wednesday October 5th, 2022.
    - Wednesday November 23rd, 2022.

    } 1 hr within 24 hrs
    Submit by 11:59
  - Midterm: Thursday November 3rd, 2022 at 19:00: 15%
  - Final Exam: 30%
- You need to pass the weighted average of the proctored exams to pass the course.

Course web site

- See
  - https://www.students.cs.ubc.ca/~cs-320
- It contains
  - a fuller syllabus than I've put on these slides.
  - tutorials and assignments questions
  - links to Canvas, Gradescope and Piazza
  - and a lot more.

Soln's on canvas, PW protected.

W/s - day before or morning publish

Slides, etc.

External web sites

- Piazza:
  - Data is not stored in Canada.
  - So you don't need to provide a real name.
  - You should add yourself to piazza through Canvas.
  - In order to encourage peer responses, course staff will wait 4 hours after a content-related question before responding to it.
  - Note that queries may not be answered as promptly on week-ends and statutory holidays.

e.g. typos etc.

External web sites

- Gradescope:
  - We will use your CS ID (e.g. a1b2c) to create your Gradescope account.
  - Please go to https://www.cs.ubc.ca/getacct/to create or reactivate your departmental student account. The page will list your CS ID.

- To be done within 1-2 wks.