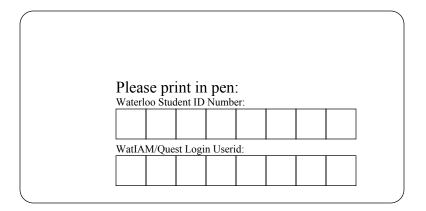
## **CROWDMARK**



Times: Thursday 2025-04-17 at 19:30 to 22:00 (7:30 to 10PM)

Duration: 2 hours 30 minutes (150 minutes)

Exam ID: 6058256

Sections: CS 240E LEC 001 Instructors: Therese Biedl



Examination Final Winter 2025 CS 240E

## Special Materials

Candidates may bring only the listed aids.

· Study Notes - Double-Sided 8.5x11 (Hand-written or printed. Hand in with the exam.)

- Proctors will not answer questions. In case of a perceived ambiguity, state your assumptions clearly.
- Write your answer in the space provided. You should not require extra space.
- If you do need more space, you may use the extra pages at the front and back of the exam. Indicate clearly at a question's page if you have done so. Only QR-coded pages will be marked.
- Each question will tell you whether you need to justify the answer. Even if no justification is needed, it is a good idea to show some of your work for a chance at part-marks in case of minor errors.
- A few reminders/comments:
  - You may use any result from lectures, assignments or tutorials without proof.
  - The function random(n) returns a randomly and uniformly chosen integer in  $\{0, \ldots, n-1\}$ .
  - The *upper median* of a sorted set of n elements is the middle element if n is odd and the larger of the two middle elements if n is even.
  - You do not have to redraw unchanged parts of a data structure; instead you may draw an abstract shape and label it with "same as above".

•	Sign your full name <b>in pen</b> here:	
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Question	1(a-e)	1(f-j)	2	3(a-d)	3(e-i)	4(a-c)	4(d-f)	5	6	7(a)	7(b)	8	9	10	Total
out of	5	5	10	9	10	8	8	7	7	8	3	7	6	7	100