CS 240E – Data Structures and Data Management (Enriched)

Module 0E: Administrivia — Enriched

Tom Iagovet

Based on lecture notes by many previous cs240 instructors

David R. Cheriton School of Computer Science, University of Waterloo

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What is this course about?

"*merge-sort* is a recursive algorithm that solves the Sorting Problem in $O(n \log n)$ worst-case time"

- These terms should all be familiar to you.
  (The regular section / course notes have a review.)
- This statement should be familiar from CS136/CS145.
- Predecessor courses: Solve problems somehow, don't care much about run-time.
- This course: Want to be *efficient*.
  - Also: more problems, more algorithms, more data structures, more ways to analyze algorithms.
  - Focus on how to store data and how to manipulate it.
  - Strong emphasis on theoretical arguments, proofs.

What is the enriched section about?

- Cover everything of cs240r, but faster:
  - Omit most of the review, some easy algorithms/proofs. (Lecture notes have in-depth reviews.)
  - Go faster over material that is likely known (quicksort, mergesort, heapsort?, hashing?).
- To enrich: More depth and more breadth.
  - Do some proofs deemed too complicated for cs240r.
  - Do more problems/data structures/ways to analyze.
- Enrichment material is mostly theoretical:
  - More and harder proofs.
  - More attention to details of proofs.
  - Not much difference in difficulty of programming.

Expected background

- CS136 (or equivalent) done well.
  - Expectation: You were a bit bored in CS136.
  - You know the algorithms from there inside/out.
  - You want a bit of a challenge.

  (Caution: If you did CS135→CS146 then you may have missed some background).
- STAT230 and CS245, now or earlier.
  - CS245 is not currently a co-req, but likely will be soon.
  - You really need to know probability and how to do proofs.
- Maturity equivalent to a 2B student.
  - Typically you should have CS241 and CS246 already.
  - Not officially a pre-req or co-req since CS240E is offered rarely

    (to enable very talented students to take CS240E early if it does not fit otherwise)
  - Expect very little help from us w.r.t. C++ programming.
- Willingness to read course notes independently whenever you are lacking some knowledge or the material went by too fast.

Course information

- Course Webpage

  `http://www.student.cs.uwaterloo.ca/~cs240e/`

  Primary source for up-to-date information for CS 240E.
  - Course policies and info
  - Lecture slides—incomplete coverage
  - Course notes ($\sim$ textbook)—complete coverage
  - Assignments / solution sketches
  - Tutorial questions / solution sketches

- Piazza: `https://piazza.com/uwaterloo.ca/Spring2026/cs240e`
  - A forum that is optimized for asking questions and giving answers.
  - Posting (partial) solutions publicly is forbidden.
    - ⋆ Use email or private posts for such questions

- LEARN
  - No required material, may have quizzes or scans

Course information

- Instructor: Tom Iagovet `tom.iagovet [at] uwaterloo.ca`
- Assistant (ISA): Jerry Wang `cs240e [at] uwaterloo.ca`
  - Main contact for questions, piazza, tutorials
    - ★ Tutorial: Friday 1:30-2:20 (recommended, not required)
    - ★ Tutorial-questons on web-page beforehand
    - ★ First in-person tutorial: Fri, May 15
- Numerous other ISAs, IAs or TAs (for regular section or grading only)
- Coordinator (ISC): Karen Anderson `kaanders [at] uwaterloo.ca`
  - Main contact for paperwork

Consulting hours: Some in-person, some on-line; see web page for details.

- Make an appointment (by email) if times do not fit.

Email: For private communication between students and course staff.

- Send email from your uwaterloo email address

Mark breakdown

- Final Exam: 45%
  - As scheduled by UW
- Midterm Exam: 24%
  - Tue, Jun 23, 4:30-6:20pm

Note: You must pass the *weighted average* of the midterm and the final assessments to pass the course

- Written Assignments 25%
  - 5 assignments each worth 5%, approximately every 2 weeks
  - All assignment to be submitted electronically as PDF via Crowdmark
- Programming Questions: 6%
  - 2 assignments each worth 3%, approximately week 5 and 9
- Due dates: Tuesdays at 5:00pm (plus a grace period).
  See web page for dates; enter in your calendar now.
  No lates allowed.
- Follow the *assignment guidelines* (on web page)
  Marks may be deducted for hard-to-read solutions.

Warning and advice

Cheating:

- Standard penalties: a grade of 0 on the assignment you cheated on, and a deduction of 5% from your course grade. You will also be reported to the Associate Dean of Undergraduate Studies.

- Cheating includes copying from elsewhere (fellow students, Web, chatGPT etc.), and also excessive collaboration.
  - In the "real world," you might be making important architectural decisions, so use this course as an opportunity to learn.
- Do *not* take notes if you get information from elsewhere. Wait until at least 30 minutes after before writing or typing
- Sign and submit Academic Integrity Declaration (AID), twice.

Advice:

- Don't fall behind! Read course notes (ideally before class).
- Pay attention! Don't multi-task.
- Seek help! Don't wait too long before asking.