CS3230 - Design and Analysis of Algorithms (DAA) - Course Admin

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About CS3230

Course Objectives:

- To study algorithms in a formal way
- To learn different techniques to design efficient algorithms (and to implement those algorithms)
- To analyze the correctness and the performance of algorithms (and the required analysis techniques)

Learning Outcomes:

- Design efficient algorithms to solve problems
- Perform analysis of the asymptotic performance of algorithms
- Able to prove correctness of designed algorithms
- Prove/analyze inherent hardness of a problem
- PS: Able to implement those algorithms

Modes of Learning - Overview

- Lectures
- Tutorials
- Learning outside classrooms
- Assignments
- Tests

For detailed information, please see the course webpage at
`https://www.comp.nus.edu.sg/~stevenha/cs3230.html`

Lectures (2%) and Lecturers

- 2 hours lecture every week (Tue, 10:00-12:00, at LT11)
  - Major portion of the lecture will be on presentation
  - There will be 12 VisuAlgo Online Quizzes of that's week topic (`https://visualgo.net/tests`)
  - Auto start on Tue, 10.00am; Auto close on Tue, 11.59am
    Any **non-zero** attempt worth a free 0.2%
  - (Virtually) attending any 10 out of 12 gives full 2% (the cap)
  - Each student is expected to score $\approx$ [1.8..2.0]% here
- Lecturers
  - CHANG Yi-Jun (`cyijun@nus.edu.sg`)
    Consultation hour: Thursday (14:00-15:00) @ COM3-02-24
  - Steven HALIM (`dcssh@nus.edu.sg`)
    Consultation hour: Monday (12:00-13:00) @ COM2-03-37
  - PRASHANT Nalini Vasudevan (`prashvas@nus.edu.sg`)
    Consultation hour: Wednesday (16:00-17:00) @ COM3-02-23

Tutorials (3%) and TAs

- 1 hour tutorial every week (Wed/Thu/Fri, at SR9)
  - Week 02 (Early Start) to Week 13 (total TWELVE sessions)
- Tutorial group size is ≈ 19/group (from ≈ 27/group last AY)
  - Up to 3% tutorial attendance marks, 1% per answer 'attempt'
  - Most questions are public (prepare answers before tutorial)
  - A few (variant) questions are disclosed during the tutorial itself
  - Students (rotated) will be asked to present their answers
  - Total 12 sessions of about $\approx$ [4..6] questions each
  - Each student is expected to score full $\approx \frac{12 \times 5}{19} \approx 3\%$ here
  - Those who want it can get full 3% as early as Tut03
- There are 20 tutorial groups
  - Your TA is also your assignment grader
  - Your TA is your main point of contact in CS3230 (D&C)
  - The list of TAs can be found at course webpage `https://www.comp.nus.edu.sg/~stevenha/cs3230.html`

Learning outside classrooms

- Discord
  - You can go anonymous if you want, but be civil and respectful
  - Post your questions about CS3230 there (let's do a live post)
  - Share your (continuous) feedback and suggestions
- VisuAlgo
  - Animations for many (but not yet all) CS3230 topics
  - In-lecture Online Quizzes (`https://visualgo.net/tests`)
  - More CS3230-related features will be added over time
- Textbook(s)
  - Main Textbook is CLRS22, Introduction to Algorithms (4th edition), by Cormen, Leiserson, Rivest, Stein, 2022
  - Reference Textbooks are KT06, Algorithm Design, by Kleinberg & Tardos, 2006, and HHE20, Competitive Prog 4, by Halim[2] and Effendy, 2020
- The whole Internet

Assignments ($(30 + \epsilon)\%$)

- There are 3 written and 2 (semi-)programming assignments
- Two weeks per assignment, from Week 2 to 12
- We will pick the best 4 out of 5 (approx $(7.5 + \epsilon)\%$ each)
  But we **do not** provide deadline extension or make-up
- Submit (scanned copy of your handwriting or soft copy) of your solutions in the CS3230 Canvas Assignments sub-page (details later by the first assignment)
- For (semi-)programming assignments, you will have to do some form of coding, although what you will submit are still in written format (e.g., the proof of correctness of your algorithm, the analysis of your algorithms, and/or the (empirical) experiments results).

Academic Policy (for Assignments)

- Do your work YOURSELF and WRITE YOUR OWN ANSWERS (copying from your co-students or using (Gen)AI tool(s) is not allowed — you are alone in midterm/final)
- If you are (REALLY) stuck, post high-level questions on Discord (other students can give hint), ask your TAs (there are 20 TAs), and only ask lecturer as the last resort (only 3 of us)
- Discussion of high-level approach with fellow students (real person) is OK, but any detailed discussion is not allowed
- Give any citations for any help you received
- Please do not post assignment questions and put your solution/code in public repositories, e.g., do NOT post anything on Stack Overflow, Quora, public GitHub repo, etc.
- Do NOT copy/compare answers!
  If you are caught for plagiarism, NUS policies will apply

Summary of Continuous Assessments (40 $\rightarrow$ 30%)

- 'Free marks': attend 10 of 12 lectures ($min(12 \times 0.2, 2) = 2\%$)
- 'Some work': attempt 3 Qs during 12 tutorials ($3 \times 1 = 3\%$)
- Do 5 Assignments, choose best 4 ($4 \times (7.5 + \epsilon) = (30 + \epsilon)\%$)
- Notice that the sum is $> 30\%$
- We cap the CA component at 30%
- One can still scores 30% from $\approx 25\% + 5\%$
- We expect about $\approx \frac{3}{4}$ of the cohort will score full 30% marks
- TL;DR: With reasonable midterm test and/or final assessment scores (next slide), it is hard to fail this course if you put effort

Tests (60 → 70%)

- 1 Midterm Test (20 → 30%)
  - Date: Sat, 04 Oct 2025 (end of Week 07)
  - Time: 100 → 120 minutes, 2.00-4.00pm SGT
  - Venue: onsite, F2F, MPSH 5
  - Make-up test (one session only, on Wed of Week 10, one day after well-being day, NUSOne time window) is available for midterm, but only for medical or official reasons as per NUS policy (PS: generally harder than the official midterm)
- 1 Final Assessment (40%)
  - Date: Tue, 25 Nov 2025
  - Time: 9.00-11.30am (2**.5** hours)
  - Venue: onsite, F2F, TBC
  - No make-up session

Both midterm and final are written tests (pen/pencil and paper)
No electronics (no calculators, no smartwatch, etc), no GenAI...

Q&A

We hope that you will enjoy this course

Optional: Let's take a class photo for social media
Please look down/away from the camera
if you do **not** want to be in the photo

Question 1 at VisuAlgo Online Quiz

Declare Your First Lecture (e-)Attendance

- Go to `https://visualgo.net/tests` (you need to login)
  FAQ: If you forgot your password,
  `https://visualgo.net/password/reset` it
  (use your e0123456@u.nus.edu)
- Start "CS3230 S1 AY25/26 L1 Quiz"
- Answer the first question (an MCQ):
  "When is the midterm test date of CS3230 S1 AY25/26?"
  FAQ: You need to get at least **non-zero**!
- Keep the session open, there are a few more questions
- Click "Submit Quiz" nearing the end of this first lecture
  But you can do so now if you know the answer of all questions