COMP9020 19T1
Week 10
Course Review

Course Review

Goal: for you to become a competent computer **scientist**.

Requires an understanding of fundamental concepts:

- number-, set-, relation- and graph theory
- logic and proofs, recursion and induction
- order of growth of functions
- combinatorics and probability

In CS/CE these are used to:

- formalise problem specifications and requirements
- develop abstract solutions (algorithms)
- analyse and prove properties of your programs

Examples:

- The University Course Timetabling Problem ($\rightarrow$ PDF)
- COMP9801 (Extended Design and Analysis of Algorithms)

Course Review

- COMP9024 – Data Structures and Algorithms (19T3)

Concept	Used for
logic and proofs	correctness of algorithms
properties of relations	reachability in graphs
graphs	shortest path problems
trees	search trees
$\mathcal{O}$ (big-Oh)	efficiency of algorithms & data structures
alphabets and words	string algorithms
probability, expectation	randomised algorithms

NB

"universitas" (Lat.) = sum of all things, a whole

By acquiring knowledge and enhancing your problem-solving skills, you're preparing yourself for the future

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Assessment Summary

1. quiz mark — max. mark 20
2. mid-term test — max. mark 20
3. final exam — max. mark 60

NB

Your overall **Score** for this course will be the *maximum* of

- quiz mark + mid-term + exam
- quiz mark + 80*(exam/60)
- mid-term + 80*(exam/60)
- 100*(exam/60)

NB

To pass the course, your overall Score must be 50 or higher **and** your mark for the final exam must be 25 or higher.
Exam $\geq 25.0 \Rightarrow$ Grade $\hat{=}$ Score
Exam $< 25.0 \Rightarrow$ Grade $\hat{=}$ 100*(Exam/60)

Final Exam

Goal: to check whether you are a competent computer scientist.

Requires you to demonstrate:

- understanding of mathematical concepts
- ability to apply these concepts and explain how they work

Lectures, study of problem sets and quizzes have built you up to this point.

Instructions & Prac Exams on course webpage ($\rightarrow$ Exams)

Final Exam

Friday, 10 May, 1:45pm — Scientia, Leighton Hall

- 6 multiple-choice questions plus 5 open questions
- Covers **all** of the contents of this course
- Each multiple-choice question is worth 4 marks ($6 \times 4 = 24$)
  Each open question is worth between 7 and 8 marks
  Total exam marks = 60
- **Answer the multiple-choice questions directly in the exam paper. Multiple-choice questions may have more than one correct answer.**
- **Write your answers to the open question in an Examination Answer Booklet.**
- Time allowed — 120 minutes + 10 minutes reading time
- *Closed book*. One **handwritten** A4-sized sheet (double-sided is ok) of your own notes

Revision Strategy

- Re-read lecture slides
- Read the corresponding chapters in the book (R & W)
- **Review/solve problem sets**
- Solve more problems from the book
- Attempt prac exam on course webpage

(Applying mathematical concepts to solve problems is a skill that improves with practice)

- Fun Quiz in today's lecture

NB

1. Extra pre-exam tutorial **Mon, 6 May, 5–6pm**, OMB G31
2. Extra pre-exam consultation **Wed, 8 May, 1–2pm**

Supplementary Exam

If you attend an exam

- you make a statement that you are "fit and healthy enough"
- it is your only chance to pass (i.e. no second chances)

Supplementary exam available to students who

- do **not** attend the final exam **and**
- apply formally for special consideration
  - with a documented and accepted reason for not attending

NB

"Compassion Supp" available to students who do not meet the requirements to pass the course but achieve an overall **Score** $\geq$**47**. Must score $\geq$50 in the supp to pass with an overall mark of 50.

Assessment

Assessment is about determining how well you understand the syllabus of this course.

If you can't demonstrate your understanding, you don't pass.

In particular, I can't pass people just because ...

- please, please, ... my family/friends will be ashamed of me
- please, please, ... I tried really hard in this course
- please, please, ... I'll be excluded if I fail COMP9020
- please, please, ... this is my final course to graduate
- etc. etc.

(Failure is a fact of life. For example, my scientific papers or project proposals get rejected sometimes too)

Assessment (cont'd)

Of course, assessment isn't a "one-way street" ...

- I get to assess you in the final exam
- you get to assess me in UNSW's MyExperience Evaluation
  - go to `https://myexperience.unsw.edu.au/`
  - login using zID@ad.unsw.edu.au and your zPass

Response rate (as of Monday): 47.4% 😰

Please fill it out ...

- give me some feedback on how you might like the course to run in the future
- even if that is "Exactly the same. It was perfect this time."

So What Was The Real Point?

The aim was for you to become a better computer scientist

- more confident in your own ability to use formal methods
- with a set of mathematical tools to draw on
- able to choose the right tool and analyse/justify your choices
- ultimately, enjoying solving problems in computer science

That's All Folks

Good Luck with the exam
and with your future computing studies