School of
Engineering and Computer Science
Te Kura Mātai Pūkaha, Pūrorohiko

Prescription

This course focuses on the techniques for designing, building and analysing computer programs that deal with large collections of data. The course addresses techniques for programming with collections of data, and the data structures and algorithms needed to implement these collections. The course expands programming skills and provides an understanding of the principles of data abstraction, algorithm design, and the analysis of algorithms fundamental to computer science.

Course learning objectives

Students who pass this course will be able to:

1. Read and write programs using standard collections (sets, lists, bags, stacks, queues, priority queues, maps)
2. Read and write programs using linked data structures, particularly tree structures
3. Read and write programs using recursion
4. Understand ideas of algorithm complexity, do approximate analysis of simple programs with collections, and make efficient design decisions
5. Recognise, understand and use a selection of basic algorithms

Course content

The course is primarily offered in-person, and there are components such as tests, labs, and tutorials which require in-person attendance. There will be remote alternatives for all the components of the course, but these are only available to students studying from outside the Wellington region. The remote option for tests will use a Zoom-based system for online supervision of the tests.

Students taking this course remotely must have access to a computer with camera and microphone and a reliable high speed internet connection that will support real-time video plus audio connections and screen sharing. Students must be able to use Zoom; other communication applications may also be used. A mobile phone connection only is not considered sufficient. The computer must be adequate to support the programming required by the course: almost any modern windows, macintosh, or unix laptop or desktop computer will be sufficient, but an Android or IOS tablet will not.

Withdrawal from Course

Withdrawal dates and process:
https://www.wgtn.ac.nz/students/study/course-additions-withdrawals

Lecturers

Dr Ghassem Narimani (Coordinator)

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Dr Marcus Frean

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Teaching Format

This course will be offered in-person with online options. For students in Wellington, tutorials, lectures, and labs will be available in-person, complemented by web/internet based resources. The in-person lectures will introduce the core material of the course and include interactive code demos. The lectures are critical for learning the material in the course.

The tutorials will involve groups of students interacting to solve a variety of problems related to the lectures and assignments. Tutorial engagement is important.

We will run labs to provide extra help for students who want to discuss their assignment work in some detail with experienced tutors; Most lab sessions are face-to-face. Students will be able to ask for help from tutors on problems with code, via an online help system.

Student feedback

Student feedback on University courses may be found at:
http://www.cad.vuw.ac.nz/feedback/feedback_display.php

Dates (trimester, teaching & break dates)

- Teaching: 11 July 2022 - 14 October 2022
- Break: 22 August 2022 - 04 September 2022
- Study period: 17 October 2022 - 20 October 2022
- Exam period: 21 October 2022 - 12 November 2022

Class Times and Room Numbers

11 July 2022 - 21 August 2022

- **Monday** 12:00 - 12:50 – LT303, New Kirk, Kelburn
- **Thursday** 12:00 - 12:50 – LT303, New Kirk, Kelburn
- **Friday** 12:00 - 12:50 – LT303, New Kirk, Kelburn

05 September 2022 - 16 October 2022

- **Monday** 12:00 - 12:50 – LT303, New Kirk, Kelburn

- **Thursday** 12:00 - 12:50 – LT303, New Kirk, Kelburn
- **Friday** 12:00 - 12:50 – LT303, New Kirk, Kelburn

Other Classes

There will be one-hour tutorial sessions during the trimester in weeks 2, 4, 6, 7, 9, and 11. Students must sign up for one of the tutorial streams. There will be optional labs in the other weeks starting from week 3. For one tutorial/lab session each week, a zoom option will be available for students who are not in the Wellington region.

Set Texts and Recommended Readings

Required

There are no required texts for this offering.

Recommended

The optional textbook for COMP 103 is:

- Lewis, DePasquale and Chase, "*Java Foundations: Introduction to Program Design and Data Structures*", 5th or 4th edition, though earlier editions will still be helpful.

Mandatory Course Requirements

In addition to achieving an overall pass mark of at least 50%, students must:

- Achieve at least 40% on at least 5 of the 6 assignments.
  (Required to ensure that CLO's 1, 2, and 3 are met.)

If you believe that exceptional circumstances may prevent you from meeting the mandatory course requirements, contact the Course Coordinator for advice as soon as possible.

Assessment

Your grade for COMP 103 will be based on the tutorial problems (group mark), the assignments, the term test and the exam.

Assessment Item	Due Date or Test Date	CLO(s)	Percentage
6 Tutorial problems (group mark)	At Tutorial	CLO: 1,2,3,4,5	5%
Assignment 1	Week 3	CLO: 1	5%
Assignment 2	Week 5	CLO: 1,5	5%
Assignment 3	End of break	CLO: 1,3,4,5	5%
Test (50 mins)	Week 7	CLO: 4	15%
Assignment 4	week 8	CLO: 1,2,3,4,5	5%
Assignment 5	week 10	CLO: 1,2,3,4,5	5%
Assignment 6	week 12	CLO: 1,2,3,4,5	5%
Exam (2hrs)	Assessment period	CLO: 1,2,3,4,5	50%

Penalties

There is an automatic extension ("late days") policy (see below). Late assignments after the automatic extensions will get zero marks unless you have made arrangements on the basis of special circumstances with the course coordinator.

Extensions

All students have an automatic 48 hours of extension ("late hours") that they can distribute over the six assignments. Extensions for assignments beyond the automatic late hours will only be granted on the basis of special circumstances, and require approval by the course coordinator.

Submission & Return

Submission of assignments must be done via the ECS online submission system, accessible through the course web pages: https://ecs.wgtn.ac.nz/Courses/COMP103_2022T2/Assignments. Marks and comments will be returned through the ECS marking system, also available through the course web pages.

Group Work

The tutorial problems will be done in groups. Assignments and the test and the exam MUST be done individually.

Workload

COMP 103 is a 15 point course, and you should plan to spend an average of 10 hours per week on it. A plausible breakdown for these hours would be:

- Lectures: 3
- Tutorials/labs: 1
- Reading/revision: 1
- Assignments: 5

Teaching Plan

See https://ecs.wgtn.ac.nz/Courses/COMP103_2022T2/Schedule.

Communication of Additional Information

All online material for this course can be accessed at https://ecs.wgtn.ac.nz/Courses/COMP103_2022T2. Announcements will be made via BlackBoard.

Links to General Course Information

- Academic Integrity and Plagiarism: https://www.wgtn.ac.nz/students/study/exams/integrity-plagiarism
- Academic Progress: https://www.wgtn.ac.nz/students/study/progress/academic-progess (including restrictions and non-engagement)
- Dates and deadlines: https://www.wgtn.ac.nz/students/study/dates
- Grades: https://www.wgtn.ac.nz/students/study/progress/grades
- Special passes: Refer to the Assessment Handbook, at https://www.wgtn.ac.nz/documents/policy/staff-policy/assessment-handbook.pdf
- Statutes and policies, e.g. Student Conduct Statute: https://www.wgtn.ac.nz/about/governance/strategy
- Student support: https://www.wgtn.ac.nz/students/support
- Students with disabilities: https://www.wgtn.ac.nz/st_services/disability/
- Student Charter: https://www.wgtn.ac.nz/learning-teaching/learning-partnerships/student-charter
- Terms and Conditions: https://www.wgtn.ac.nz/study/apply-enrol/terms-conditions/student-contract
- Turnitin: http://www.cad.vuw.ac.nz/wiki/index.php/Turnitin
- University structure: https://www.wgtn.ac.nz/about/governance/structure
- VUWSA: http://www.vuwsa.org.nz

Offering CRN: 945

Points: 15
Prerequisites: COMP 102 or 112
Duration: 11 July 2022 - 13 November 2022
Starts: Trimester 2
Campus: Kelburn