



Prescription

This course examines techniques for developing correct and efficient algorithms for some important classes of problems in Computer Science. It explores methods for designing algorithms, including greedy algorithms, divide and conquer, dynamic programming and graph algorithms. It covers techniques for demonstrating the correctness of algorithms and for analysing their efficiency.

Course learning objectives

Students who pass this course will be able to:

1. Describe some important categories of algorithms
2. Design an appropriate algorithm for a given problem
3. Demonstrate that an algorithm provides a correct solution to a given problem
4. Calculate and compare the efficiencies of different algorithms
5. Explain the concepts of computational complexity and computability, and how they apply in practice

Course content

The goal of COMP 361 is to learn how to design correct and efficient algorithms to solve problems. There are two parts to this: finding a correct solution (*design*), and determining how efficient it is (*analysis*). To achieve these goals, the course explores various general methods for designing algorithms, for demonstrating their correctness, and for analysing their efficiency. To illustrate the mechanisms and issues involved with each of the methods, we examine a number of well-known algorithms found in computer science and classify them according to the algorithm design technique used to develop them.

Withdrawal from Course

Withdrawal dates and process:

<https://www.wgtn.ac.nz/students/study/course-additions-withdrawals>

Lecturers

Zohar Levi (Coordinator)

zohar.levi@vuw.ac.nz

Aaron Chen

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405 Alan MacDiarmid Building, Kelburn

Teaching Format

During the trimester there will be two lectures and one tutorial every week.

Student feedback

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

Dates (trimester, teaching & break dates)

- Teaching: 02 March 2020 - 07 June 2020
- Break: 13 April 2020 - 27 April 2020
- Study period: 08 June 2020 - 11 June 2020
- Exam period: 12 June 2020 - 27 June 2020

Class Times and Room Numbers

02 March 2020 - 22 March 2020

- **Monday** 10:00 - 10:50 – MT228, Student Union, Kelburn
- **Tuesday** 12:00 - 12:50 – LT002, Hugh Mackenzie, Kelburn
- **Wednesday** 10:00 - 10:50 – LT002, Hugh Mackenzie, Kelburn

27 April 2020 - 07 June 2020

- **Monday** 10:00 - 10:50 – MT228, Student Union, Kelburn
- **Tuesday** 12:00 - 12:50 – LT002, Hugh Mackenzie, Kelburn
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Set Texts and Recommended Readings

Required

There are no required texts for this offering.

Mandatory Course Requirements

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

- Achieve at least 40% in the Final examination

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

Assessment Item	Due Date or Test Date	CLO(s)	Percentage
Assignments (4) worth 10% each		CLO: 1,2,3,4,5	40%
Final examination (2 hours)		CLO: 1,2,3,4,5	60%

Penalties

COMP 361 Policy for Late Submissions:

For the ASSIGNMENTS. Any assignment submitted up to 24 hours after the deadline will be penalised by 20% of your marks, and any assignment submitted between 24 and 48 hours after the deadline will be penalised by 40% of your marks. Any assignment submitted 48 hours or more after the deadline will not be marked and will get 0 marks.

3 LATE DAYS POLICY for Assignments. Each student will have 3 "late days" which you may choose to use for any assignment or assignments during the course. There will be no penalty applied for these late days. You do not need to apply for these - any late days you have left will be automatically applied to assignments that you submit late.

NB! Normally, even being 1 second late uses up 1 full late day. However, in this course, the submission system will give you 72 hours worth of "seconds" to use throughout the five assignments, so this gives you more leeway and it will be automatically calculated and reported to you by the ECS Student Marks system.

Extensions

Individual extensions will only be granted in exceptional personal circumstances, and should be negotiated with the course coordinator before the deadline whenever possible. Documentation (eg, medical certificate) may be required.

Submission & Return

All work is submitted through the ECS submission system, accessible through the course web pages. Marks and comments will be returned through the ECS marking system, also available through the course web pages.

Workload

In order to maintain satisfactory progress in COMP 361, you should plan to spend an average of 10 hours per week on this paper. A plausible and approximate breakdown for these hours would be:

- Lectures and Tutorials: 3 hours,
- Readings: 2 hours,
- Assignments: 5 hours.

Teaching Plan

See https://ecs.wgtn.ac.nz/Courses/COMP361_2020T1/LectureSchedule

Communication of Additional Information

All online material for this course can be accessed at https://ecs.wgtn.ac.nz/Courses/COMP361_2020T1/

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-progress> (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: [26060](#)

Points: 15

Prerequisites: COMP 261

Duration: 02 March 2020 - 28 June 2020

Starts: Trimester 1

Campus: Kelburn