



Prescription

Convex optimisation problems are common in science, engineering and economics. The course teaches identifying and solving convex optimisation problems. It discusses convex sets and functions, linear and quadratic programs, semi-definite programming, and duality theory. It uses these concepts to solve practical optimisation problems.

Course learning objectives

Students who pass this course should be able to:

1. Demonstrate an understanding of the fundamental concepts of convex optimization such as convexity, linear, quadratic and semi-definite programs, and duality theory.
2. Recognize and formulate convex optimization problems.
3. Solve convex optimization problems by selecting and implementing suitable algorithms.
4. Use standard software package(s) for solving convex optimization problems.

Course content

2022: The course is primarily offered in-person, and there are components such as tests, labs, tutorials, and marking sessions 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

Prof Bastiaan Kleijn (Coordinator)

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AM 417 Alan Macdiamid Building, Gate 7, Kelburn Parade, Kelburn

Teaching Format

The course has 24 hours of standard lectures and 12 hours of tutorials (1 hour per week), where the assignments are discussed.

Dates (trimester, teaching & break dates)

- Teaching: 28 February 2022 - 03 June 2022
- Break: 11 April 2022 - 24 April 2022
- Study period: 06 June 2022 - 09 June 2022
- Exam period: 10 June 2022 - 25 June 2022

Class Times and Room Numbers

28 February 2022 - 06 March 2022

- **Tuesday** 11:00 - 11:50 – 104, Von Zedlitz, Kelburn
- **Wednesday** 11:00 - 11:50 – 104, Von Zedlitz, Kelburn

28 February 2022 - 10 April 2022

- **Friday** 11:00 - 11:50 – 501, Old Kirk, Kelburn

07 March 2022 - 10 April 2022

- **Tuesday** 11:00 - 12:50 – 501, Old Kirk, Kelburn

25 April 2022 - 05 June 2022

- **Tuesday** 11:00 - 12:50 – 501, Old Kirk, Kelburn
- **Friday** 11:00 - 11:50 – 501, Old Kirk, Kelburn

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 a grade of 40% on 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 |
|---|-----------------------|--------------|------------|
| 10 weekly assignments (approx 3 hours each) | TBC | CLO: 1,2,3,4 | 20% |
| Two midterm tests (1 hour each) | TBC | CLO: 1,2,3 | 35% |
| Final examination (2 hours) | TBC | CLO: 1,2,3 | 45% |

Workload

The student workload for this course is 150 hours.

Teaching Plan

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: [34031](#)

Points: 15

Prerequisites: EEEN 320 (or ECEN 320 or 321)

Restrictions: ECEN 422, ECEN 426 in 2014–2016

Duration: 28 February 2022 - 26 June 2022

Starts: Trimester 1

Campus: Kelburn