

ENGR123 (2017) - Engineering Mathematics with Logic and Statistics

Prescription

Mathematical techniques employed by network and software engineers, including methods of combinatorics, logic, probability and decision theory. The course emphasises engineering applications of these techniques.

Course learning objectives

Students who pass this course should be able to:

1. Know the important definitions and results in introductory logics and statistics.
2. Understand their significance to computer science and dealing with data.
3. Demonstrate your understanding by stating definitions and results, and solving simple problems.

Course content

This course covers ideas in logic, combinatorics, probability and statistics. On the logic combinatorics side, we will study propositional logic, introductory graph theory, proofs, sets and relations, and induction and recursion. On the probability and statistics side, we will study data and sampling, probabilities and random variables, estimation and confidence intervals, and model fitting.

Withdrawal from Course

Withdrawal dates and process:

<http://www.victoria.ac.nz/students/study/course-additions-withdrawals>

Lecturers



Reshma Ramadurai (Coordinator)

reshma.ramadurai@vuw.ac.nz 04 4635274

432 Cotton, Kelburn



Thuong Nguyen

thuong.nguyen@vuw.ac.nz 04 4635274

Teaching Format

During the trimester, there will be four lectures per week, one of which will run infrequently and students will be informed in class when to attend the fourth lecture. Students attend one two-hour lab each week, and students are also encouraged to attend one tutorial session each week. Sign-ups for labs and tuts will be in the first week of lectures using myAllocator. Labs and tuts start in week two.

Dates (trimester, teaching & break dates)

- Teaching: 17 July 2017 - 20 October 2017
- Break: 28 August 2017 - 08 September 2017
- Study period: 24 October 2017 - 26 October 2017
- Exam period: 27 October 2017 - 18 November 2017

Class Times and Room Numbers

17 July 2017 - 27 August 2017

- **Monday** 10:00 - 10:50 – LT101, Maclaurin, Kelburn
- **Wednesday** 10:00 - 10:50 – LT101, Maclaurin, Kelburn
- **Thursday** 10:00 - 10:50 – LT101, Maclaurin, Kelburn

31 July 2017 - 27 August 2017

- **Tuesday** 14:10 - 15:00 – LT205, Hugh Mackenzie, Kelburn

11 September 2017 - 22 October 2017

- **Monday** 10:00 - 10:50 – LT101, Maclaurin, Kelburn
- **Tuesday** 14:10 - 15:00 – LT205, Hugh Mackenzie, Kelburn
- **Wednesday** 10:00 - 10:50 – LT101, Maclaurin, Kelburn
- **Thursday** 10:00 - 10:50 – LT101, Maclaurin, 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:

- Hand in reasonable attempts to at least 8 out of 10 assignments.
- Sit the test.
- Obtain at least 45% 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

This course will be internally and externally assessed through assignments, labs, tests, and a final examination.

Assignments (weekly)	CLO: 1,2,3	10%
One in-course test (1 hour)	CLO: 1,2,3	20%
Lab reports	CLO: 1,2,3	20%
Final examination (3 hours)	CLO: 1,2,3	50%

Penalties

Late assignments will not generally be counted for assessment purposes (unless by prior special arrangement or because of illness or other special circumstances) but may be used to meet Mandatory Course Requirements.

Workload

Students should expect to spend at least 12 hours a week – including time spent in lectures, labs and tutorials, completing assignments and reviewing notes.

Teaching Plan

Links to General Course Information

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

Offering CRN: [27044](#)

Points: 15

Prerequisites: ENGR 121

Restrictions: the pair MATH 161, (MATH 177, QUAN 102 or STAT 193);

Duration: 17 July 2017 - 19 November 2017

Starts: Trimester 2

Campus: Kelburn