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MAT1830 Mathematics for computer science 2 - Semester 2, 2010

Chief Examiner:
Daniel Delbourgo
Contact hours: Monday 9 -11 am

Lecturer(s) / Leader(s):

Clayton
Daniel Delbourgo
Contact hours: Monday 9 -11 am

Malaysia
Dr Soo Leow
Introduction

Welcome to MAT1830, Mathematics for computer science 2. This unit is designed to equip you with the mathematical background necessary for 2nd and 3rd year computer science. It has a particular emphasis on the notion of proof, and on mathematical rigour.

Unit synopsis

Topics fundamental to mathematics and computing including elementary number theory, sets, relations and functions; methods of logic and proof, especially proof by induction; recurrence relations and difference equations; trees and other graphs.

Learning outcomes

At the completion of this unit students will:

- have an understanding of sets, relations and functions and associated concepts and their uses in mathematics and computer science;
- be able to use basic methods of proof, particularly induction, to solve problems in graph theory, combinatorics and number theory;
- become familiar with simple first and second order recurrence relations;
- will understand the basic concepts and algorithms of number theory, such as the euclidean algorithm and its role in investigating divisors and primes.

Contact hours

3 hrs lectures/wk, 1 hr tutorial/wk

Workload

For on campus students, workload commitments are:

- 36 one hour lectures in total
- 12 tutorial classes in total
- a minimum of 4-5 hours personal study a week, including assignments

Unit relationships

Prohibitions

MAT1077, MTH1112
Teaching and learning method

Teaching approach

The approach to teaching is through formal lectures (3 per week), and written assignments (one per week for 10 weeks). The student should spend at least 9 hours a week either attending lectures, or working on related problems.

Timetable information

For information on timetabling for on-campus classes please refer to MUTTS, http://mutts.monash.edu.au/MUTTS/

Tutorial allocation

On-campus students should register for tutorials/laboratories using the Allocate+ system: http://allocate.its.monash.edu.au/

Unit Schedule

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*Please note that these dates may only apply to Australian campuses of Monash University. Off-shore students need to check the dates with their unit leader.
Unit Resources

Prescribed text(s) and readings

The Lecture Notes MAT1830/MTH1112 are available to be purchased from the university bookshop.

Recommended text(s) and readings

"Discrete Mathematics", by Richard Johnsonbaugh

Equipment and consumables required or provided

Students studying off-campus are required to have the minimum system configuration specified by the Faculty as a condition of accepting admission, and regular Internet access. On-campus students, and those studying at supported study locations may use the facilities available in the computing labs. Information about computer use for students is available from the ITS Student Resource Guide in the Monash University Handbook.

Study resources

Study resources we will provide for your study are:

Study resources we will provide for your study are:

- Weekly detailed lecture notes outlining the learning objectives, discussion of the content, required readings and exercises;
- Weekly tutorial or laboratory tasks and exercises with sample solutions provided one to two weeks later;
- Access to past examination papers and solutions;
- Discussion groups;
- This Unit Guide outlining the administrative information for the unit;
- The unit web site on MUSO, where resources outlined above will be made available.
Assessment

Overview

Examination (3 hours): 70%; In-semester assessment: 30%

Faculty assessment policy

To pass a unit which includes an examination as part of the assessment a student must obtain:

- 40% or more in the unit's examination, and
- 40% or more in the unit's total non-examination assessment, and
- an overall unit mark of 50% or more.

If a student does not achieve 40% or more in the unit examination or the unit non-examination total assessment, and the total mark for the unit is greater than 50% then a mark of no greater than 49-N will be recorded for the unit.

Assignment tasks

Assignment coversheets

Assignment coversheets are available via "Student Forms" on the Faculty website: http://www.infotech.monash.edu.au/resources/student/forms/
You MUST submit a completed coversheet with all assignments, ensuring that the plagiarism declaration section is signed.

Assignment submission and return procedures, and assessment criteria will be specified with each assignment.

Assignment submission and preparation requirements will be detailed in each assignment specification. Submission must be made by the due date otherwise penalties will be enforced. You must negotiate any extensions formally with your campus unit leader via the in-semester special consideration process: http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html.

• Assignment task 1

  Title:   Assessed Courseworks x 10
  Description: There are ten assessed courseworks to be completed, due one per week from Week 3 onwards.
  Weighting: 3% each - Total 30%
  Criteria for assessment: Marks awarded both for the correctness of the answer, and for the clarity of the explanation.
  Due date: At the end of each week, in the support class
Examination

- **Weighting:** 70%
- **Length:** 3 hours
- **Type (open/closed book):** Closed book
- **Electronic devices allowed in the exam:** None

See Appendix for End of semester special consideration / deferred exams process.

Due dates and extensions

Please make every effort to submit work by the due dates. It is your responsibility to structure your study program around assignment deadlines, family, work and other commitments. Factors such as normal work pressures, vacations, etc. are not regarded as appropriate reasons for granting extensions. Students are advised to NOT assume that granting of an extension is a matter of course.

Students requesting an extension for any assessment during semester (eg. Assignments, tests or presentations) are required to submit a Special Consideration application form (in-semester exam/assessment task), along with original copies of supporting documentation, directly to their lecturer within two working days before the assessment submission deadline. Lecturers will provide specific outcomes directly to students via email within 2 working days. The lecturer reserves the right to refuse late applications.

A copy of the email or other written communication of an extension must be attached to the assignment submission.

Refer to the Faculty Special consideration webpage or further details and to access application forms: http://www.infotech.monash.edu.au/resources/student/equity/special-consideration.html

Late assignment

Assignments received after the due date will be subject to a penalty of 10%, and more than a week late will not be marked (unless there are extenuating circumstances).

Return dates

Students can expect assignments to be returned within two weeks of the submission date or after receipt, whichever is later.

Feedback

Types of feedback you can expect to receive in this unit are:

- Informal feedback on progress in labs/tutes
- Graded assignments with comments
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Solutions to tutes, labs and assignments
Appendix

Please visit the following URL: http://www.infotech.monash.edu.au/units/appendix.html for further information about:

- Continuous improvement
- Unit evaluations
- Communication, participation and feedback
- Library access
- Monash University Studies Online (MUSO)
- Plagiarism, cheating and collusion
- Register of counselling about plagiarism
- Non-discriminatory language
- Students with disability
- End of semester special consideration / deferred exams