Discrete Mathematics 6698
Unit Outline, 2009

Faculty of Information Sciences and Engineering
University of Canberra

Australian Government Higher Education (CRICOS)
Registered Provider number: #00212K

This Unit Outline must be read in conjunction with:

(a) *Studying at the University of Canberra: A Guide to Policies and Procedures* which sets out University-wide policies and procedures, including information on matters such as plagiarism, grade descriptors, moderation, feedback and deferred exams, and is available at `http://www.canberra.edu.au/student-services`

(b) *Guide to Student Services at the University of Canberra*, which is available at `http://www.canberra.edu.au/student-services`

(c) Any additional information specified in Section 6f.

Contents

1: General information

1a. Unit title: Discrete Mathematics

1b. Unit number: 6698

1c. Semester and year offered: Semester 1, 2009

1d. Credit point value: 3

1e. Unit level: 1

1f. Unit convenor: Yvonne Wisbey

E-mail: Yvonne.Wisbey@canberra.edu.au
Office: 11C8
Phone: 6201 2951

E-mail is by far the quickest and most reliable way to contact me.

Yvonne will be rostered for certain weekly hours in the ILC (ISE Learning Centre 11A33/34), and this is one suitable regular contact point. However, students are welcome to make appointments (by email) to meet at other times.

Unit moderator: Dr. Ian Lisle

E-mail: Ian.Lisle@canberra.edu.au
Office: 11C9
Phone: 6201 2389

1g. Administrative contact details:

Staff: Marzieh Nowrouz Tafreshi, Michaela Dalgleish
E-mail: ise@canberra.edu.au
Office: 11B27, 11C15
Phone: 6201 2417, 6201 2619.

2: Academic content

2a. Unit description and learning outcomes:

Unit Description: This unit investigates topics from discrete mathematics in the broad areas of Logic and Proof, Sets, Functions and Relations and Graphs and Trees. The treatment of these topics will cover both practical and theoretical aspects and will usually include at least one important application in Information Technology.

Learning Outcomes: Students will be expected to be able to understand and manipulate the language and notation of symbolic logic; understand and create proofs of numeric and algebraic propositions; understand and use the language and notation of sets, relations and functions, graphs and trees; analyse and create simple automata.

2b. Prerequisites and Corequisites:

Prerequisite: Basic mathematical knowledge is assumed, equivalent to an ACT Mathematical Applications major.

2c. Generic Skills This unit contributes to the development of generic skills such as your ability to think analytically and critically about the application of mathematical ideas to information technology and related areas.

3: Delivery of unit and timetable

3a. Delivery mode:

The unit is delivered in face-to-face mode at UC Bruce campus over the standard semester.

It is also assumed that students can and will retrieve documents from the unit website, and by email at their UC student account.

3b. Schedule of classes and topics by week:

At time of printing, the unit timetable was as follows:

Lectures		
Monday	09:30–11:00	9A1
Wednesday	11:30–12:30	2B11
Thursday	11:30–12:30	2B9

Tutorials			
T/01	Wed	10:30–11:30	2A13
T/02	Thu	09:30–10:30	5C2
T/03	Thu	13:30–14:30	6C36
T/03	Thu	14:30–15:30	11B24

Students should attend all lectures and one tutorial group each week. Lectures meet every week. Tutorials will start in Week 2 and will meet each week after that. There are no lectures on Monday of Weeks 3 and 10 (due to respectively Canberra Day and Anzac Day).

A lecture schedule is attached. This schedule is subject to minor variations.

4: Unit resources

4a. List of texts / readings: Susannah S. Epp, *Discrete Mathematics with Applications*, 3rd ed., Thomson, 2004. Availability of this book at the UC bookshop may be delayed by a few weeks.

4b. Materials and equipment:

- A scientific calculator will be useful.
- You will need access to a computer with e-mail, a web browser, and Adobe Acrobat Reader v6.0 or later. For instance, machines in the Windows labs in Buildings 10 and 11 are suitable.

Note that the website will provide some resources (especially any printed handouts). But it is definitely *not* going to be a comprehensive site, and cannot serve as a substitute for attendance at face-to-face classes.

ISE Student Learning Resource Centre: Students will have access to the ISE Student Learning Resource Centre in Building 11 (11A33/34). There will be tutors scheduled in the SLRC each week for drop-in help on Discrete Maths, plus a revision workshop will be scheduled before each class test and exam. This is a popular, successful and FREE service, so please make use of it!

4c. Unit website:

A website will be maintained at: `http://learnonline.canberra.edu.au`
Your OSIS site will have all your units listed and linked to their respective websites. We assume that you visit this website regularly – at least weekly. Tutorial questions, past tests, solutions and the like will be posted there, as well as news and announcements on the operation of the unit.

5: Assessment

5a. Assessment Overview:

A composite score will be computed based on the following items:

Item	Comment	Weight	Due Date
Class Test 1	Covers lectures, Weeks 1–3	15%	Wed Week 5, 25/3/09
Class Test 2	Covers lectures, Weeks 4–6	15%	Wed Week 10, 29/4/09
Class Test 3	Covers lectures, Weeks 7,10,11	15%	Wed Week 13, 20/5/09
Final Exam, Part A	(effectively Test 4) Covers lectures, Weeks 12–15	15%	During exam period at end of semester
Final Exam, Part B	Covers entire unit	40%	

5b. Details of each assessment item:

Class Tests Each class test will cover approximately 3 weeks of lectures; the relevant material for each test is shown in the Lecture Schedule handout. The tests are scheduled during normal lecture times / rooms, and will be 50 minutes long. For each Test, there will be a review class about a week before where the format and content of the test is reviewed. Permitted materials for class tests are: 1×A4 side of handwritten notes, scientific calculator (non-alpha keypad), language dictionary (non-electronic).

Final Exam The final exam will be 3 hours long, and will consist of two parts. Part A will effectively be Test 4: it will cover the last 3 weeks lectures and has weight 15%, and should take about 1 hour. Part B covers the entire semester's work, and has weight 40%; it should take about 2 hours to complete. The exam will be in one of the scheduled exam weeks at end of semester, but as unit convenor I have little control over the exact date. Permitted materials for the final exam are: 2×A4 sides of handwritten notes, scientific calculator (non-alpha keypad), language dictionary (non-electronic).

In all tests and in the final exam, calculators may *not* be loaned to other students, and mobile phones are *not* allowed.

A composite mark for each student will be computed according to the percentage weightings shown above. These composite marks may then be scaled up (never down!) to give numerical grade scores, using a formula determined by the unit convenor. The numerical grades will then become letter grades according to the standard UC ranges.

5c. Special assessment requirements:

There are no special assessment requirements.

5d. Supplementary assessment:

For the university policy on supplementary assessments, see *Studying at the University of Canberra: A Guide to Policies and Procedures* at `http://www.canberra.edu.au/student-services`

5e. Text-matching software

Not relevant to Discrete Maths.

6: Student responsibility

6a. Workload:

The amount of time you will need to spend on study in this Unit will depend on a number of factors including your prior knowledge, learning skill level and learning style. Nevertheless, in planning your time commitments you should note that for a 3cp unit, the total notional workload over the fifteen week semester is assumed to be 150 hours, or an average of 10 hours per week. These hours include time spent in classes.

6b. Special needs:

Students who need assistance in undertaking the unit because of disability or other circumstances should inform the unit convenor or the Disabilities Office as soon as possible so the necessary arrangements can be made.

6c. Attendance requirements:

The primary delivery mode is face-to-face, and it is expected that you attend the classes.

6d. Required IT Skills:

All students are assumed to be able to:

- Read and print documents on the unit website – mostly they will be in Adobe PDF format.
- Communicate using e-mail.
- Use their own scientific calculator.

6e. Costs:

Students will need to purchase the textbook and a scientific calculator.

6f. Additional Information:

Communication with class: It is assumed that all students will regularly (at least weekly) open the unit's website and read any announcements there. It is also assumed that all students will regularly read e-mail received at their UC student accounts – at least once a week. Announcements made at lectures, or circulated by e-mail to UC student accounts will be deemed to have been made to the whole class.

Provision of calculator: It is the student's responsibility to bring a suitable (working!) calculator to the tests and final exam. We will not be supplying these and no consideration can be given to those who come to a test without one.

7: Student Feedback

All students enrolled in this unit will have an opportunity to provide anonymous feedback on the unit at the end of the semester via the Unit Satisfaction Survey which will be presented to you on OSIS. Your lecturer or tutor may also invite you to provide more detailed feedback through an anonymous questionnaire administered through the University's Centre for Teaching and Learning (TLC).

8: Authority of this unit outline

Any change to the information contained in Section 2 (Academic content), Section 3 (Delivery of unit and timetable) and Section 5 (Assessment) of this document, will only be made by the Unit Convenor if the written agreement of staff and a majority of students has been obtained; and if advice of the change is then forwarded to each student enrolled in the unit, either by email to their student address or by mail to their registered term address. Any individual student who believes him/herself to be disadvantaged by a change is encouraged to discuss the matter with the Unit Convenor.
Note that the lecture schedule in Section 3 is a guide only. The lecture sequence and topics may be varied slightly.