Web Site
It is important that you check the Junior Mathematics web site regularly. It may be found through WebCT, or by following links from the University of Sydney front page, or by going directly to


Important announcements relating to Junior Mathematics are posted on the site, and there is a link to the MATH1904 page. Material available from the MATH1904 page may include information sheets, the Junior Mathematics Handbook, notes, exercise sheets and solutions, and previous examination papers.

Lectures

<table>
<thead>
<tr>
<th>Times</th>
<th>Location</th>
<th>Lecturer</th>
<th>Consultation</th>
</tr>
</thead>
<tbody>
<tr>
<td>9am Wed &amp; 1pm Thurs</td>
<td>Carslaw 175</td>
<td>Dr W. Palmer, Carslaw room 525</td>
<td>TBA, 1-2pm</td>
</tr>
</tbody>
</table>

Lectures run for 13 weeks. The last lecture will therefore be on Thursday 25 October.

Tutorials
Tutorials (one per week) start in week 2. You should attend the tutorial given on your personal timetable. Attendance at tutorials will be recorded. Your attendance will not be recorded unless you attend the tutorial in which you are enrolled.

Tutorial sheets
The tutorial sheets for a given week will be available on the Friday of the previous week. You must take the current week’s sheet to your tutorial. The sheet must be printed from the web.
Solutions to tutorial exercises for week $n$ will usually be posted on the web on the afternoon of the Friday of week $n$. They will be available for purchase from KOPYSTOP, 55 Mountain Street, Broadway, early in week $n + 1$. 

1
Assessment
Your final raw mark for this unit will be calculated as follows:

- 70%: Exam at end of semester 2.
- 30%: Quiz mark.

Your final raw mark is then scaled to produce your final mark. Marks are scaled so that the distribution of grades is consistent with the quality of the class, and the difficulty of the unit, as required by the University.

Examination
There is one examination of 1.5 hours’ duration during the examination period at the end of semester 2. Further information about the exam will be made available at a later date.

Quizzes
There are two quizzes, each worth 15% of your final raw mark. Quizzes are held during tutorials, in

- week 5 (beginning 20 August) and week 9 (beginning 17 September).

You should put those dates in your diary now! You must sit for the quiz during the tutorial in which you are enrolled. Your quiz mark will not be recorded if you sit for the quiz in a tutorial in which you are not enrolled (unless you have made an arrangement with the Student Office). If you miss a quiz, then you must go to the Student Office as soon as possible afterwards.

Assignments
Two assignments will be set. Assignments do not count towards your final mark. Solutions and a marking scheme will be provided, and you are encouraged to mark your assignment yourself, or ask a friend to mark it for you (using the marking scheme provided). This will provide you with valuable feedback on how you are handling the material, and help you prepare for the exam.

Textbook

Where to go for help
For administrative matters, go to the Mathematics Student Office, Carslaw room 520.

For help with mathematics, see your lecturer, or your tutor. Your lecturer guarantees to be available during his indicated office hour, but may well be available at other times as well.
Week-by-week outline

The unit follows the textbook fairly closely, with additional material for this advanced stream.
The chapter references in the following table refer to the textbook by Choo and Taylor.

<table>
<thead>
<tr>
<th>Week</th>
<th>Lecture</th>
<th>Topics</th>
</tr>
</thead>
</table>
| 1    | 1       | Chapter 1. Introduction to the module.  
The Catalan numbers. Algorithms.  
Chapter 2. Sets. |
|      | 2       |        |
| 2    | 1       | Chapter 3. Functions. |
|      | 2       | Chapter 3. Permutations. |
| 3    | 1       | Chapter 4. Counting principles. |
|      | 2       | Chapter 5. Ordered selections.  
Equivalence relations. |
| 4    | 1       | Chapter 6. Unordered selections. |
|      | 2       | Chapter 8. Multinomial coefficients.  
Binomial identities. |
| 5    | 1       | Chapter 7. The inclusion-exclusion principle.  
Chapter 9. Boolean expressions. |
|      | 2       |        |
| 6    | 1       | Chapter 10. Karnaugh maps. |
| 7    | 1       | Chapter 11. Logic.  
More logic. |
|      | 2       |        |
| 8    | 1       | Chapter 13. Mathematical induction.  
|      | 2       |        |
| 9    | 1       | More generating functions.  
Chapter 15. Linear recurrence relations. |
|      | 2       |        |
| 10   | 1       | More recurrence relations.  
Chapter 16. Formal languages. |
|      | 2       |        |
| 11   | 1       | Chapter 17. Finite state machines.  
Kleene’s theorem. |
|      | 2       |        |
| 12   | 1       | The Myhill-Nerode theorem. |
|      | 2       | Chapter 18. Grammars. |
| 13   | 1       | Chapter 19. Graphs, trees and Catalan numbers.  
Revision. |
|      | 2       |        |