



**UNSW**  
SYDNEY

## Course Outline

**MATH1011**

**Fundamentals of Mathematics B**

School of Mathematics and Statistics

Faculty of Science

Term 3, 2019

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# 1. Staff

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Position	Name	Email	Room
Course Authority	Assoc. Prof. Jonathan Kress	<a href="mailto:j.kress@unsw.edu.au">j.kress@unsw.edu.au</a>	RC-3073
Lecturer-in-charge of Maple and Online Tutorials	Assoc. Prof. Jonathan Kress	<a href="mailto:j.kress@unsw.edu.au">j.kress@unsw.edu.au</a>	RC-3073
Tutor	Dr Shane Keating	<a href="mailto:s.keating@unsw.edu.au">s.keating@unsw.edu.au</a>	RC-2081

Staff consultation times are provided on Moodle and in the School of Mathematics and Statistics website for *current students > undergraduate > student services > help for students* page, at the beginning of each term.

## 2. Administrative matters

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### Contacting the Student Services Office

Please visit the School of Mathematics and Statistics web-site for a wide range of information on School Policies, Forms and Help for Students by visiting the “**Student Services**” page.

For information on Courses, please go to “Current Student”, “Undergraduate and/or Postgraduate” “**Courses Homepage**” for information on all **course offerings**.

The “Student Notice Board” can be located by going to the “Current Students” page; Notices are posted regularly for your information here. Please familiarise yourself with the information found in these locations. The School web page is found: <http://www.maths.unsw.edu.au>

If you cannot find the answer to your queries on the web pages you are welcome to contact the Student Services Office directly. The First Year Advisor in the Student Services Office is Mrs Markie Lugton. All administrative enquiries concerning first year Mathematics courses should be sent to M Lugton, either:

- By email to [ug.mathsstats@unsw.edu.au](mailto:ug.mathsstats@unsw.edu.au)
- By phone: 9385 7011
- Or in person to the Red Centre building, level 3, room 3072

Change of tutorials, due to timetable clashes or work commitments, permission to take class tests outside your scheduled tutorial, advice on course selection and other administrative matters are handled in the Student Services Office. Constructive comments on course improvement may also be emailed to the Director of First Year Mathematics, A/Prof Jonathan Kress. Should we need to contact you, we will use your official UNSW email address of [zstudentno@unsw.edu.au](mailto:zstudentno@unsw.edu.au) in the first instance. **It is your responsibility to regularly check your university email account. Please use your UNSW student email and state your student number in all emails to the Student Services Office.**

### 3. Course information

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**Units of credit:** 6

**Assumed knowledge:** It is assumed that you have the equivalent knowledge of a mark of at least 60 in the HSC Mathematics (formerly known as HSC 2 unit Mathematics), to enrol in MATH1011.

**It will be assumed that you have good understanding of everything in the syllabuses for School Certificate Advanced Mathematics and HSC Mathematics (2 unit) and that you have well-developed skills in the basic techniques of high school mathematics.** If you feel as though you don't have sufficient knowledge to successfully complete this course then you should seek advice from the Director for First Year Mathematics, A/Prof Jonathan Kress.

**Teaching times and locations: see the link on the central timetable pages:**

<http://timetable.unsw.edu.au/2019/MATH1011.html>

#### Course summary

MATH1011 will provide you with an in-depth knowledge of topics in Calculus and Linear Algebra and show applications in interdisciplinary contexts through lectures and exercises. It will enhance your skills in analytical thinking and problem solving through illustrative examples in lectures and problem based tutorials. The course will also engage you in independent and reflective learning through your independent mastery of tutorial problems and Maple. The mathematical skills that you will develop are generic problem solving skills, based on logical arguments that can be applied in multidisciplinary work. You will be encouraged to develop your communication skills through active participation in tutorials, and by writing clear, logical arguments when solving problems.

#### Course aims

The aim of MATH1011 is that by the time you finish the course you should understand the concepts and techniques covered by the syllabus and have developed skills in applying those concepts and techniques to the solution of appropriate problems. The exact syllabus is defined by the content of the lectures and tutorial problems.

The syllabus includes a computing component, based on the software package Maple, and you should develop sufficient facility with Maple to solve appropriate problems.

#### Course learning outcomes (CLO)

At the successful completion of this course you (the student) should be able to:

- Apply the concepts and techniques of the syllabus to solve appropriate problems.
- Formulate mathematical models and interpret their solution.
- Communicate mathematical ideas effectively using correct terminology.
- Use technology as an aid to solve appropriate problems.

## 4. Learning and teaching activities

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### Lecture videos

A complete set of lecture videos can be found on Moodle in the section of the appropriate week. You must watch the week 1 videos before the corresponding tutorial for that week.

### Tutorials

Please note that Tutorials commence in week 1 and run to week 10 according to your myUNSW timetable. See below the lecture and tutorial schedule.

	Monday	Tuesday	Wednesday	Thursday	Friday
<b>Lectures</b>	<b>Lecture videos – see Moodle</b>				
<b>Tutorial M14A</b>	2pm to 3pm (week 1-10)			12pm to 1pm (week 1-10)	
<b>Tutorial T11A</b>		11am to 12pm (week 1-10)			1pm to 2pm (week 1-10)
<b>Other</b>	M15A: 3pm to 4pm. Weeks 4 & 8 only, for lab test				F15A: 3pm to 4pm. Weeks 4 & 8 only, for lab test

Students in MATH1011 are enrolled in two tutorials, one for algebra and one for calculus. The calculus tutorial is timetabled for the first half of the week and the algebra tutorial is in the second half of the week. **Attendance is compulsory for all classroom tutorials** and a roll will be called at all tutorial classes.

If another tutorial is available, students can change their tutorials via myUNSW until the end of week 1. After that time, they can only change tutorials by going to the Student Services Office, Red Centre Building room RC-3072 with evidence of a timetable clash or work commitments. A tutorial problem schedule is provided on Moodle. Note there are both traditional printed tutorial problems and online (NUMBAS) problems.

### UNSW Moodle

The School of Mathematics and Statistics uses the Learning Management System called Moodle. To log into Moodle, use your zID and zPass at the following URL:

<http://moodle.telt.unsw.edu.au>

Once logged in you should see a link to MATH1011 that will take you to the homepage in Moodle. Here you will find announcements, general information, notes, lecture slides, classroom tutorial and homework problems and links to online tutorial and assessments.

### Computing

In addition to the calculus and algebra components, there is a computing component in MATH1011. This is partly interwoven with the calculus and algebra components and partly independent of them. This computing component is constructed so that you teach yourself how to use the Maple software package to solve a selection of mathematical problems. The aim here is to give you experience in learning new (computational) techniques by yourself.

**There will be introductory instructional videos available in UNSW Moodle.**

Students are then expected to independently work through and understand the provided Maple worksheets and use the practise tests in Maple TA for self-assessment. More details about the computing component, including information about the online Maple test are given later in this booklet. Finally, note that the end of term exam may contain one or two questions requiring knowledge of Maple.

## 5. Assessment

### Assessment overview

Your final mark will be made up as follows:

Assessment task	Weight	Course Learning Outcomes
Online tutorial problems (10% for each lab test; 10% for weekly online tutorials (best 8 of 10 weeks).	30%	1,2,4
Assignment	10%	1,2,3
End of term exam	60%	1,2,4

### Schedule of all assessments

Online tutorial problems have weekly deadlines Monday 5pm of the week following the tutorial. Eg, the week 1 online quizzes have a deadline of 5pm Monday of week 2.

Week	Assignment/lab tests	Week	Assignment/lab tests
1		6	
2		7	Assignment due Friday 5pm
3		8	Lab Test 2 Friday 3pm (RC-M020)
4	Lab Test 1 Friday 3pm (RC-M020)	9	
5		10	
<b>Final Examination – check myUNSW for your exam timetable</b>			

Note:

- You will be able to view your final exam timetable once Exams Central has finalised the timetable. Please visit the web page: <https://student.unsw.edu.au/exam-timetable> for details.
- It is very important that you understand the University's rules for the conduct of Examinations and the penalties for **Academic Misconduct Guide**. This information can be accessed through myUNSW at: <https://student.unsw.edu.au/exams> NB: In recent years there have been cases where severe penalties have been imposed for misconduct in relation to tests and exams in Maths courses.
- Assessment criteria: UNSW assesses students under a standards based assessment policy. For how this policy is applied within the School of Mathematics and Statistics, please visit the web site: <http://www.maths.unsw.edu.au/currentstudents/assessment-policies>

- If you are unwell / miss your **final examination**, please refer to the Special Consideration Policy by visiting the website: <https://student.unsw.edu.au/special-consideration>

The final mark after completing the Concessional AA will not increase to a mark higher than 50. Website to School Notice Board: <http://www.maths.unsw.edu.au/currentstudents/current-students>

## Assignment

The assignment will be released on Moodle by the beginning of week 5. You will be presented with a set of questions on Moodle and you will need to provide fully worked and clearly explained solutions that will be submitted on Moodle as a PDF. Detailed instructions will be provided on Moodle. Your assignment will be marked by your tutor and returned via Moodle within two weeks. The purpose of the assignment is to provide feedback on your mathematical writing and your explanation of mathematical ideas. The submission deadline for the assignment is shown in the schedule of all assessments. A penalty of 10% per day late will be deducted for late submissions.

## End of Term Examination

The final exam covers material from the whole of the algebra, calculus and computing (Maple) syllabuses. The exam will consist of algebra questions and calculus questions. Each will have 25 multiple choice sub questions with 5 options each. Some sub questions in each of the algebra and calculus questions will require some basic knowledge of Maple.

## Calculator Information

For end of term UNSW exams, students must supply their own calculator. Only calculators on the UNSW list of approved calculators may be used in the end of term exams. Before the exam period, calculators must be given a "UNSW approved" sticker, obtained from the School of Mathematics and Statistics Office, and other student or Faculty centres. The UNSW list of calculators approved for use in end of term exams is available at: <https://student.unsw.edu.au/exam-approved-calculators-and-computers>

## Online Tutorials: Weekly Online and Lab Tests

Each week you must complete a couple of simple online tutorials, one for algebra and one for calculus. These online tutorials will include a question on the Maple. These tests can be found on the MATH1011 Moodle course page. You can make as many attempts as you like at these online tutorials and you can check your work as you go so you should expect to gain full marks. The best 8 of the 10 weeks contribute 10% towards your final mark.

You must also complete two supervised lab tests based on the online and classroom tutorial problems. The lab tests are held in your "Other" tutorial scheduled in your timetable in the Red Centre lab RC-M020. Each of the supervised tests is worth 10% of your final mark.

In MATH1011 you will learn how to use the computer algebra software called Maple which is installed in the Red-Centre labs and also available to use on your own computer via the myAccess service:

<https://www.myaccess.unsw.edu.au/>

At least one question in each online tutorial will require the use of Maple. There will also be some questions on Maple in the final exam. The Maple questions in the online tutorials will prepare you for the Maple questions in the final exam.

So that you can learn how to use Maple, worksheets and notes are provided for this on Moodle. All the information that you will need to will be available on the MATH1011 Moodle page. More details of the Computing Component of this course are provided later in this booklet.

Note:

- The pair of quizzes will be available in week 1 and due on Monday of week 2;



- Each attempt at these quizzes must be your own work, but you are encouraged to discuss the methods required with other students;
- Each quiz presented to you will be slightly different, so don't just copy answers from one attempt to the next.
- **No deadline extensions will be granted.** You should attempt these tests with sufficient remaining time to allow for unplanned services interruptions.
- Revision versions of the quizzes that do not count for marks are available after their deadlines for students who miss them or want to use them for revision.

## 6. Expectations of students

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### School Policies

The School of Mathematics and Statistics has adopted a number of policies relating to enrolment, attendance, assessment, plagiarism, cheating, special consideration etc. These are in addition to the Policies of The University of New South Wales. Individual courses may also adopt other policies in addition to or replacing some of the School ones. These will be clearly notified in the Course Initial Handout and on the Course Home Pages on the Maths Stats web site.

Students in courses run by the School of Mathematics and Statistics should be aware of the School and Course policies by reading the appropriate pages on the Maths Stats web site starting at:

<http://www.maths.unsw.edu.au/currentstudents/assessment-policies>

The School of Mathematics and Statistics will assume that all its students have read and understood the School policies on the above pages and any individual course policies on the Course Initial Handout and Course Home Page. Lack of knowledge about a policy will not be an excuse for failing to follow the procedure in it.

### Academic integrity, referencing and plagiarism

**Academic integrity** is fundamental to success at university. Academic integrity can be defined as a commitment to six fundamental values in academic pursuits: honesty, trust, fairness, respect, responsibility and courage.<sup>1</sup> At UNSW, this means that your work must be your own, and others' ideas should be appropriately acknowledged. If you don't follow these rules, plagiarism may be detected in your work.

Further information about academic integrity and **plagiarism** can be located at:

- The *Current Students* site <https://student.unsw.edu.au/plagiarism>, and
- The *ELISE* training site <http://subjectguides.library.unsw.edu.au/elise/presenting>

The *Conduct and Integrity Unit* provides further resources to assist you to understand your conduct obligations as a student: <https://student.unsw.edu.au/conduct>.

Further information about academic integrity and **plagiarism** can be located at:

- The *Current Students* site <https://student.unsw.edu.au/plagiarism>, and
- The *ELISE* training site <http://subjectguides.library.unsw.edu.au/elise/presenting>

The *Conduct and Integrity Unit* provides further resources to assist you to understand your conduct obligations as a student: <https://student.unsw.edu.au/conduct>.

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<sup>1</sup> International Center for Academic Integrity, 'The Fundamental Values of Academic Integrity', T. Fishman (ed), Clemson University, 2013.

## University Statement on Plagiarism

This statement has been adapted from statements by the St James Ethics Centre, the University of Newcastle, and the University of Melbourne.

Plagiarism is the presentation of the thoughts or work of another as one's own. Examples include:

Direct duplication of the thoughts or work of another, including by copying work, or knowingly permitting it to be copied. This includes copying material, ideas or concepts from a book, article, report or other written document (whether published or unpublished), composition, artwork, design, drawing, circuitry, computer program or software, web site, Internet, other electronic resource, or another person's assignment without appropriate acknowledgement

- Paraphrasing another person's work with very minor changes keeping the meaning, form and/or progression of ideas of the original;
- Piecing together sections of the work of others into a new whole;
- Presenting an assessment item as independent work when it has been produced in whole or part in collusion with other people, for example, another student or a tutor; and,
- Claiming credit for a proportion a work contributed to a group assessment item that is greater than that actually contributed.
- Submitting an assessment item that has already been submitted for academic credit elsewhere may also be considered plagiarism.
- The inclusion of the thoughts or work of another with attribution appropriate to the academic discipline does not amount to plagiarism.

Students are reminded of their Rights and Responsibilities in respect of plagiarism, as set out in the University Undergraduate and Postgraduate Handbooks and are encouraged to seek advice from academic staff whenever necessary to ensure they avoid plagiarism in all its forms.

The Learning Centre website is the central University online resource for staff and student information on plagiarism and academic honesty. It can be located at: [www.lc.unsw.edu.au/plagiarism](http://www.lc.unsw.edu.au/plagiarism)

The Learning Centre also provides substantial educational written materials, workshops, and tutorials to aid students, for example, in:

- Correct referencing practices;
- Paraphrasing, summarising, essay writing, and time management;
- Appropriate use of, and attribution for, a range of materials including text, images, formulae and concepts.
- Individual assistance is available on request from The Learning Centre.

Students are also reminded that careful time management is an important part of study and one of the identified causes of plagiarism is poor time management. Students should allow sufficient time for research, drafting, and the proper referencing of sources in preparing all assessment items.

## 7. Readings and resources

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### Text books

- J.C. Arya and R.W. Lardner, *Mathematics for the Biological Sciences*, Prentice-Hall.
- J.B. Fitzpatrick, *New Senior Mathematics – Three Unit Course for Years 11 and 12*, Heinemann

Arya & Lardner and Fitzpatrick are available at the UNSW Bookshop, while all other need material for MATH1011 is available via UNSW Moodle.

## 8. Getting help outside tutorials

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### Staff Consultations

From week 2, there will be a roster which shows which staff members who are available to help students in the first-year mathematics courses at various times throughout the week. No appointment is necessary. This roster is displayed on the same Notice Board as timetables, near the School Office (room 3070, Red Centre), it is also available from Moodle and the web page: <http://www.maths.unsw.edu.au/currentstudents/consultation-mathematics-staff>

### Mathematics Drop-in Centre

The Maths Drop-in Centre provides free help to students with certain first and second year mathematics courses. First year courses supported are MATH1011, MATH1031, MATH1081, MATH1131, MATH1141, MATH1231 and MATH1241. The Maths Drop-in Centre office is located in RC-3064, and opening times during term is from 10am to 3pm from Mondays to Fridays.

The Maths Drop-in Centre schedule will be available on the Schools website:

<https://www.maths.unsw.edu.au/currentstudents/Mathematics-Drop-in-Centre> by the end of week 1. Please note that no appointment is necessary, this is a drop-in arrangement to obtain one-on-one help from tutors.

### Maple Lab Consultants

For help with the Maple computing component of this course, consultants will be available in the Red Centre lab RC-G012B from 11am to 4pm each teaching day in weeks 1 to 9. For more details, visit website:

<http://www.maths.unsw.edu.au/currentstudents/maple-lab-consultants>.

### Moodle forums

The Moodle class homepage will have a forum where you can ask questions anonymously and get help on any aspect of the course. Students are encouraged to reply to questions asked by the peers. Staff members will also check the forums and answer questions.

### Additional support for students

- The Current Students Gateway: <https://student.unsw.edu.au/>
- Academic Skills and Support: <https://student.unsw.edu.au/academic-skills>
- Student Wellbeing, Health and Safety: <https://student.unsw.edu.au/wellbeing>
- Disability Support Services: <https://student.unsw.edu.au/disability-services>
- UNSW IT Service Centre: <https://www.it.unsw.edu.au/students/index.html>

## 9. Applications for Special Consideration

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If you feel that your performance in, or attendance at a final examination or another assessment scheduled has been affected by illness or circumstances beyond your control, or if you missed the examination because of illness or other compelling reasons, you may apply for special consideration.

It is essential that you take note of the rules listed below which apply to applications for special consideration in all first year Mathematics courses.

1. Applications must be **submitted prior to the start of the day of the assessment**, except where illness or misadventure prevent you from doing so.

If you determine you are not well during an exam, alert the exam invigilator, and you can apply for Special Consideration. You must provide medical evidence dated within 24 hours of the exam with your application.

Where misadventure has prevented you from submitting or sitting for an assessment, applications must be made within 3 working days of the assessment or the period covered by the supporting documentation.

In exceptional circumstances, an application may be accepted outside this limit. Visit the website for more information on how to Apply for Special Consideration, and important things to note:

<https://student.unsw.edu.au/special-consideration>

2. If your course involves a Maple/Matlab lab test and you apply for Special Consideration for that assessment, you should contact the lecturer in charge of computing as soon as possible. A resit will be organised for later time.
3. Applications for Special Consideration for continuous assessment, such as online tutorials or online exercises that are available for an extended period are only accepted in exceptional circumstances as they already offer substantial flexibility.
4. If your application for Special Consideration refers to a missed class test, the School will provide advice on your application through Moodle or your UNSW Student email. A resit may be arranged.
5. If your application for Special Consideration is for the final examination, please do not expect an immediate response from the School. All applications will be considered together. See the information below.

Please note that you **will NOT be granted Additional Assessment in a course if your performance in the course** (judged by attendance, class tests, assignments and examinations) **does not meet a minimal standard**. A total mark of greater than 40% on all assessment not affected by a request for Special Consideration will normally be regarded as the minimal standard to allow an Additional Assessment.

6. It is YOUR RESPONSIBILITY to find out from the School of Mathematics and Statistics, whether you have been granted Additional Assessment and when and where the additional assessment examinations will be held. Please visit the School's Notice Board for information:  
<http://www.maths.unsw.edu.au/currentstudents/current-students>

Information about award of Additional Assessment for the final exam and a provisional list of results will be made available on the Maths & Stats Marks page later in the term. A link to the Maths & Stats Marks page is provided on Moodle.

7. **The Additional Assessment exam for MATH1011 will be held within the period from 13 to 17 January 2020.** A link to the Additional Assessment timetable, including locations, will be placed on the Current Students Notice Board (see 6 above) under heading "Special Consideration and Additional

Assessment” information. You will need to produce your UNSW Student Card to gain entry to the Additional Assessment examination.

8. If you have two Additional Assessment examinations scheduled for the same time, please consult the Student Services Office either by email or phone ([ug.mathsstats@unsw.edu.au](mailto:ug.mathsstats@unsw.edu.au) or 9385 7011), so that special arrangements can be made.

## Important Notes

- The Additional Assessment exam may be of a different form to the original exam and must be expected to be at least as difficult.
- If you believe your application for Special Consideration has not been processed, you should immediately consult the Director for First Year Mathematics, Dr Jonathan Kress (Room 3073, Red Centre).
- If you believe that the above arrangements put you at a substantial disadvantage, you should send full documentation of the circumstances to: Director of First Year Mathematics, School of Mathematics and Statistics, email to [j.kress@unsw.edu.au](mailto:j.kress@unsw.edu.au) at the earliest possible time.
- If you suffer from a chronic or ongoing illness that has, or is likely to, put you at a serious disadvantage, then you should contact the Disability Support Services who provide confidential support and advice. Their web site is: <https://student.unsw.edu.au/disability>
- Disability Support Services (DSS) may determine that your condition requires special arrangements for assessment tasks. Once the School has been notified of these, we will make every effort to meet the arrangements specified by DSS.
- Additionally, if you have suffered misadventure during term then you should provide full documentation to the Director of First Year Mathematics as soon as possible. In these circumstances it may be possible to arrange discontinuation without failure or to make special examination arrangements.

Professor B Henry  
Head, School of Mathematics and Statistics

## 10. Algebra Syllabus

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<b>Trigonometry</b>	Right triangles, sine and cosine rules, applications to 2 and 3 dimensional problems, radians, solution of $\sin x = k$ , introduction to inverse trig. functions, solutions of $\sin^{-1} k = x$ , sketching trig. and inverse trig. functions. Trig. identities, exact trig. ratios, auxiliary angle and modelling with waves
<b>Vectors</b>	Introduction, application to displacement, problems, vector geometry, dot and cross products
<b>Polynomials</b>	Remainder and factor theorems
<b>Complex Numbers</b>	Polynomials with complex roots, arithmetic with complex numbers, modulus and argument, argand diagrams. Polar form of complex numbers, powers, square roots, inequalities in $\mathbb{R}^2$ , sketching regions of the complex plane
<b>Matrices</b>	Matrix, arithmetic, $2 \times 2$ determinants, Inverses and applications
<b>Systems of Linear Equations</b>	Gaussian elimination, back-substitution, and applications
<b>Counting</b>	Sizes of (finite) sets, addition law, inclusion/exclusion, multiplication law, arrangements and selections. Selections and applications
<b>Probability</b>	Introduction, addition and multiplication laws. Independent events, conditional probability.
<b>Summation and induction</b>	Summation notation, series, mathematical induction. Binomial Theorem

## 11. Calculus Syllabus

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<b>Functions</b>	Notation, domain and range of functions. Sketching curves without calculus (straight lines, quadratics, cubics).
<b>Inequalities and absolute values</b>	Sketching and solving.
<b>Functions</b>	Surds and indices. Exponentials and logarithms. Odd, even functions. Inverse functions.
<b>Limits</b>	Polynomial and trigonometric and introduction to differentiation.
<b>Continuity</b>	Definition of continuity.
<b>Differentiation</b>	Definition of the derivative. Product, quotient and chain rules. Higher derivatives. Interpretations of the derivative. Curve sketching
<b>Applications of differentiation</b>	Motion of a particle, maxima and minima
<b>Sequences</b>	Newton's method.

<b>Further differential calculus</b>	Implicit differentiation. Parametric equations, related rates. Exponential growth and decay. Newton's law of cooling. Modelling with the exponential function.
<b>Integration</b>	Riemann sums. Fundamental theorem of calculus. Methods of integration, including substitution. Areas under curves. Definite integrals. Simpson's rule. Applications of Integration

## 12. Computing in MATH1011

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### Why computing?

MATH1011 covers many mathematical techniques that are useful in understanding and predicting the behaviour of physical and biological systems. In order for you to become comfortable with these techniques, the problems presented in lectures and tutorials often involve only small data sets, few variables or simple functions.

The aim of the computing component of this course is to show you how you can use **computer algebra software** to apply the mathematics you have learnt to solve problems that would be very cumbersome to tackle by hand. In MATH1011, the software we will be using is called Maple. Even for relatively simple problems, Maple can be useful as it does not make simple arithmetic errors!

Whether or not you continue in mathematics, the computing skills you learn with us should still be useful in your university studies and beyond because:

- Your experience with Maple will make it easier to learn other software packages.
- Many other Schools are starting to use packages like Maple.
- Symbolic computing techniques will be useful when you use mathematics in your future career.

UNSW has a policy that all students (no matter what program they are in) should be introduced to the basic techniques of computer use. For students in science and engineering programs, part of this requirement is met by the computing included in first year mathematics.

### What sort of computer or application do I need?

The School of Mathematics and Statistics provides computing labs with everything you will need for computing in MATH1011 (see below). Most of the School's computers run Linux, and we encourage you to use these. There are also PCs running Microsoft Windows that you may use.

You can access material on Moodle, the testing environment Maple TA and the School's website from almost any web browser anywhere. You can also use Maple on your own computer via the myAccess service:

<https://myaccess.unsw.edu.au>

### What will I have to do and when?

Each weekly quiz contains one Maple question. There will also be at least one Maple sub-question in the end of term exam. The online Maple test will prepare you for the Maple question(s) in the exam.

### Getting started with computing in MATH1011

The MATH1011 module in UNSW Moodle has several short instructional videos illustrating how to access and use all the computing related components of MATH1011.

You should use some of your free time in week 1 to go to the Red Centre lab G012, and complete Maple introductory materials, available in UNSW Moodle. Consultants will be on duty from 11am to 4pm each day to help you get started with these tasks.

## Getting further help

There is a wide range of self-help material in the computing pages in the MATH1011 module on UNSW Moodle and this should be the place you check in the first instance.

A **computing consultant** will be available in room G012 from at least 11am to 4pm every weekday until at least the end of week 9. The consultant will be sitting at one of the **Consultant's Terminals** at the front of the main blocks of PC's or helping people at their computers and wearing a bright yellow vest. If you have a problem with Maple, ask the consultant.

For all **Maple** problems (but not equipment faults, login problems and password problems) you should see the consultant or see your tutor if it is a problem with the mathematics involved.

**Equipment faults, login problems and password problems** should be notified to the operators at the Help Desk (the window in Room M020). Please note that the operators and other staff of the Computer Centre are NOT available to act as computing consultants. They are not experts in Maple.

If all else fails, contact or send an email to the Lecturer in Charge of MATH1011 Computing, Dr Chi Mak (Red Centre Room 4073), email [chi.mak@unsw.edu.au](mailto:chi.mak@unsw.edu.au)

## Computing Facilities

A detailed description of the computing facilities in the School of Mathematics and Statistics is available via documents linked from the web page –

<http://www.maths.unsw.edu.au/currentstudents/first-year-computing-notes>

These documents are also available from within the Linux desktop (see page 21). Here we describe only those features needed for MATH1011.

## The computing laboratories

The School of Mathematics and Statistics runs two Undergraduate Student Laboratories, containing a network of approximately 150 personal computers (PCs) which run either the Linux or Microsoft Windows operation system (see below). It does not matter which PC you use at any particular session, they all behave the same way.

For information on these computer labs, including opening hours, see the School's website:

<https://www.maths.unsw.edu.au/currentstudents/computing-facilities>

## Code of Conduct

All students are assumed to be aware of the *Acceptable Use of UNSW ICT Resources Policy*, a copy of this Policy can be found at

<https://my.unsw.edu.au/student/resources/ComputingCommunicationRule.html>

In addition, the School of Mathematics and Statistics reserves the right to monitor all use of its computer systems, and to share the monitoring results with the relevant law enforcement authorities. The computing facilities provided by the School of Mathematics and Statistics must be used only for tasks related to the mathematics course(s) for which your computing account has been created. Misuse of computers is a serious offence and will be treated as a case of academic misconduct. This includes damage to or theft of any part of the equipment. A breach of security will be treated as a case of serious academic misconduct. Breach of security includes but is not limited to:



- deliberately providing a password to another person (student or otherwise);
- attempting to gain unauthorised access to files within the system (“hacking”);
- deliberately introducing computer viruses;
- copying of assignments (by email or any other means).

Electronic mail (email) facilities are provided by the University so that you can communicate with lecturers and tutors. All use of email is monitored and action will be taken against anyone who makes excessive use of email or uses it to send annoying, obscene, sexist or racist messages to other users or to engage in academic misconduct. Internet and other electronic communication services are provided to allow you to access our computers from other parts of the campus and from home and to transfer assignments which have been completed on other computers. These services are NOT provided so that you can access other computers to play games or indulge in other activities not related to university studies.

All electronic communications using the School’s facilities are monitored to ensure that these facilities are being used in a responsible manner. Likewise, the disk space allocated to your account should be used only for keeping files related to your course. The system administrator may remove any files which are not associated with University work.

These restrictions are imposed because computing resources are limited and there are thousands of other users of the system (over 4000 students with logins for the Red Centre labs). We all have to live and work together and you are expected to be considerate to other users. This is the bottom line when it comes to acceptable behaviour. If you have any doubts about whether an action is acceptable, don’t do it.

**Remember: Do not tell anyone else your zPass.**

## **Health and Safety Issues**

Students should be aware that using a keyboard or performing any repetitive task for a long uninterrupted period may be associated with physical discomfort and /or muscular or other injury. To lessen the risk of such problems, a break from typing should be taken at regular intervals, a good body position adopted; wrists should be kept straight as much as possible and not rested on the sharp edge.

If you feel pain, numbness, tingling, weakness, cramping, or stiffness in your hands, wrists, arms, shoulder, neck, or back, see a qualified health professional.

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Microsoft Windows is a registered trademark of the Microsoft Corporation.