

## MAST10017 Fundamentals of Mathematics

<b>Credit Points:</b>	12.5
<b>Level:</b>	1 (Undergraduate)
<b>Dates &amp; Locations:</b>	2015, Dookie This subject commences in the following study period/s: Semester 2, Dookie - Taught on campus.
<b>Time Commitment:</b>	Contact Hours: 170 hours Total Time Commitment: 24 hours of lectures 24 hours of tutorials/ workshops Up to 18 hours of computer-aided learning exercises
<b>Prerequisites:</b>	None
<b>Corequisites:</b>	None
<b>Recommended Background Knowledge:</b>	None
<b>Non Allowed Subjects:</b>	None
<b>Core Participation Requirements:</b>	<p>&lt;p&gt;For the purposes of considering request for Reasonable Adjustments under the Disability Standards for Education (Cwth 2005), and Student Support and Engagement Policy, academic requirements for this subject are articulated in the Subject Overview, Learning Outcomes, Assessment and Generic Skills sections of this entry.&lt;/p&gt;         &lt;p&gt;It is University policy to take all reasonable steps to minimise the impact of disability upon academic study, and reasonable adjustments will be made to enhance a student's participation in the University's programs. Students who feel their disability may impact on meeting the requirements of this subject are encouraged to discuss this matter with a Faculty Student Adviser and Student Equity and Disability Support: &lt;a href="http://services.unimelb.edu.au/disability"&gt;http://services.unimelb.edu.au/disability&lt;/a&gt;&lt;/p&gt;</p>
<b>Coordinator:</b>	Ms Ros Gall
<b>Contact:</b>	<a href="mailto:rosgall@unimelb.edu.au">rosgall@unimelb.edu.au</a> (mailto:rosgall@unimelb.edu.au)
<b>Subject Overview:</b>	<p>Note: students with a score of 25 or above in Units 3/4 VCE Mathematics Methods or equivalent would not normally be permitted to take this subject.</p> <p>Fundamentals of Mathematics is designed for students requiring mathematical knowledge and skills which are applicable to, and provide a foundation for further studies in science, statistics, business and economics. Students will gain the ability to apply mathematical knowledge and skills to analyse, investigate, model and solve problems in a variety of situations, ranging from well defined and familiar situations to unfamiliar and open ended situations.</p>
<b>Learning Outcomes:</b>	<p>Student completing this subject will complete the following topics:</p> <ul style="list-style-type: none"> <li># Fundamental concepts of number systems and counting techniques, and be able to use logic and set notation;</li> <li># Algebra: polynomials of up to and including degree 3, linear factors, factor theorem, remainder theorem, quadratic and cubic equations, transposition of formulae;</li> <li># Functions: exponential and logarithmic functions and graphs, including transformations; composite and inverse functions; solution of equations involving transcendental functions;</li> <li># Calculus: derivatives, product quotient and chain rules for differentiation; integration of simple functions; applications of differential and integration including rates of change, related rates and simple differential equations;</li> <li># Sequences and series and applications;</li> <li># Probability and statistics: elementary probability; random variables, mean and variance; binomial and normal distributions; introductory statistical modelling, inference for population means, linear regression.</li> </ul>
<b>Assessment:</b>	6 homework assignments - 30 minutes each (fortnightly - each worth 5%) 1.5 hour mid-semester test (approximately week 6 - 20%) 2-hour end of semester examination (50%)

<b>Prescribed Texts:</b>	M. Lial , J. Holcomb & T. Hungerford, Mathematics with Applications, 10th ed, Addison-Wesley, 2010.
<b>Breadth Options:</b>	This subject is not available as a breadth subject.
<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	<p>This subject encompasses particular generic skills so that on completion of the subject students should have developed skills relating to:</p> <ul style="list-style-type: none"> <li># problem-solving skills: the ability to engage with unfamiliar problems and identify relevant solution strategies;</li> <li># analytical skills: the ability to construct and express logical arguments and to work in abstract or general terms to increase the clarity and efficiency of analysis;</li> <li># collaborative skills: the ability to work in a team;</li> <li># time management skills: the ability to meet regular deadlines while balancing competing commitments.</li> </ul>
<b>Related Course(s):</b>	Diploma in General Studies