

MAST10017 Fundamentals of Mathematics

Credit Points:	12.5
Level:	1 (Undergraduate)
Dates & Locations:	2016, Dookie This subject commences in the following study period/s: Semester 2, Dookie - Taught on campus.
Time Commitment:	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
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	<p><p>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.</p> <p>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: http://services.unimelb.edu.au/disability</p></p>
Coordinator:	Ms Ros Gall
Contact:	Email: rosgall@unimelb.edu.au (mailto:rosgall@unimelb.edu.au)
Subject Overview:	<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>
Learning Outcomes:	<p>Students undertaking this subject will complete the following topics:</p> <ul style="list-style-type: none"> # Fundamental concepts of number systems: number line and Cartesian plane, interval and set notation, use of logic # Algebra: simplification, expansion and factorisation of algebraic expressions, solution of equations, transposition of formulae # Functions: graphs of polynomials of up to and including degree 3, and exponential and logarithm functions, including transformations # Introduction to mathematical modelling: linear and non-linear models and regression methods # Sequences and series and applications to financial mathematics # Statistics: univariate and bivariate data analysis, introduction to experimental design # Probability: probability rules, discrete random variables, binomial and normal distributions # Calculus: derivatives - product, quotient and chain rules for differentiation; integration of simple functions; applications including rates of change, extrema of graphs, solution of simple differential equations and areas under graphs

Assessment:	Six fortnightly homework assignments - 30 minutes each and each worth 5% (total 30%) A one and a half hour mid-semester test approximately in Week 6 worth 20% A two-hour exam to be held during the end-of-semester exam period worth 50%
Prescribed Texts:	M. Lial , J. Holcomb & T. Hungerford, Mathematics with Applications, 11th ed, Addison-Wesley, 2015.
Breadth Options:	This subject is not available as a breadth subject.
Fees Information:	Subject EFTSL, Level, Discipline & Census Date, http://enrolment.unimelb.edu.au/fees
Generic Skills:	<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"> # Problem-solving skills: the ability to engage with unfamiliar problems and identify relevant solution strategies # 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 # Collaborative skills: the ability to work in a team # Time management skills: the ability to meet regular deadlines while balancing competing commitments
Related Course(s):	Diploma in General Studies