



MT112

CALCULUS 2

This sample unit outline is provided by CHC for prospective and current students to assist with unit selection.

Elements of this outline which may change with subsequent offerings of the unit include Content, Required Texts, Recommended Readings and details of the Assessment Tasks.

Students who are currently enrolled in this unit should obtain the outline for the relevant semester from the unit lecturer.

Unit code	MT112
Unit name	Calculus 2
Associated higher education awards	Bachelor of Education (Primary) Bachelor of Education (Secondary) Bachelor of Arts/Bachelor of Education (Secondary)
Duration	One semester
Level	Intermediate
Core/Elective	Required for a minor in Mathematics
Weighting	Unit credit points: 10 Course credit points: Bachelor of Education (Primary) 320 Bachelor of Education (Secondary) 320 Bachelor of Arts/Bachelor of Education (Secondary) 320
Delivery mode	Face-to-face on-site
Student workload	<i>Face-to-face on site</i> Contact hours 30 hours Reading, study and assignment preparation 120 hours TOTAL 150 hours Students requiring additional English language support are expected to undertake an additional one hour per week.
Prerequisites/ co-requisites/ restrictions	<i>Prerequisite:</i> MT110 Foundations of Mathematics
Rationale	According to the <i>The Mathematics? Why Not? Report</i> , prepared by the Australian Association of Mathematics Teachers and the University of New England, a key factor that deters students from studying higher level mathematics in senior secondary years is the large number of secondary teachers who are teaching mathematics outside their training and expertise. The authors state, "More than one-quarter of our junior secondary mathematics teachers have not even completed one year of university study in mathematics, making it difficult to engage students in a potentially demanding subject." This unit extends the range of fundamental mathematical knowledge, understanding and skills available to students to enable them to analyse physical processes mathematically. Topics include complex numbers, integration, volume of revolution, improper integrals, differential equations, linear algebra, and probability. Students are afforded the opportunity not only to advance their knowledge and skills of these topics but also to explore their applications in many contexts, as well as continuing to develop their appreciation of the logic, order and consistency of such mathematical applications and how these reflect the character of God and His creation.
Prescribed text(s)	Anton, H. & Rorres, C. (2013). <i>Elementary linear algebra: Applications version</i> . (11th ed.) New York, NY: Wiley. Stewart, J. (2015). <i>Calculus: Early transcendentals</i> . (8th ed.). Boston, MA: Cengage Learning. Selected readings will be available via the Moodle site for this unit.

Recommended
readings

	<p>Task 3: Final Exam</p> <p>Word Length/Duration: 3 Hours</p> <p>Weighting: 50%</p> <p>Learning Outcomes: 1-5</p> <p>Assessed: Examination Week</p>
Unit summary	<p>This course extends the range of fundamental mathematical techniques available to students to enable them to analyse physical processes mathematically. It will provide future teachers of mathematics, physics, or science sound knowledge and depth in their field.</p>

SAMPLE