EDUC90666 Teaching Functions and Calculus

Credit Points:	12.5
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	This subject is not offered in 2016.
Time Commitment:	Contact Hours: 24 hours Total Time Commitment: 170 hours
Prerequisites:	None
Corequisites:	None
Recommended Background Knowledge:	Good knowledge of mathematics to Year 11 level, and general knowledge of teaching practices in any subject.
Non Allowed Subjects:	None
Core Participation Requirements:	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. 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
Contact:	This subject is not offered in 2016.
Subject Overview:	This subject explores the content and pedagogical content knowledge needed to teach the functions and calculus strands in senior secondary mathematics. Participants will study research on students' mathematical thinking and effective teaching methods, analyse major teaching resources including graphics calculators with CAS facility. Research and practice on promoting conceptual change through cognitive conflict and discussion will be reviewed, along with techniques for promoting procedural fluency and for promoting real world applications. Practical teaching tasks will complement theory. Students will be expected to participate in intensive teaching, completion of weekly exercises to satisfactory standard and regularly contribute to the electronic forum.
Learning Outcomes:	On completion of this subject, participants will be able to: # give overview of the content of this strand of mathematics # demonstrate insight into student thinking # review the options for teaching of the strand and relevant research # explain how the goals of working mathematically can be achieved through this strand # discuss critical pedagogical issues, especially related to developing procedural fluency and promoting conceptual change.
Assessment:	A unit plan with associated pedagogical analysis (2500) due mid semester (50%) A report on student thinking about fundamental concepts with targeted teaching due end of semester. (2500 words, 50%) This subject has a minimum hurdle requirement of 80% attendance at all tutorials, seminars and workshops.
Prescribed Texts:	Goos, M., Stillman, G., & Vale, C. (2007). Teaching secondary school mathematics: Research and practice for the 21st century. Sydney: Allen & Unwin Further readings will be provided. Special requirement. Handheld calculator or computer software recommended for use in the VCE subject Mathematical Methods.
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:	# Be skilled communicators who can effectively articulate and justify their mathematics teaching practices; # Understand the significance of developing their mathematics teaching practice on the basis of research evidence; # Demonstrate mastery of the subject matter for this area of teaching and of general principles of effective teaching and learning in a mathematics context, including with technology