EDUC90459 Learning Area Mathematics (Additional) 1

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2010, Parkville This subject commences in the following study period/s: February, Parkville - Taught on campus. Parkville, On Campus
Time Commitment:	Contact Hours: 36 hours Total Time Commitment: 125 hours total commitment
Prerequisites:	None
Corequisites:	You must take the following subject in the same study period (co or pre-req) | Subject	Study Period Commencement:	Credit Points:
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EDUC90457 Learning Area Mathematics 1	February	12.50	
Recommended Background Knowledge:	None
Non Allowed Subjects:	None
Core Participation Requirements:	Attendance at all classes (tutorial/seminars/practical classes/lectures/labs) is obligatory. Failure to attend 80% of classes will normally result in failure in the subject.
Coordinator:	Dr Vicki Steinle
Contact:	Education Student Centre
Subject Overview:	This subject will focus on mathematical learning in number, measurement, chance and data, space, and structure across the secondary school level. Teacher candidates will analyse the development of key mathematical concepts, and identify critical progression points for school students' learning. Teacher candidates will consider typical conceptions and misconceptions held by school students, and the likely causes for these. Teacher candidates will investigate the design and use of targeted diagnostic tools to evaluate mathematical understanding, and recognise the advantages and limitations of particular assessment items for monitoring school students' procedural and conceptual knowledge. In addition, they will learn to interpret school students' mathematical solutions, and devise appropriate responses. Teacher candidates will examine the role of cognitive conflict in learning, teaching strategies that focus on changing conceptions, and develop strategies for motivating learning and engagement. They will investigate the importance of appropriate examples for learning, and the changes in opportunities afforded as the parameters of examples are varied. Characteristics of the middle years of schooling will be considered.
Objectives:	On completion of this subject teacher candidates will be able to: # Demonstrate understanding of key progression points in the development of mathematical understanding in the secondary school; # Demonstrate an understanding of how school students construct mathematical knowledge; # Demonstrate knowledge of a range of teaching techniques available to help school students develop mathematical understanding; # Demonstrate the ability to evaluate examples and tasks to determine the mathematical knowledge that they develop; # Demonstrate a knowledge of how to assess mathematical understanding and interpret school students' reasoning; # Demonstrate understanding of individual differences in school students; # Analyse and synthesise findings from research literature.

Assessment:	There are 2 assessment tasks: An essay (1500 words) due mid semester (37.5%) An analytical report (2500 words) due end of semester (62.5%) There is 1 hurdle requirement: Completion of weekly tasks
Prescribed Texts:	CAS calculator Goos, M., Stillman, G., Vale, C. (2007) Teaching Secondary Mathematics: Research and Practice for the 21st Century. Crows Nest NSW: Allen & Unwin.
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:	On completion of this subject, teacher candidates will have the knowledge, skills and understanding to enable them to: # Be skilled communicators who can effectively articulate and justify their practices as knowledgeable agents of changes. # Be flexible and able to adapt to change through knowing how to learn; # Understand the significance of developing their practice on the basis of research evidence; # Work in teams with skills in cooperation, communication and negotiation; # Be independent of mind, responsible, resilient, self-regulating; # Have a conscious personal and social values base.
Related Course(s):	Master of Teaching (Secondary) Master of Teaching (Secondary)