460-658 Foundations of Mathematics Teaching

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2009, This subject commences in the following study period/s: Semester 2, - Taught on campus. Parkville on campus
Time Commitment:	Contact Hours: 36 hours Total Time Commitment: 125 hours total commitment
Prerequisites:	A pass in a mathematics subject at Year 12. Teacher candidates may not enrol in Learning Area - Mathematics 1, Learning Area - Mathematics 2, Learning Area - Mathematics (Additional) 1 or Learning Area - Mathematics (Additional) 2
Corequisites:	None
Recommended Background Knowledge:	None
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
Coordinator:	Ms Lynda Maree Ball
Subject Overview:	This subject provides an introduction to teaching years 7 - 9 mathematics in Victorian schools. Teacher candidates will develop pedagogical content knowledge of the mathematics curriculum, especially related to beginning Algebra, Number, Chance and Data, Functions and Equations. Teacher candidates will consider Victorian curriculum documents, lesson planning, effective use of resources (textbooks, technology), assessment and the provision of a balanced curriculum incorporating concepts, skills, applications and problem solving. They will consider strategies for developing school students' understanding of place value, fractions, decimals and percentage which are essential for primary school transition. Teacher candidates will consider important pedagogical issues such as: questioning, selection of good examples, representations and models of mathematical ideas to widen their understanding of what good mathematics teaching should be at years 7-9.
Objectives:	On completion of this subject teacher candidates will be able to: # demonstrate understanding of school students' learning in years 7-9 mathematics; # demonstrate knowledge of the Victorian years 7-9 mathematics curriculum; # demonstrate the ability to plan effective mathematics lessons incorporating good teacher questions and appropriate examples, explanations and tasks; # critically analyse teaching resources; # demonstrate a knowledge of how to assess mathematical understanding.
Assessment:	There are 3 assessment tasks: A report (1500 words equivalent) due early semester (37.5%) A Lesson plan and related pedagogical analysis (1000 words equivalent) due mid semester (25%) A written assignment on diagnosis and remediation of school students' mathematical misconceptions (1500 words) due end of semester (37.5%) There is 1 hurdle requirement: Teacher candidates will be required to demonstrate mastery in a mathematics test at Year

	10 standard (VELS Level 6). They should prepare beforehand by working through current secondary school texts.
Prescribed Texts:	Teacher candidates will require a graphics calculator or CAS calculator. De Klerk, J. (2007) Illustrated Maths Dictionary (4th edition). Pearson. Goos, M., Stillman, G., Vale, C. (2007) Teaching Secondary School Mathematics: Research and practice for the 21st century. Unwin & Allen.
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)