EDUC90617 Mathematics: Quality Teaching

Credit Points:	12.50
Level:	9 (Graduate/Postgraduate)
Dates & Locations:	2012, Parkville This subject commences in the following study period/s: February, Parkville - Taught on campus.
Time Commitment:	Contact Hours: 24 hours. Total Time Commitment: 25 hours. 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.
Prerequisites:	None
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 Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Description, Subject Objectives, Generic Skills and Assessment Requirements of this entry. The University is dedicated to provide support to those with special requirements. Further details on the disability support scheme can be found at the HDisability Liaison Unit websiteH: Hhttp:// www.services.unimelb.edu.au/disability/H
Contact:	Education Student Centre
Subject Overview:	This subject will address quality teaching in mathematics from theoretical, empirical and practical perspectives. It will also address theory, research and practice with respect to the development of quality mathematics teachers. Topics will include: # Theories of teaching and learning to understand and develop strategies for quality teaching in mathematics. Comparison will be made between socio-constructivist approaches and alternatives such as activity theory, variation theory, and the theory of didactical situations in mathematics. # Research into quality mathematics teaching, including large and small local and international studies of good teaching practice such as TIMSS Video Studies and the Learner's Perspective Study. # Research into the knowledge needed for quality mathematics teaching – particularly the wide variety of studies into pedagogical content knowledge of mathematics teachers. # Standards of quality mathematics teaching – examining international and local attempts to establish criteria for quality teaching of mathematics and to implement these as standards for the mathematics teaching profession. # Quality practice in the mathematics classroom – practical activities that exemplify instructional practices advocated on the basis of either theory, empirical research or agreed standards will be demonstrated and critiqued. # International and local initiatives and programs designed to promote the development of quality mathematics teachers.
Objectives:	Students completing this course: # should be able to demonstrate a knowledge of current theory and research regarding knowledge required for teaching mathematics; # should be able to demonstrate a knowledge of theories of learning and instruction relevant to the teaching of mathematics; # should be able to demonstrate familiarity with local and international research into mathematics teaching; # should be able to demonstrate familiarity with national and international attempts to develop standards for mathematics teaching, the premises upon which these standards are based, and the issues associated with the promotion of quality teaching using standards; # should be able to describe classroom activities and teaching actions that illustrate different aspects of quality mathematics teaching;

	# should be able to demonstrate familiarity with a variety of approaches to teacher professional development and discuss, in an informed manner, the relative merits of these approaches for the promotion of quality mathematics teaching.
Assessment:	There are two assessment components:1. A practical demonstration and brief presentation lasting 20 minutes.Each student will present a classroom activity that illustrates some aspect of quality teaching in mathematics. Presentation of the activity should take 10 minutes. The presentation will be supported by a one-page document outlining the purpose and conduct of the activity and a brief justification of its use in quality mathematics teaching (supported by appropriate references). This will be followed by a 10 minute oral presentation justifying the choice of activity and explaining why its use in the form described would be considered quality mathematics teaching. During this presentation, other students and the lecturer may ask the presenting student to address particular concerns or provide additional information. (Due during the semester, 20 per cent)2. A theoretical paper of 4000 words (due at the end of semester, 80 per cent), exploring one of the following.• One aspect of quality mathematics teaching (eg teacher questioning). The paper should report both theory and research related to the chosen aspect and conclude with guidelines for the optimal performance of the chosen aspect or with criteria which such that aspect of quality mathematics teaching might be recognised and evaluated.OR• One issue related to quality mathematics teaching (eg National Standards for Mathematics Teaching, the role of a National Curriculum, optimal professional development to promote quality mathematics teaching). The paper should explain and justify the choice of issue in terms of its significance for quality mathematics teaching, report theory and research relevant to the issue, and conclude with a clearly stated position regarding the issue and recommendations connecting the issue to the promotion of quality mathematics teaching.
Prescribed Texts:	None
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:	Students completing this course should be able to: # demonstrate a superior knowledge and understanding of educational theory and practice in general and in a specialised area in particular; # express informed opinions about particular areas of current educational interest; # have an understanding of the theory and practice of educational research needed to evaluate research literature and carry out appropriate research activity; # make effective use of the findings of educational writings and research in addressing professional problems; # have the depth of knowledge and understanding that will enable them to be a resource for colleagues in particular professional situations; # demonstrate an appreciation of professional responsibilities and ethical principles which should characterise leaders in the education profession.
Related Course(s):	Master of Education (Stream 100B)Coursework Master of Education (Stream 150)