

## EDUC90865 Maths: Understanding & Fluency (11-12)

<b>Credit Points:</b>	12.5
<b>Level:</b>	9 (Graduate/Postgraduate)
<b>Dates &amp; Locations:</b>	2016, Parkville This subject commences in the following study period/s: Semester 1, Parkville - Taught on campus.
<b>Time Commitment:</b>	Contact Hours: 24 hours Total Time Commitment: 170 hours
<b>Prerequisites:</b>	To enrol in this subject, you must be admitted in Professional Certificate in Mathematics Education. This subject is not available for students admitted in any other courses.
<b>Corequisites:</b>	None
<b>Recommended Background Knowledge:</b>	Qualified primary teacher Mathematics content up to Year 12 level, or equivalent
<b>Non Allowed Subjects:</b>	None
<b>Core Participation Requirements:</b>	For the purposes of considering requests for Reasonable Adjustments under the Disability Standards for Education (Commonwealth 2005), and Students Experiencing Academic Disadvantage Policy, academic requirements for this subject are articulated in the Subject Overview, Objectives, 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 course are encouraged to discuss this matter with the Student Equity and Disability Support Team: <a href="http://www.services.unimelb.edu.au/disability/">http://www.services.unimelb.edu.au/disability/</a>
<b>Coordinator:</b>	Dr Vicki Steinle
<b>Contact:</b>	School of Melbourne Custom Programs TL-postgrad@unimelb.edu.au
<b>Subject Overview:</b>	This subject explores the pedagogical content knowledge for teaching Years 11 and 12 mathematics to develop students' procedural fluency and conceptual understanding.  Participants will study research on issues associated with teaching and learning senior mathematics. They will also consider important pedagogical issues such as teacher questioning, selection of good examples and explanations, effective use of resources (e.g. technology and models) and formative assessment.  Links will be made between research into the teaching and learning of mathematics, and classroom practice.
<b>Learning Outcomes:</b>	At the completion of this subject, students should be able to <ul style="list-style-type: none"> <li># identify pedagogical issues related to the teaching and learning of Years 11-12 mathematics</li> <li># identify conceptual hurdles in Years 11-12 mathematics and the importance of formative assessment for diagnosing students' understanding and skills in order to inform teaching</li> <li># design teaching to promote deep mathematical understanding and challenge all students</li> <li># understand how the mathematical proficiencies of understanding and fluency may be developed in Years 11-12 mathematics</li> <li># critique Years 11-12 mathematics teaching resources in the light of research evidence</li> <li># choose and use technology appropriately and efficiently in mathematics teaching,</li> <li># develop students' use of rigorous and mathematically correct language.</li> </ul>

<b>Assessment:</b>	Evaluating a School-Assessed Coursework Task (or equivalent task designed for Years 11-12 mathematics) – 2500 words - due mid teaching period - 50% Essay on implications of research for teaching Year 11 – 12 mathematics (2500 words) - due at the end of the teaching period - 50% Hurdle requirements: Participation in intensives, completion of all online tasks (including contribution to wikis, online discussion forums)
<b>Prescribed Texts:</b>	Nil
<b>Breadth Options:</b>	This subject is not available as a breadth subject.
<b>Fees Information:</b>	Subject EFTSL, Level, Discipline & Census Date, <a href="http://enrolment.unimelb.edu.au/fees">http://enrolment.unimelb.edu.au/fees</a>
<b>Generic Skills:</b>	<p>Graduates will develop the following generic skills:</p> <ul style="list-style-type: none"> <li># Be flexible and able to adapt to change through knowing how to learn</li> <li># Understand the significance of developing their practice on the basis of research evidence</li> <li># Be skilled communicators who can effectively articulate and justify their practices as knowledgeable agents of change</li> <li># Work in teams with skills in cooperation, communication and negotiation</li> </ul>
<b>Links to further information:</b>	<a href="http://www.commercial.unimelb.edu.au/courses">http://www.commercial.unimelb.edu.au/courses</a>
<b>Related Course(s):</b>	Professional Certificate in Mathematics Education (Years 11-12)