2016 Approved MATHEMATICS Courses for Tertiary Fees Funding Support for Primary and Intermediate Teachers

University of Waikato

Title	TEMS324-16C (BLK) **Numeracy in the Classroom (20 points)**
Description	This paper focuses on international mathematics education reform approaches to the teaching of mathematics/numeracy. It provides a critical analysis of theoretical issues underpinning the teaching and learning of mathematics, and makes connections between the current curriculum document, the mathematics standards, and the New Zealand Number Framework. Themes include assessment, quality teaching in mathematics, progressions in children's mathematics learning, and theoretical frameworks underpinning this learning.
Delivery for 2016	On campus block periods in Hamilton, Saturdays 9am – 3pm: dates TBC, and supported online.
Contact	Associate Professor Dr Jenny Young-Loveridge educ2233@waikato.ac.nz Judith Mills, (07) 8384466 x 8754, TL1.01, judith@waikato.ac.nz

Title	TEMS324-16C (HAM) **Numeracy in the Classroom (20 points)**
Description	This paper focuses on international mathematics education reform approaches to the teaching of mathematics/numeracy. It provides a critical analysis of theoretical issues underpinning the teaching and learning of mathematics, and makes connections between the current curriculum document, the mathematics standards, and the New Zealand Number Framework. Themes include assessment, quality teaching in mathematics, progressions in children's mathematics learning, and theoretical frameworks underpinning this learning.
Delivery for 2016	Wednesdays 2-6pm: dates TBC
Contact	Judith Mills, (07) 8384466 x 8754, judith@waikato.ac.nz

Title	TEMS324-16C (TGA) **Numeracy in the Classroom (20 points)**
Description	This paper focuses on international mathematics education reform approaches to the teaching of mathematics/numeracy. It provides a critical analysis of theoretical issues underpinning the teaching and learning of mathematics, and makes connections between the current curriculum document, the mathematics standards, and the New Zealand Number Framework. Themes include assessment, quality teaching in mathematics, progressions in children's mathematics learning, and theoretical frameworks underpinning this learning.
Delivery for 2016	Fridays 9am-1pm: dates TBC
Contact	Judith Mills, (07) 8384466 x 8754, judith@waikato.ac.nz

Title	**MSTE340-16C (BLK)**
	Numeracy Difficulties: Diagnosis and Remediation (20 points)
Description	This paper is for numeracy educators and those working with learners of all ages experiencing difficulties in numeracy/mathematics. The paper critically examines research and theory on the causes of these difficulties, as well as focusing on the assessment, diagnosis and remediation.
Delivery for 2016	On-campus block periods in Hamilton, 9am – 4pm: dates TBC, and partially online.
Contact	Associate Professor Dr Jenny Young-Loveridge educ2233@waikato.ac.nz
	Judith Mills, (07) 8384466 x 8754, TL1.01, judith@waikato.ac.nz

Postgraduate Papers in Mathematics Education

Title	**MSTE501-16B (NET)**
	Mathematics Education (30 points)
Description	This paper is designed to enable educators to develop their mathematics teaching with learners of all ages. Teachers will be encouraged to engage critically with theory and research in mathematics education, focusing on issues such as communication, assessment, and catering for diverse learners.
Delivery for 2016	Fully online
Contact	Dr Sashi Sharma (07) 838 4466 x6298 TL4.10 sashi@waikato.ac.nz

Title	**MSTE502- 16A (HAM)**
	Acquiring Numeracy: How Thinking Develops (30 points)
Description	This paper looks at how students' thinking becomes increasingly sophisticated as their mathematical understanding grows. A particular focus of the paper is in the Numeracy Development Projects and the use of diagnostic interviews to explore various aspects of students' mathematical thinking and understanding.
Delivery for 2016	On-campus in Hamilton (Tuesdays 4-7pm from February to June) and partially online.
Contact	Associate Professor Jenny Young-Loveridge (07) 838 4353 TL4.11 educ2233@waikato.ac.nz

Title	**MSTE502-16A (TGA)**
	Acquiring Numeracy: How Thinking Develops (30 points)
Description	This paper looks at how students' thinking becomes increasingly sophisticated as their mathematical understanding grows. A particular focus of the paper is in the Numeracy Development Projects and the use of diagnostic interviews to explore various aspects of students' mathematical thinking and understanding.
Delivery for 2016	On-campus in Tauranga (dates and times TBC) and partially online.
Contact	Dr Nigel Calder, email ncalder@waikato.ac.nz

Title	**MSTE503-16C (BLK)**
	Numeracy in the Classroom: Issues & Practice (30 points)
Description	This paper focuses on international mathematics education reform approaches to the teaching of mathematics/numeracy. It provides a critical analysis of theoretical issues underpinning the teaching and learning of mathematics, and makes connections between the current curriculum document, the mathematics standards, and the New Zealand Number Framework. Themes include assessment, quality teaching in mathematics, progressions in children's mathematics learning, and theoretical frameworks underpinning this learning.
Delivery for 2016	On campus block periods in Hamilton, Saturdays 9am – 3pm: dates TBC, and supported online.
Contact	Associate Professor Jenny Young-Loveridge (07) 838 4353 TL4.11 educ2233@waikato.ac.nz
	Judith Mills, (07) 8384466 x 8754, TL1.01, judith@waikato.ac.nz

Title	MSTE504-16C (BLK)
	Numeracy Difficulties: Issues and Practice (30 points)
Description	This paper is for numeracy educators and those working with learners of all ages experiencing difficulties in numeracy/mathematics. The paper critically examines research and theory on the causes of these difficulties, as well as focusing on assessment, diagnosis and remediation.
Delivery for 2016	On-campus block periods in Hamilton, 9am – 4pm: dates TBC, and partially online.
Contact	Associate Professor Jenny Young-Loveridge (07) 838 4353 TL4.11 educ2233@waikato.ac.nz
	Judith Mills, (07) 8384466 x 8754, TL1.01, judith@waikato.ac.nz

Massey University

UNDERGRADUATE PAPERS (15 credits)

Undergraduate papers may be credited towards a Bachelor degree in Education, Arts, or Science, or the Graduate Diploma Teaching.

Title	**254.162 Introduction to Literacy and Numeracy**
	Semester 2 Distance and Internal (Albany Campus)
Description	An introduction to the development of specialised subject content and pedagogical content knowledge for teachers of literacy and numeracy in Aotearoa/new Zealand.
Delivery for 2016	Online. No contact course
Contact	Dr Jodie Hunter J.Hunter1@massey.ac.nz

Title	**160.320 Mathematics in Education**
	Semester 2 Distance
	This paper provides a structure to explore key areas in mathematics education. The core module of the paper is designed to challenge thinking about mathematics and numerical literacy and to enhance understanding about how students learn mathematics. The paper modules provide an opportunity to examine a content area of your choice and to gain greater insight into current issues within mathematics education. You will have an opportunity to formulate and investigate an area relevant to your own teaching.
	As this paper is part of the BSc schedule there is a 200–level mathematics paper as a prerequisite
Delivery for 2016	By Distance. No Contact course.
Contact	Professor Margaret Walshaw M.A.Walshaw@massey.ac.nz

Title	**230.391 Special Topic : Mathematical Inquiry Communities: Raising Student Achievement**
	Double Semester (February-November) Block and Distance
Description	This paper is practically based and examines the components which support diverse learners to engage successfully in mathematics within mathematics inquiry communities.
Delivery for 2016	This paper will be offered in a school in South Auckland, West Auckland, Porirua and Tauranga for teachers located in these areas and by distance for students based elsewhere. Partially taught online.
Contact	Dr Jodie Hunter J.Hunter1@massey.ac.nz

POSTGRADUATE PAPERS (30 credits)

Postgraduate papers may be credited towards a PGCertificate Education, PGDiploma Education (Mathematics Education) or (Undendorsed), or Master of Education (Mathematics Education) or (Unendorsed).

Title	**276.782 Mathematics Education** **Double Semester (February-November) Distance**
Description	This paper examines the role of mathematics—including numeracy and statistical literacy—in our education system and society. The paper includes a critical examination of how learning theories inform pedagogical practices in the mathematics classroom. Research literature on learning mathematical content—number, fractions and decimals, algebra, geometry and measurement, and statistics—and mathematical practices and processes are analysed in relation to pedagogical practices and student learning.
Delivery for 2016	Online. Contact course Waipuna Hotel Auckland, 10-11 April 2016 is recommended.
Contact	Professor Glenda Anthony G.J.Anthony@massey.ac.nz

Title	**276.785 Making Mathematics Accessible** **Double Semester (February-November) Block and Distance**
Description	An in-depth study of the research, theory and evidence-based practices associated with equitable classroom practices that make mathematics accessible for all learners. Focus is on development of communities of inquiry and rich and challenging tasks.
Delivery for 2016	This paper is available for MoE approved Year 1 MST teachers who must attend block courses in March, May and August, and for other teachers who enrol in the Distance offering, with a recommended contact course (Albany campus) in June.
Contact	Professor Glenda Anthony G.J.Anthony@massey.ac.nz

Title	**230.792 Special Topic : Mathematical Inquiry Communities: Raising Student Achievement** **Double Semester (February-November) Block and Distance**
Description	This paper is practically based and examines the components which support diverse learners to engage successfully in mathematics within mathematics inquiry communities.
Delivery for 2016	This paper will be offered in a school in South Auckland, West Auckland, Porirua and Tauranga for teachers located in these areas and by distance for teachers located elsewhere. Partially taught online.
Contact	Dr Roberta Hunter R.Hunter@massey.ac.nz

ENROLMENT: Enrol online at: http://enrol.massey.ac.nz or call 0800 Massey (0800 627 739) to get your enrolment started.

The University of Auckland

Title	**EDCURRIC 349 A/B** **Understanding and extending mathematical thinking (15 Points)**
Description	This course simultaneously deals with teachers' personal mathematical subject knowledge and the implications for teaching from year one to year eight. Teachers will develop a thorough knowledge of the different strategies children use to solve number problems, and understand why the most efficient strategy to use is dependent on the nature of the problem. Assessing children on aspects of the mathematical content is a feature of this course.
Delivery	Semester 1 and 2. (Flexi delivery is available nationwide.)
Contact	Gail Ledger; g.ledger@auckland.ac.nz

Title	**EDCURRIC 350** **Using Investigative Approaches (15 Points)**
Description	This course provides an opportunity to improve your teaching, deliver key competencies in Mathematics, get purposeful group work started, all while learning more about mathematics yourself. Sessions will be hands-on and practical, with much content knowledge and basic fact coverage. This course will allow an examination of investigative approaches to the teaching and learning of mathematics within the context of problem solving.
Delivery	Summer School (Epsom Campus) Semester 1 and 2 (School based Delivery -Auckland School)
	Notes: These four Faculty of Education courses are at year 3 undergraduate level. They can be credited to a Bachelor of Education (Tchg) upgrade or a Graduate Diploma of Education.
Contact	Gill Frankcom Burgess; g.frankcom@auckland.ac.nz

Title	**EDCURRIC 369 A/B – Understanding Difficulties in Number Learning**
Description	This course explores ways to gather and analyse assessment information to identify and support students who are achieving below expectation in mathematics. Approaches for the diagnostic and responsive teaching of these students will be explored. Developing and implementing teaching plans, in relation to the resulting diagnostic information, is a feature of this course.
Delivery	Flexi delivery
Contact	Gail Ledger; g.ledger@auckland.ac.nz

Post Graduate level courses

Title	**EDCURRIC 714 A/B (previously taught as EDPROFST 784A/B)** **Exploring mathematical thinking (30 points)**
Description	This course provides an opportunity for teachers to improve their personal mathematical subject knowledge. The critique of historical number systems is used to illuminate theoretical issues, and inform teachers of their personal understanding of the modern decimal place value number system. This course provides a supportive entry to post graduate study as significant levels of scaffolding for working and writing at post graduate level is provided.
Delivery	Semester 1 and 2. (Epsom Campus)
Contact	Gail Ledger; g.ledger@auckland.ac.nz

Title	EDCURRIC 715 A/B – Understanding and Extending Mathematical Thinking
Description	This course critically examines how conceptual number learning is developed. The key difficulties in learning number concepts and generalisations are considered from a psychological perspective. Attention to the knowledge children need to have available by instant recall and the relationship between the learning and application of mathematical knowledge is a feature.
Delivery	Semester 1 and 2
Contact	Gail Ledger; g.ledger@auckland.ac.nz

Title	EDPROFST 787 – Understanding and Extending Mathematical Thinking
Description	A critical examination of current issues relating to Mathematics and Statistical learning and teaching in New Zealand educational contexts. Research findings will be analysed and synthesised to understand problems of practice in mathematics education.
Delivery	Semester 2
Contact	Fiona Ell; f.ell@auckland.ac.nz

The following courses are available in 2016 from the Mathematics Education Unit in the Departments of Mathematics and Statistics of The University of Auckland for teachers of mathematics as part of an MProfStuds, MEd, MA or MSc degree programme.

Note that the Tertiary Fees Funding Support scheme is only available to primary and intermediate teachers who enrol in these courses.

Title	MATHS 701 – Research Skills in Mathematics Education
Description	Prepares students for postgraduate study in mathematics and statistics education. Its emphasis is on workshops in the key research skills required by students working at this level. It will cover a range of research issues and techniques.

Title	MATHS 706 – Technology and Mathematics Education
Description	Practical and theoretical perspectives on ways that technology, especially calculators and computers, can enhance teaching at senior secondary and university levels, with a particular focus on calculus. Identification of affordances, constraints and obstacles in the use of technology. Consideration of issues of teacher and lecturer development in implementation of technology.
Title	MATHS 707 – Special Topic in Mathematics Education
Description	In 2015, this course will be in Problem Solving. Students will investigate the way they solve problems themselves, and compare their techniques with those of mathematicians and theoretical approaches in the literature.

Title	STATS 708 Topics in Statistical Education
Description	Covers a wide range of research in statistics education at the school and tertiary level. There will be a consideration of, and an examination of, the issues involved in statistics education in the curriculum, teaching, learning, technology and assessment areas.

In addition, for the MProfStuds (Mathematics Education) programme, the following courses are available as part of the Research Portfolio:

Title	MATHS 792 – Research in Mathematics Education
Description	A portfolio of research work that will include a Research Case Study of a mathematics learner or teacher, a literature investigation and a research proposal for a larger study.

Title	MATHS 797A/B – Advanced Research in Mathematics Education
Description	A significant research project on some aspect of learning or teaching mathematics, including a substantive research report, including, or alongside other relevant documents such as Ethics applications, literature reviews, methodological surveys, papers for conference presentation or publication and presentation slides.

Victoria University

Title	EPOL 510 – Advanced Mathematics Teaching and Learning
Description	This course examines research-informed approaches to mathematics teaching and learning. Participants will scrutinise specific aspects of mathematical pedagogical content knowledge together with culturally responsive teaching approaches, towards understanding ways to enhance the mathematical achievement of all students. They will be able to contextualise key course understandings to their own work.

Contact:
Postgraduate Office, Faculty of Education, Victoria University of Wellington, Email:
education@vuw.ac.nz

University of Canterbury

Title	EDEM609 - Contemporary Issues in Mathematics Education
Description	This course identifies current issues and debates related to the learning and teaching of mathematics and statistics in New Zealand educational contexts, and of interest to practitioners in centres or schools. Based on these issues, research literature and other resources are critically examined and related to local, national and international contexts relevant to mathematics education. Students are encouraged to develop critical perspectives about current teaching practices such as pedagogical frameworks, mathematical models and representations and other practices related to the teaching and learning of mathematics and statistics.
Delivery for 2016	Flexible delivery