



Course Outline (Higher Education)

School:	School of Education
Course Title:	MATHEMATICS, NUMERACY AND LEARNER ENGAGEMENT 1
Course ID:	EDMAS6039
Credit Points:	15.00
Prerequisite(s):	Nil
Co-requisite(s):	Nil
Exclusion(s):	(EDFGC5713)
ASCED:	070103

Description of the Course:

This course is designed to engage students in critical readings on current research and practice in numeracy education, and practical learning strategies so they can implement effective student learning in different mathematical topics. There is an emphasis on students interrogating their understanding and honing their skills in facilitating children`s learning in a variety of sociocultural and educational contexts. Students use and apply learning technologies that cater for diverse learners, and mixed abilities. These activities are informed by current educational policy and curriculum, both locally and internationally. Pre-service teachers will develop skills in academic and personal communication, self-reflection, personal learning, delivering and responding to peer feedback

Grade Scheme: Graded (HD, D, C, P, MF, F, XF)

Program Level:

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Introductory	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	✓	<input type="checkbox"/>
Intermediate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Advanced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Learning Outcomes:

Knowledge:

K1. Explore theories about how other people construe and learn mathematics

- K2.** Examine a broad range of theories and approaches relating to the learning and teaching of mathematics and related issues
- K3.** Compare a range of theories and approaches relating to the learning and teaching of mathematics and related issues
- K4.** Explore the content associated with teaching mathematics to primary students.

Skills:

- S1.** Develop skills relating to the teaching and learning of mathematics
- S2.** Reflect on the processes associated with the teaching and learning of mathematics
- S3.** Develop skills in their own personal mathematical competence.
- S4.** Critically and creatively interpret the content, processes and standards presented in current mathematics curriculum documents
- S5.** Develop assessment strategies as a basis for evaluation and informing future planning

Application of knowledge and skills:

- A1.** Develop lesson plans that cater for students at specific levels of Primary Mathematics Education
- A2.** Apply research and contemporary practices in mathematics and numeracy education to meet diverse learners` needs
- A3.** Identify and employ a range of ICT tools and strategies to support children's learning in mathematics and numeracy in line with local and Australian curriculum.

Course Content:

Topics may include:

- Knowledge and understanding of the concepts related to number and numeracy; measurement and estimation, space and location, mathematical modelling, reasoning and strategies, mathematical ways of thinking, the nature of proof, and functions and graphs
- Language of mathematics and mathematical language reading, writing and speaking mathematics
- Know and understand literacy and numeracy teaching strategies and their application to teaching mathematics
- Organise content into effective learning and teaching sequences
- Use curriculum, assessment and reporting knowledge to design learning sequences and lesson plans in mathematics
- Understand how students learn with reference to research and education theory, and the implications to teaching
- Further examination of strategies for teaching mathematics, the methods of planning and evaluation
- Engagement with the profession, identification and development of professional practice
- Learning in an academic community

Values:

- V1.** Develop an appreciation of their role as a teacher of mathematics
- V2.** Develop confidence and positive attitudes associated with the learning and teaching of mathematics
- V3.** To enjoy mathematics

Graduate Attributes

The Federation University FedUni graduate attributes (GA) are entrenched in the [Higher Education Graduate Attributes Policy](#) (LT1228). FedUni graduates develop these graduate attributes through their engagement in explicit learning and teaching and assessment tasks that are embedded in all FedUni programs. Graduate

attribute attainment typically follows an incremental development process mapped through program progression. **One or more graduate attributes must be evident in the specified learning outcomes and assessment for each FedUni course, and all attributes must be directly assessed in each program**

Graduate attribute and descriptor		Development and acquisition of GAs in the course	
		Learning Outcomes (KSA)	Assessment task (AT#)
GA 1 Thinkers	Our graduates are curious, reflective and critical. Able to analyse the world in a way that generates valued insights, they are change makers seeking and creating new solutions.	K1; K2; K3; S2; S4;	AT1, AT2, AT3
GA 2 Innovators	Our graduates have ideas and are able to realise their dreams. They think and act creatively to achieve and inspire positive change.	S4; S5; A1; A2; A3	AT2
GA 3 Citizens	Our graduates engage in socially and culturally appropriate ways to advance individual, community and global well-being. They are socially and environmentally aware, acting ethically, equitably and compassionately.	A2	AT1
GA 4 Communicators	Our graduates create, exchange, impart and convey information, ideas, and concepts effectively. They are respectful, inclusive and empathetic towards their audience, and express thoughts, feelings and information in ways that help others to understand.	S4; S5	AT1, AT2, AT3
GA 5 Leaders	Our graduates display and promote positive behaviours, and aspire to make a difference. They act with integrity, are receptive to alternatives and foster sustainable and resilient practices.	A2; A3	AT1

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1, K2, K3, S1, S2, S3, S4, S5, A2, A3 APST 1.2, 1.5, 2.5	A series of reflective pieces of academic writing. Critical reflective analysis pieces responding to current issues in mathematics education, relating these back to personal learning, educational policy and research.	Journal	40-60%
K1, K2, K3, S1, S2, S3, S4, A1, A2, A3 APST 1.5, 2.1, 2.2, 2.3	Design a learning sequence and lesson plans for students in line with current mathematics curriculum. Reflect on planned activities and how they link with the learning and teaching theory delivered in the course.	Teaching Activity & Reflection	40-60%
K4 S1, S2, S3, A3 APST 2.1, 2.6, 4.5	Digital technology evaluation task	Hurdle task	S/N

Adopted Reference Style:

APA

Refer to the [library website](#) for more information

Fed Cite - [referencing tool](#)

Professional Standards / Competencies:
Australian Professional Standards for Teachers (AITSL) - Graduate Teacher: Initial

Attribute	Assessed	Level
Professional Knowledge		
1. Know students and how they learn		
1.2 Understand how students learn Demonstrate knowledge and understanding of research into how students learn and the implications for teaching.	Yes	Introductory
1.5 Differentiate teaching to meet the specific learning needs of students across the full range of abilities Demonstrate knowledge and understanding of strategies for differentiating teaching to meet the specific learning needs of students across the full range of abilities.	Yes	Introductory
2. Know the content and how to teach it		
2.1 Content and teaching strategies of the teaching area Demonstrate knowledge and understanding of the concepts, substance and structure of the content and teaching strategies of the teaching area.	Yes	Introductory
2.2 Content selection and organisation Organise content into an effective learning and teaching sequence.	Yes	Introductory
2.3 Curriculum, assessment and reporting Use curriculum, assessment and reporting knowledge to design learning sequences and lesson plans.	Yes	Introductory
2.5 Literacy and numeracy strategies Know and understand literacy and numeracy teaching strategies and their application in teaching areas.	Yes	Introductory
2.6 Information and Communication Technology (ICT) Implement teaching strategies for using ICT to expand curriculum learning opportunities for students.	Yes	Introductory
Professional Practice		
4. Create and maintain supportive and safe learning environments		
4.5 Use ICT safely, responsibly and ethically Demonstrate an understanding of the relevant issues and the strategies available to support the safe, responsible and ethical use of ICT in learning and teaching.	Yes	Introductory