



Course Outline (Higher Education)

School:	School of Education
Course Title:	MATHEMATICS, NUMERACY AND LEARNER ENGAGEMENT 2
Course ID:	EDMAS6042
Credit Points:	15.00
Prerequisite(s):	(EDMAS6039)
Co-requisite(s):	Nil
Exclusion(s):	(EDFGC5714)
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"/>	<input type="checkbox"/>
Intermediate	<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:

On successful completion of the course pre-service teachers will demonstrate their capacity to:

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.** Apply and integrate of technology in mathematical investigations and presentations.
- K4.** Examine the literacies (including vocabularies) and numeracies specific to Mathematics so that they can be used competently and explicitly taught.

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 pedagogical tools and strategies to support children`s learning in mathematics and numeracy in line with local and Australian curriculum.

Course Content:

Topics to be covered

- 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;
- Select and use resources for mathematics teaching and learning;
- 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 of this for teaching;
- Assessment strategies, including formative and summative approaches to assess student learning.
- Further examination of strategies for teaching mathematics, the methods of planning and evaluation;
- Plan and reflect on strategies to differentiate teaching to cater for a full range of abilities, including diverse backgrounds;
- Implement teaching and learning strategies that incorporate the use of ICT into the mathematics curriculum;
- Use ICT safely, responsibly and ethically;
- 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.	S5 A1	AT1
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, A2	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.	K1, A1	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.	K2, S2, A2	AT2
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.	K4, A3	AT2

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1, K2, K3, S1, S2, S3, S4, S5, A1, A2, A3 APST: 1.2, 1.5, 2.5	Research task: Research and develop a report and presentation on a topic related meeting the specific learning needs of students across the full range of abilities.	Research report and Presentation	40-60%
K1, K2, K3, K4, S1, S2, S3, S4, A1, A2, A3 APST: 1.2, 1.5, 2.1, 2.2, 2.3, 2.5, 3.2, 3.4, 5.1, 5.3	Teaching Activity: Assess student understandings in mathematics, by formative approaches, to then analyse and plan learning activities for students in line with current curriculum to cater for a range of abilities	Teaching Activity	40-60%
	LANTITE Literacy Test (external)	Hurdle	S/UN
	LANTITE Test Numeracy (external)	Hurdle	S/UN

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	Intermediate
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	Intermediate
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	Intermediate
2.2 Content selection and organisation Organise content into an effective learning and teaching sequence.	Yes	Intermediate
2.3 Curriculum, assessment and reporting Use curriculum, assessment and reporting knowledge to design learning sequences and lesson plans.	Yes	Intermediate
2.5 Literacy and numeracy strategies Know and understand literacy and numeracy teaching strategies and their application in teaching areas.	Yes	Intermediate
2.6 Information and Communication Technology (ICT) Implement teaching strategies for using ICT to expand curriculum learning opportunities for students.	Yes	Intermediate
Professional Practice		
3. Plan for and implement effective teaching and learning		
3.2 Plan, structure and sequence learning programs Plan lesson sequences using knowledge of student learning, content and effective teaching strategies.	Yes	Intermediate
3.4 Select and use resources Demonstrate knowledge of a range of resources, including ICT, that engage students in their learning.	Yes	Intermediate

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

Intermediate

5. Assess, provide feedback and report on student learning

5.1 Assess student learning

Demonstrate understanding of assessment strategies, including informal and formal, diagnostic, formative and summative approaches to assess student learning.

Yes

Intermediate

5.3 Make consistent and comparable judgements

Demonstrate understanding of assessment moderation and its application to support consistent and comparable judgements of student learning.

Yes

Intermediate