Unit Outline (Higher Education)

Institute / School:	Institute of Education, Arts & Community
Unit Title:	LEARNING AND TEACHING MATHEMATICS B
Unit ID:	EDBED3112
Credit Points:	15.00
Prerequisite(s):	(EDBED1006 or EDBED1012 or EDFGC2021)
Co-requisite(s):	Nil
Exclusion(s):	(EDFGC3021) (EDBED3106)
ASCED:	070103

Description of the Unit:

This course focuses on building personal competence in mathematics learning and teaching so that students increase their conceptual understanding of content. Students will examine the connections between theory and practice; consider the role of reflection in and on learning and be proficient in developing mathematical teaching experiences that enhance student learning. Students will gain an understanding of the significance of self-reflection and the value of lifelong learning.

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

Work Experience:

No work experience: Student is not undertaking work experience in industry.

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the Unit but gained a final mark of 45 per cent or above, has completed all major assessment tasks (including all sub-components where a task has multiple parts) as specified in the Unit Description and is not eligible for any other form of supplementary assessment.

Course Level:

Level of Unit in Course	AQF Level of Course					
	5	**6**	**7**	**8**	**9**	**10**
Introductory						
Intermediate						
Advanced			✔			

Learning Outcomes:

Knowledge:

K1. Examine and review theories and approaches related to the learning and teaching of mathematics

K2. Develop research and critical reflective skills associated with mathematics learning and teaching

K3. Understand contemporary issues and approaches related to mathematics learning and teaching

K4. Develop personal numeracy knowledge, competencies and demonstrate confidence

K5. Resource professional mathematics associations and professional development courses

Skills:

S1. Develop personal numeracy skills and competencies

S2. Critically and creatively interpret the content, processes, and standards presented in a range of mathematics curriculum documents

S3. Develop assessment strategies as a basis for learning, teaching and evaluation and for informing future planning and teaching

S4. Examine and explore the application of technology in mathematical environments, investigations and presentations

S5. Engage in Roundtable Reflective Inquiry

S6. Identify, examine and challenge underlying assumptions about learning and teaching mathematics

S7. Development mathematical understanding through links with professional development associations

S8. Manage classroom activities, including the capacity to provide clear directions

Application of knowledge and skills:

A1. Develop a deep understanding of the impact of theory on practice through planning, teaching, evaluating and reflecting on teaching sessions

A2. Develop content knowledge related to mathematical skills and concepts and be proficient and confident when teaching

A3. Understand the role of reflection in learning and teaching mathematics and become critically reflective practitioners and thinkers

A4. Present knowledge and experience of professional mathematical associations to peers and identify the impact of these on PSTs and student learning of mathematics.

Unit Content:

- Current approaches to learning and teaching mathematics in diverse educational environments
- Issues related to the contemporary teaching and learning of mathematics
- Teaching and learning strategies associated with the Early Years/Primary Years of Schooling
- Planning, programming, assessment, reporting and their interconnections
- The use and integration of Information and Communication Technologies in Mathematics Education
- Studies related for example to number, algebra, chance and data, which will be approached as a P-6 progression

- Analysis of Curriculum as a guide for organising the scope, sequence and connectedness of lesson, unit and curriculum plans for P-6 mathematics
- Engage with professional mathematics learning communities to improve practice

FEDTASKS

Federation University Federation recognises that students require key transferable employability skills to prepare them for their future workplace and society. FEDTASKS (**T**ransferable **A**ttributes **S**kills and **K**nowledge) provide a targeted focus on five key transferable Attributes, Skills, and Knowledge that are be embedded within curriculum, developed gradually towards successful measures and interlinked with cross-discipline and Co-operative Learning opportunities. *One or more FEDTASK, transferable Attributes, Skills or Knowledge must be evident in the specified learning outcomes and assessment for each FedUni Unit, and all must be directly assessed in each Course.*

FEDTASK attribute and descriptor		Development and acquisition of FEDTASKS in the Unit	
		Learning Outcomes (KSA)	Assessment task (AT#)
FEDTASK 1 Interpersonal	Students will demonstrate the ability to effectively communicate, interact and work with others both individually and in groups. Students will be required to display skills in-person and/or online in: • Using effective verbal and non-verbal communication • Listening for meaning and influencing via active listening • Showing empathy for others • Negotiating and demonstrating conflict resolution skills • Working respectfully in cross-cultural and diverse teams.	K2, S5, S8, A3, A4	AT1
FEDTASK 2 Leadership	Students will demonstrate the ability to apply professional skills and behaviours in leading others. Students will be required to display skills in: • Creating a collegial environment • Showing self -awareness and the ability to self-reflect • Inspiring and convincing others • Making informed decisions • Displaying initiative	S5, S8	AT1, AT2
FEDTASK 3 Critical Thinking and Creativity	Students will demonstrate an ability to work in complexity and ambiguity using the imagination to create new ideas. Students will be required to display skills in: • Reflecting critically • Evaluating ideas, concepts and information • Considering alternative perspectives to refine ideas • Challenging conventional thinking to clarify concepts • Forming creative solutions in problem solving	K2, K3, S2, S6, A1, A3	AT1, AT2
FEDTASK 4 Digital Literacy	Students will demonstrate the ability to work fluently across a range of tools, platforms and applications to achieve a range of tasks. Students will be required to display skills in: • Finding, evaluating, managing, curating, organising and sharing digital information • Collating, managing, accessing and using digital data securely • Receiving and responding to messages in a range of digital media • Contributing actively to digital teams and working groups • Participating in and benefiting from digital learning opportunities	S4	AT1, AT2

FEDTASK attribute and descriptor		Development and acquisition of FEDTASKS in the Unit	
		Learning Outcomes (KSA)	Assessment task (AT#)
FEDTASK 5 Sustainable and Ethical Mindset	Students will demonstrate the ability to consider and assess the consequences and impact of ideas and actions in enacting ethical and sustainable decisions. Students will be required to display skills in: • Making informed judgments that consider the impact of devising solutions in global economic environmental and societal contexts • Committing to social responsibility as a professional and a citizen • Evaluating ethical, socially responsible and/or sustainable challenges and generating and articulating responses • Embracing lifelong, life-wide and life-deep learning to be open to diverse others • Implementing required actions to foster sustainability in their professional and personal life.	S7, A4	AT2

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1 K2 K3 K4 S1 S2 S4, S5,S8, A1. APST 1.5, 2.1 2.2, 2.5, 3.3, 3.4, 4.2, 4.5	Peer teaching of a content area related to teaching and learning mathematics while addressing contemporary issues. Teach a topic associated with the learning and teaching of mathematics relevant for junior primary, middle primary and upper primary	Peer teaching and feedback (oral/written)	40-60%
K1 K2,K5 S1 S2 S3 S6, S7 A1 A2 A3 A4 APST 1.5, 2.1 2.2, 2.3, 2.5, 3.1, 3.2, 3.4 6.2	A portfolio of critical reflections of mathematics educations issues, a statement of philosophy, and a detailed description of a sequence of three lessons. This will include links to curriculum; suggestions to differentiate for a range of students; feedback strategies; links to professional development; reference to a selection of journal articles related to content topic and research based identification of conceptions/misconceptions.	Portfolio	40 - 60%
S1 APST 2.5	Complete Numeracy skills test	Hurdle	S/U

Alignment to the Minimum Co-Operative Standards (MiCS)

The Minimum Co-Operative Standards (MiCS) are an integral part of the Co-Operative University Model. Seven criteria inform the MiCS alignment at a Course level. Although Units must undertake MiCS mapping, there is NO expectation that Units will meet all seven criteria. The criteria are as follows:

1. Co-design with industry and students
2. Co-develop with industry and students
3. Co-deliver with industry
4. FedTASK alignment
5. Workplace learning and career preparation
6. Authentic assessment
7. Industry-link/Industry facing experience

MiCS Course level reporting highlights how each Course embraces the principles and practices associated with the Co-Operative Model. Evidence of Course alignment with the MiCS, can be captured in the Course Modification Form.

MICS Mapping has been undertaken for this Unit   No

Date:

Adopted Reference Style:

APA

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

Fed Cite - [referencing tool](#)