Course Outline (Higher Education)

School: School of Education

Course Title: LEARNING AND TEACHING MATHEMATICS A

Course ID: EDBED1012

Credit Points: 15.00

Prerequisite(s): Nil

Co-requisite(s): Nil

Exclusion(s): (EDBED1006 and EDFGC2021)

ASCED: 070103

Description of the Course :

This course extends understandings about how mathematical understanding and thinking skills are developed through early Childhood and as children transition to school. It incorporates a focus on the students themselves as learners of mathematics and mathematical practices, and highlights how mathematics teaching and mathematical activities develop learning. This course considers ways in which people use mathematics to solve real world problems and how to link mathematics to the learners everyday life. It examines a range of teaching strategies and investigates current curricula documents and the sequential nature of learning.

Grade Scheme: Graded (HD, D, C, etc.)

Work Experience:

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

Placement Component: No

Program Level:

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Introductory						
Intermediate			✔			
Advanced						

Learning Outcomes:

Knowledge:

K1. Understand the concepts, substance and structure of the content and effective teaching strategies for Mathematics at a primary level.

K2. Evaluate theories about how other people construe and learn mathematics.

K3. Compare a range of theories and approaches relating to the learning and teaching of mathematics and related issues.

K4. Experiment with the application and integration of technology in mathematical investigations and presentations.

Skills:

S1. Construct skills relevant to the teaching and learning of mathematics.

S2. Use the current policy documents as a guide to develop curriculum.

S3. Reflect on the thinking processes associated with the teaching and learning of Mathematics.

S4. Incorporate appropriate technology in the learning of Mathematics.

S5. Develop assessment strategies as a basis for evaluation and informing future planning

S6. Utlilise simple coding language to instruct a computer application or device to perform certain functions.

Application of knowledge and skills:

A1. Develop a lesson sequence that includes a range of learning activities.

A2. Design Â sequential lesson plans Â that incorporate the use of technology.

A3. Examine assessment techniques in mathematics with reference to contemporary research.

A4. Accurately assess a student work sample, give appropriate feedback and determine the next level of learning for that student.

Course Content:

Topics to be covered

- Studies related to numeracy; number and algebra, measurement and geometry, statistics and probability; problem solving and mathematical modelling, mathematical thinking and reasoning;
- Engagement techniques in primary mathematics.
- Linking mathematics curriculum content to mathematical activities.
- Making links to previous mathematical knowledge.
- Designing learning activities and sequences in mathematics.
- Language of mathematics and mathematical language reading, writing and speaking mathematics;
- Examining real world contexts for mathematics.
- Organising mathematics content into effective learning sequences.
- Development of ICT activities, including coding, that support the learning of mathematics.
- Effective assessment that guides learning and informs future learning.
- The use of formative and summative assessment in mathematics.
- Planning, programming, assessment and reporting and their interconnections in mathematics in the primary school setting;

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 teaching and learning 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)	**Code** A. Direct B. Indirect N/A Not addressed	**Assessment task (AT#)**	**Code** A. Certain B. Likely C. Possible N/A Not likely
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; S1; A1; A2; A3	A	AT1; AT2; AT3	A; B; C
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.	K4; S3; S5; S6; A1; A2	A; A; B; A; B; B	AT1; AT2; AT3	A: B; C
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.	K3; S2; S4; A4	A	AT1; AT2	A
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.	K1; K2	A	AT1; AT2	A
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.	K2; K3; S2; S3; A3; A4	A	AT1; AT2	A

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K2, K3, S3, S5, A3, A4 APST 2.1 5.1	Assessing Learning: This task requires students to develop and write an essay about implementing assessment in the mathematics classroom and then analyse students work to illustrate how assessment data is used.	Essay, Analysis of student work	40 - 60%

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1, K3, K4, S1, S2, S4, S6, A1, A2 APST 2.1, 2.2, 3.2, 3.4	Planning For Learning: This task requires students to plan sequenced mathematics lessons based on current curriculum and research. These plans will include an activity that caters for different abilities.	Lesson Planning	40 - 60%
S1 APST 2.5	Hurdle Task: Maths Competency Test. Students are to achieve mastery (90%or higher) on this test.	Test	S/N

Adopted Reference Style:

APA