



Course Outline (Higher Education)

School:	School of Education
Course Title:	MATHEMATICS CONTENT AND PEDAGOGY 1
Course ID:	EDMST6025
Credit Points:	15.00
Prerequisite(s):	Nil
Co-requisite(s):	Nil
Exclusion(s):	Nil
ASCED:	070301

Description of the Course :

This course develops an understanding of Mathematics as a "critical subject in secondary schooling" for students' future educational and employment opportunities. A focus on modern techniques of teaching Mathematics will be explored through content relevant to mathematics at a secondary level. Teaching and learning Mathematics in years 7-10 will be examined using current curriculum and policy documents as the basis. Teachers will be required to critically examine current and past practices in learning and teaching Mathematics with reference to curriculum documents as well as articles and papers written within the Mathematics education community. Technology commonly used in the Mathematics classroom will be explored with emphasis on using technology to enhance learning.

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

Placement Component: No

Supplementary Assessment: Yes

Where supplementary assessment is available a student must have failed overall in the course but gained a final mark of 45 per cent or above and submitted all major assessment tasks.

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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Level of course in Program	AQF Level of Program					
	5	6	7	8	9	10
Advanced	■	■	■	■	■	■

Learning Outcomes:

(On successful completion of the course the students are expected to be able to):

Knowledge:

- K1.** Apply effective teaching strategies for Mathematics at a secondary level.
- K2.** Examine contemporary curriculum policies and guidelines relevant to teaching Mathematics in years 7-10.
- K3.** Apply and integrate technology in Mathematical investigations and presentations.
- K4.** Demonstrate mathematics content knowledge relevant to appropriate levels of current curriculum documents.
- K5.** Develop thinking and reasoning skills appropriate to the teaching of mathematics.

Skills:

- S1.** Use the current curriculum documents as a guide to develop curriculum.
- S2.** Critically reflect on the thinking processes associated with the teaching and learning of Mathematics.
- S3.** Incorporate appropriate technology in the learning of Mathematics.
- S4.** Analyse student work samples and give appropriate feedback to enhance student learning and as a basis for informing future planning.
- S5.** Build mathematics content knowledge relevant for students in Years 7-10.

Application of knowledge and skills:

- A1.** Research assessment and how formative assessment can be used in the mathematics classroom.
- A2.** Assess student work samples and document the next level of learning that is applicable for the students.
- A3.** Design of lesson sequence that incorporates inquiry learning, problem solving and the use of technology.
- A4.** Demonstrate personal competence in mathematics.

Course Content:

Topics will include:

Topics may include:

- Engagement techniques in Mathematics.
- Linking Mathematics Curriculum content to mathematical activities.
- Understanding the appropriate mathematics content.
- Making links to previous mathematical knowledge.
- Designing learning activities in Mathematics.
- Designing learning sequences in Mathematics.
- Examining real world contexts for mathematics.
- Organising Mathematics content into effective learning sequences.
- Development of ICT activities that support the learning of mathematics.
- Content development for students in Years 7-10.
- Teaching strategies for teaching mathematics.

- The use of formative and summative assessment in Mathematics.
- Topic planning.

Values:

- V1.** Develop an understanding of the nature and place of Mathematics as a critical subject for further education and training.
- V2.** Consider the inclusiveness or otherwise of Mathematics and the values we model and explicitly teach.
- V3.** Value the place of mathematics and Mathematics education in society.
- V4.** 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.	K5	A	AT1	A
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.	K2, A3	B, B	AT1, AT2	B, B
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.	K2	B	AT1	B
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.	K4	A	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.	K3	B	AT2	B

Learning Task and Assessment:

Learning Outcomes Assessed	Learning Tasks	Assessment Type	Weighting
K1, K5, S1, S2, S4, A1, A2	Write an academic essay on assessment and prepare a critical response to student work samples.	Essay & Critical Response	30 - 50%
K2, K3, K5, S1, S3, A3	Prepare a topic plan for a four week mathematical topic.	Presentation of Curriculum Development	30 - 50%
K4, S5, A4	Complete mathematics testing to demonstrate competence in mathematical content.	Tests	20 - 40%

Adopted Reference Style:

APA