



Course Outline (Higher Education)

Institute / School: Global Professional School

Course Title: INTRODUCTION TO MATHS

Course ID: GPFSP1202

Credit Points: 15.00

Prerequisite(s): (NIL)

Co-requisite(s): (NIL)

Exclusion(s): (NIL)

ASCED: 120199

Description of the Course:

This course will consider the material in the Methods stream of the Year 12 curriculum. The content of the learning program emphasises both mechanical accuracy in solutions, and correct interpretation of calculations in the context of problem solving. The assessment may require both autonomous and collaborative learning processes. Technological aides for producing results and the presentation thereof will be an integral component.

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 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	✓	■	■	■	■	■
Intermediate	■	■	■	■	■	■

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

Learning Outcomes:

After successfully completing this course students will be able to:

Knowledge:

- K1.** Identify, describe, and explain the properties of various mathematical tools and techniques.
- K2.** Demonstrate proof and rigour in the presentation of solutions.

Skills:

- S1.** Perform algebraic manipulation of expressions and equations.
- S2.** Make, interpret, and apply graphs of functions.
- S3.** Derive and anti-derive functions, and interpret the results in the context of problem solving.
- S4.** Calculate probabilities, and interpret such calculations in the context of problem solving.

Application of knowledge and skills:

- A1.** Analyse and model simple real-world problems using mathematics.
- A2.** Present results in a logical, persuasive, and professional manner.

Course Content:

Topics may include:

- Overview of functions (including linear functions, power functions, polynomials, exponential functions, and trigonometric functions), together with the associated graphs
- Arithmetic and geometric sequences and series
- Introductions to the differential calculus (including rates of change, the concept of the derivative, the computation of derivatives, and applications)
- Introduction to the integral calculus (including anti-differentiation, definite and indefinite integrals, the Fundamental Theorem of the calculus, and applications)
- Introduction to counting and probability (including combinations, permutations, probability, conditional probability, and independence)
- Discrete random variables (including general discrete random variables, the Bernoulli distribution, and the binomial distribution)

Graduate Attributes

The Federation University Federation 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, S1-4, A1	AT1, AT2, AT3, AT4
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.	K1, S1-4, A1	AT1, AT2, AT3, AT4
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.	N/A	AT3
GA 4 Communicator ^s	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.	K1-2, S1-4, A1-2	AT1, AT2, AT3, AT4
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.	K1-2, S1-4, A1-2	AT3

Learning Task and Assessment:

Learning Outcomes Assessed	Assessment Tasks	Assessment Type	Weighting
K1, K2, S1, S2, S3, S4, A1	Assignment	Written assignment	10-20%
K1, K2, S1, S2, S3, S4, A1	Assignment	Written assignment	10-20%
K1, K2, S1, S2, S3, S4, A1, A2	Problem solving analysis and presentation	Word or PowerPoint assignment	20-30%
K1, K2, S1, S2, S3, S4, A1	Final assessment / Exam	Final assessment / Exam	40-50%

Adopted Reference Style:

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

Fed Cite - [referencing tool](#)