Liverpool John Moores University

Title:	Foundation Mathematics for Engineering and Technology 1
Status:	Definitive
Code:	**3504FETQR** (127436)
Version Start Date:	01-08-2021
Owning School/Faculty:	Engineering
Teaching School/Faculty:	Oryx Universal College WLL

Team	Leader
Maggi Toft	Y
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Academic Level:	FHEQ3	**Credit Value:**	20	**Total Delivered Hours:**	46
Total Learning Hours:	200	**Private Study:**	154		

Delivery Options
Course typically offered: S1 & S2 & Summer

Component	Contact Hours
Lecture	22
Workshop	22

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Exam	AS2	Final examination	70	2
Test	AS1	Continual assessment	30	

Aims

This module aims to provide students with the mathematical knowledge, understanding and skills which are required to use mathematics as an analytical tool in engineering and technology subjects.

Learning Outcomes

After completing the module the student should be able to:

1 Apply arithmetic operations to manipulate numbers and calculate values.
2 Manipulate and solve a range of equations algebraically and numerically.
3 Represent functions in a graphical form.
4 Apply geometrical principles to engineering and technology applications.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

Final examination	1	2	3	4
Continual assessement	1	2	3	4

Outline Syllabus

The list below provides an indicative list of topics which may be covered in this module:

Arithmetic:

- *Factors, multiples. Concepts of highest common factor and lowest common multiple.*
- *Fractions, addition, multiplication, division, simplification.*
- *Decimal fractions, decimal places, significant figures, scientific notation, rounding off.*
- *Error, percentage, modulus, sigma notation.*

Algebra:

- *Fractions; addition, multiplications, division, simplification.*
- *Algebraic formulae, equations, transposition, simplification, factorization.*
- *Powers, product, quotient, power of a power, roots, negative indices.*
- *Proportionality, direct proportionality, inverse proportionality.*
- *Linear equations, solution, graphs.*
- *Simultaneous linear equations, analytical and graphical solution.*
- *Quadratic equations, solution using formula, graphs.*
- *Exponential functions, introduction.*
- *Logarithms, logs to base 10, natural logs, products, quotients, powers.*
- *Inequalities, intervals.*

Geometry:

- *Perimeters, areas, volumes, typical applications.*
- *Cartesian coordinates, straight line - gradient intercept form*

Learning Activities

Lectures, Workshops, Guided Private Study

Notes

This module covers the fundamental mathematical skills needed for further study in engineering and technology subjects, and will include extensive practice problem solving, assessed regularly to support a structured approach to learning.