

Language of Instruction: English Credits: 10 NFQ Level: 6 Module Delivered In No Programmes Teaching & Learning Multiple delivered using a mixture of lectures and tutorials. (b) The Institute Managed Learning Environment will be used to interactively communicate with students e.g. on-line tests, discussion forums, reference information Module Alm: To give the students the knowledge, competencies and skills necessary to support the mathematical procedures encountered in the other modules of this programme. Learning Outcomes To give the students the knowledge, competencies and skills necessary to support the mathematical procedures encountered in the other modules of this programme. Log and gebraic expressions and to solve algebraic equations To give the students the knowledge competencies and skills necessary to support the mathematical procedures encountered in the other modules of this programme. Log and gebraic capterssions and to solve algebraic equations To give the students the knowledge convert complex numbers to solve equations Log Draw graphs of algebraic and trigonometric functions and to use graphs to solve equations To give the students the incomplex numbers and to convert complex numbers to different forms LO3 Solve triangles, use identities and sketch periodic functions Module Actions LO4 Differentiate various kills that is recommended before enrolment in this module. N										
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MATH H1623: Mathematics 1

Module Content & Assessment

Indicative Content

Basic Algebra

o Rules of precedence and use of calculator o Rules of indices o Conversion of units and use of prefixes o Manipulation of fractions and algebraic expressions o Factorisation of algebraic expressions o Solution of simple, simultaneous and quadratic equations o Transposition of formulae o Laws of logarithms o Solution of log and exponential equations o Partial Fractions o Permutations and combinations

Graphs

o Linear and quadratic graphs. o Log and exponential graphs. o Determination of laws using linear graphs o Engineering applications

Trigonometry

o Angles: degree and radian measure. Trigonometric ratios Inverse trigonometric functions o Solution of triangles. o Compound angle formulae and sums and products of sines and cosines. o Application of trigonometric identities in electrical principles and communications o Graphs of sinusoidal functions o Properties of sinusoidal functions: amplitude, period, frequency, phase angle Addition of sinusoids o Application of sinusoids in electrical/electronic principles and mechanics

Complex numbers

o Representation of complex numbers in Cartesian and polar forms o Conversion from one form to the other. Phasors o Manipulation of complex numbers in Cartesian and polar forms o De Moivre's Theorem o Powers and roots of complex numbers.

Differential Calculus

o Evaluation of simple limits o Differentiation of simple polynomial functions from first principles. o Differentiation, by rule, of algebraic, trigonometric, exponential and logarithmic functions Chain, product and quotient rules. o Slopes of curves, rates of change and maximum/minimum values of a function

Assessment Breakdown	%	
Continuous Assessment	30.00%	
End of Module Formal Examination	70.00%	

Continuous Assessment									
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date					
Other	Each student will be obliged to complete a continuous assessment programme for which 30% will be awarded. This will involve class tests and other assigned tasks.	1,2,3,4,5	30.00	n/a					

No Project

No Practical

End of Module Formal Examination									
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date					
Formal Exam	Each student will sit a formal written examination at the end of the module for which 70% will be awarded.	1,2,3,4,5	70.00	End-of- Semester					

SETU Carlow Campus reserves the right to alter the nature and timings of assessment



MATH H1623: Mathematics 1

Module Workload Workload: Full Time Average Weekly Learner Workload Workload Type Frequency Every Week 3.00 Lecture Every Week Tutorial 1.00 Every Week 3.00 Independent Learning Total Hours 7.00