Module Title:	Mathematics I
Language of Instruction:	English

Credits:	5

NFQ Level:	6

Module Delivered In	1 programme(s)

Teaching & Learning Strategies:	Lectures Project work Private study

Module Aim:	The aims of this module are: (1) to develop the mathematical knowledge of students in order to enable them to successfully pursue their studies in civil engineering; (2) to teach elementary management skills in the areas of scheduling, material control, plant and labour costs. (3) to apply basic mathematical principles to practical civil engineering examples.

Learning Outcomes
On successful completion of this module the learner should be able to:

LO1	Use a scientific calculator and convert units effectively
LO2	Calculate the area, surface area and volume of regular shapes and to use algebra to determine parameters and to derive units for parameters from expressions
LO3	Use algebraic methods to solve and manipulate equations.
LO4	Plot and interpret linear and non linear functions and extract information from the plots.

Pre-requisite learning
Module Recommendations *This is prior learning (or a practical skill) that is recommended before enrolment in this module.*
No recommendations listed
Incompatible Modules *These are modules which have learning outcomes that are too similar to the learning outcomes of this module.*
No incompatible modules listed
Co-requisite Modules
No Co-requisite modules listed
Requirements *This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.*
No requirements listed

Module Content & Assessment

Indicative Content

(1) Numeracy
(a) Adding, subtracting, multiplication and division; (b) Using the calculator for standard engineering calculations: - (i) Square root; (ii) Multiplication, addition etc.; (iii) Bracketing etc for longer calculations; (iv) Manipulation of fractions. (c) Precision (decimal places and significant figures) (d) Numbers in standard notation (1x104 = 10000 etc) (e) Fractions (f) Ratios (g) Percentages

(2) Areas & Volumes
(a) Area and perimeters of triangle, square, rectangle, circle, semi-circle, trapezoids. (b) Trapezoidal, Simpson & mid-ordinate Rule's (c) Surface area and volumes of cylinder, cone, cube, cuboids, sphere and pyramids. (d) Context of Space

(3) Algebra
(a) Logs & Indices (b) Basic Algebra inputting values (c) Like terms in algebra (d) Factoring (b) Transposition of formulae (h) Simultaneous Equations (2 variables)

(4) Graphs
(a) Given a set of data points, construct a graph showing these (picking appropriate scale to show data properly) (b) Plotting straight line, graphs (given the equation or points) (c) Using the equation of the line formula (d) Quadratic and Cubic Equations (e) Numerical solutions to the quadratic and cubic equations

Assessment Breakdown	%
Practical	50.00%
End of Module Formal Examination	50.00%

No Continuous Assessment

No Project

Practical

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	No Description	1,2,3,4	50.00	n/a

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	n/a	1,2,3,4	50.00	End-of-Semester

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

Module Workload

Workload: Full Time

Workload Type	Frequency	Average Weekly Learner Workload
Lecture	12 Weeks per Stage	2.50
Practicals	12 Weeks per Stage	3.50
Estimated Learner Hours	15 Weeks per Stage	4.00
	Total Hours	132.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_CMCIV_D	Bachelor of Engineering in Civil Engineering	1	Mandatory

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