MATH C1502: Mathematics II

Module Title:	Mathematics II
Language of Instruction:	English

Credits:	10

NFQ Level:	6

Module Delivered In	1 programme(s)

Teaching & Learning Strategies:	Lectures Tutorials Private study

Module Aim:	The aims of the module are: (1) to equip students with the necessary mathematical skills to participate fully on the programme; (2) to extend students' mathematical knowledge in preparation for further studies.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	Evaluate distances, angles and areas for right angled and non right angled triangles and apply trigonometric relationships to the solution of right angled triangles.
LO2	Use algebraic methods to solve and manipulate equations including using calculus to locate minimum and maximum values of algebraic functions. Calculate the area and volume of regular shapes and to use algebra and calculus to determine parameters and to derive units for parameters from expressions.
LO3	Produce (a) statistical graphs including histograms and ogives and calculate Standard Deviation, Mean, Mode, Median and the quartile values. (b) materials schedules for construction projects and to calculate center lines, floor areas, wall areas, etc.; (c) basic programme schedules (Gantt charts etc.).
LO4	Calculate shear force & bending moment & draw appropriate diagrams for a simply supported beam.

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

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Module Content & Assessment

Indicative Content
(1) Trigonometry (a) Solution of right angled triangles (b) Unit circle (c) Radian measure (d) Solving triangle with the sin & cosine rules (e) Area of triangles.
(2) Algebra and Calculus (a) Revise Area and Volume (b) Use algebra to determine parameters for area and volume and to derive units from expressions (c) Differentiation using the log tables (d) Max/Min values using Differentiation (e) Points of inflection.
(3) Scheduling (a) Preparation of Material Schedule s. (b) Use and Preparation of Basic Programme schedules (i.e. Gantt Chart etc) (c) Survey of existing building &/or drawings & then work out center lines, floor areas, wall areas etc.
(4) Statistics (a) Graphing data (b) Notation (c) Calculation of central tendency & dispersion.
(5) Shear Force and Bending Moment Diagrams (a) Shear and bending moment diagrams (b) Concentrated loads and uniform distributed force loading

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	n/a	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	No Description	1,2,3,4	50.00	End-of-Semester

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

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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	9.00
	Total Hours	207.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_CMCIV_D	Bachelor of Engineering in Civil Engineering	2	Mandatory