ZMTS C1102: Quantitative Methods 2

Module Title:	Quantitative Methods 2
Language of Instruction:	English

Credits:	5

NFQ Level:	6

Module Delivered In	6 programme(s)

Teaching & Learning Strategies:	This module will be taught in three theory classes and one computer lab practical each of one hour duration per week. Students will be expected to complete problem-sets to re-enforce learning. Delivery of the computing module will involve practical assignments.

Module Aim:	The aim of this module is to provide students with the fundamental mathematical and computing skills necessary for comprehension and progression through the field of science.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	Explain the concept of a function and solve problems involving various types of functions.
LO2	Solve single variable calculus problems.
LO3	Use computer software applications for mathematical analysis.

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
Functions and Graphs Concept of a function. Domain and range. Linear, polynomial, exponential and logarithmic functions.
Trigonometry Angle measurement, trigonometric ratios, identities and equations. Trigonometric waveforms, their characteristics and applications.
Differential Calculus Limit of a function. Definition of the derivative. Rates of change. Rules of differentiation, scientific and business applications using maxima and minima.
Integral Calculus Definition of an integral. Table of integrals. Basic integration, substitution and integration by parts. Areas and volumes of integration.
Practical Software applications for graphing and solving mathematical problems.

Assessment Breakdown	%
Continuous Assessment	30.00%
Practical	30.00%
End of Module Formal Examination	40.00%

Special Regulation
Students must achieve a minimum grade of 35% in the practical/CA and the final exam.

Continuous Assessment				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Examination	In-class assessments	1,2	30.00	n/a

No Project

Practical				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Practical/Skills Evaluation	Computer based assignments and assesssments.	3	30.00	n/a

End of Module Formal Examination				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Formal Exam	2 hour examination	1,2	40.00	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	3.00
Practicals	12 Weeks per Stage	1.00
Estimated Learner Hours	15 Weeks per Stage	5.13
	Total Hours	125.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_SABTP_B	Bachelor of Science (Honours) in Biosciences with Biopharmaceuticals	2	Mandatory
CW_SABRE_B	Bachelor of Science (Honours) in Brewing and Distilling	2	Mandatory
CW_SAPHA_B	Bachelor of Science (Honours) in Pharmaceutics and Drug Formulation	2	Mandatory
CW_SAASC_D	Bachelor of Science in Analytical Science	2	Mandatory
CW_SABFQ_D	Bachelor of Science in Biosciences	2	Mandatory
CW_SASCI_C	Higher Certificate in Science in Applied Biology or Applied Chemistry	2	Mandatory