ZMAT C1203: Mathematics for Graphics

Module Title:	Mathematics for Graphics
Language of Instruction:	English

Credits:	5

NFQ Level:	6

Module Delivered In	3 programme(s)

Teaching & Learning Strategies:	A mixture of traditional lectures, problem solving tutorials and laboratory work

Module Aim:	To provide the student with a competence and understanding of the fundamental mathematics required to function in the field of Interactive Digital Media Design.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	apply the algebra of vectors to solve problems in trigonometry and geometry;
LO2	use matrices to represent and carry out transformations and rotations of objects in 2d and 3d;
LO3	write computer programmes to further explore the concepts of this syllabus.

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
Review of Trigonometry angular measure, basic trigonometrical functions
Vectors with Applications in Geometry addition, scalar multiplication, magnitude and direction, scalar product, components and projections, vector product, lines and planes.
Linear Equations and Matrices linear equations, matrix definition, operations on matrices, solving systems of linear equations, row operations, inverse of a matrix.
Matrix Transformations reflections, projections, rotations, dilations, contractions, properties of matrix transformations in 2d and 3d.

Assessment Breakdown	%
Continuous Assessment	20.00%
Practical	30.00%
End of Module Formal Examination	50.00%

Continuous Assessment

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Examination	30 minute multiple choice class test	1	10.00	Week 6
Examination	30 minute multiple choice class test	2	10.00	Week 12

No Project

Practical

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Practical/Skills Evaluation	students given tasks which involve implementing in computer code the concepts and skills encountered	1,2,3	30.00	Every Week

End of Module Formal Examination

Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Formal Exam	Closed book examination based on all learning outcomes	1,2	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	2.00
Practicals	12 Weeks per Stage	2.00
Independent Learning Time	12 Weeks per Stage	5.42
Tutorial	12 Weeks per Stage	1.00
	Total Hours	125.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_KCCGD_B	Bachelor of Science (Honours) in Computer Games Development	1	Mandatory
CW_KCIAD_B	Bachelor of Science (Honours) in Computing in Interactive Digital Art and Design	1	Mandatory
CW_KCIAD_D	Bachelor of Science in Computing in Interactive Digital Art and Design	1	Mandatory

Discussion Note:	TEST