

<b>Module Title:</b>	Real World Modelling and Simulation
<b>Language of Instruction:</b>	English
<b>Credits:</b>	10
<b>NFQ Level:</b>	8
<b>Module Delivered In</b>	No Programmes
<b>Teaching &amp; Learning Strategies:</b>	The Problem Based Learning (PBL) teaching and learning paradigm is employed in this module. The students are initially given an induction into this way of learning. Subsequently, they are given a number of team problems to solve. Each student has the opportunity to play different roles within their team. The problems are tackled in a studio environment with supervision & guidance provided by the module tutors. At the end of the problem resolution cycle, the students present their findings to the tutors and their peers. The final element of the module sees the students tackle an individual problem that incorporates all elements from the team problems, along with some new challenges.
<b>Module Aim:</b>	To equip the student with a solid understanding of certain game systems so that these systems can be appropriately modelled, and incorporated into simulations with game feel as an important consideration.
<b>Learning Outcomes</b>	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Model certain systems for use in games
LO2	Analyse and evaluate a simulation model design
LO3	Work in teams to develop solutions to problems involving simulations for games
LO4	Carry out independent research to support team work
LO5	Self evaluate learning
<b>Pre-requisite learning</b>	
<b>Module Recommendations</b> <i>This is prior learning (or a practical skill) that is recommended before enrolment in this module.</i>	
No recommendations listed	
<b>Incompatible Modules</b> <i>These are modules which have learning outcomes that are too similar to the learning outcomes of this module.</i>	
No incompatible modules listed	
<b>Co-requisite Modules</b>	
No Co-requisite modules listed	
<b>Requirements</b> <i>This is prior learning (or a practical skill) that is mandatory before enrolment in this module is allowed.</i>	
Game Programming	

**Module Content & Assessment**
**Indicative Content**
**Project management**

Project planning & tracking. Coordinating work within a team. Agile development

**Design & implementation of game systems & simulations**

Build relatively complex game systems to simulate the operation of real or imagined worlds. e.g physics or economic systems

**Software optimisation**

Optimising game systems for performance and efficiency

**Learning & problem solving**

Tackling system design and implementation problems individually and as a team.

**Enhancing 'game feel'**

Improve players tactile, emotional and aesthetic response to a game system through playtesting, iterative refinement and analysis of case studies

**Assessment Breakdown**
**%**

Continuous Assessment

60.00%

Project

40.00%

**Continuous Assessment**

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Other	The students will be organised into teams for each problem and will each get an opportunity to play roles specified in the Problem Based Learning (PBL) model. The teams are given one to four weeks to work on a problem depending on the scale of the problem. All of these team problems will involve developing and assessing all five learning outcomes. Each problem will be assessed under product and process.	1,2,3,4,5	15.00	n/a
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**Project**

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	Individual Problem. The students will be given a common individual problem that will require of them to consolidate all their learning from the group problems and apply this to develop more complex simulations and modelling. The assessment protocol for this problem will involve the student producing their own individual plan to tackle the problem, presenting their work on resolving the problem at the end and providing the tutors with a reflective account on their learning experience while working on this problem.	1,2,4,5	40.00	n/a

No Practical

No End of Module Formal Examination

**Module Workload**

<b>Workload: Full Time</b>		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Studio Based Learning	30 Weeks per Stage	4.00
Independent Learning	30 Weeks per Stage	1.67
Lecturer-Supervised Learning (Contact)	30 Weeks per Stage	2.00
Total Hours		230.00

