

<b>Module Title:</b>	Fundamentals of Game Networking
<b>Language of Instruction:</b>	English
<b>Credits:</b>	5
<b>NFQ Level:</b>	8
<b>Module Delivered In</b>	<a href="#">1 programme(s)</a>
<b>Teaching &amp; Learning Strategies:</b>	The course is delivered via an equal mixture of laboratory and lecture sessions. Lecture sessions present fundamental game networking concepts, which are further supported by practical implementation of concepts during laboratory sessions and assessments.
<b>Module Aim:</b>	To enable the student to develop multiplayer video games in accordance with industry practice.
<b>Learning Outcomes</b>	
<i>On successful completion of this module the learner should be able to:</i>	
LO1	Build an understanding of the fundamental concepts of computer networking
LO2	Apply the architectural principles of computer networking and compare different approaches to organising networks.
LO3	Design, develop and deploy distributed, multiplayer gaming applications.
<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>	
Games Engineering II or equivalent Web Development and Databases or equivalent Programming II and Operating Systems or equivalent	

## Module Content & Assessment

Indicative Content
<b>Introduction</b> History and challenges of Online Games
<b>Network fundamentals</b> IP, TCP, UDP, Sockets, latency, bandwidth, packet loss
<b>Network architectures</b> Client-server, P2P, multiple servers, multicast, NAT
<b>Design a multiplayer game</b> Serialisation, replication, input and state based updates, design decisions

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

No Continuous Assessment

Project				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	Design and Implementation of a Multiplayer Video Game	1,2,3	20.00	End-of-Semester

Practical				
Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	Laboratory Work	1,2,3	30.00	Every Week

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

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

**Module Workload**

<b>Workload: Full Time</b>		
<i>Workload Type</i>	<i>Frequency</i>	<i>Average Weekly Learner Workload</i>
Lecture	12 Weeks per Stage	2.00
Laboratory	12 Weeks per Stage	2.00
Estimated Learner Hours	15 Weeks per Stage	5.13
Total Hours		125.00

**Module Delivered In**

Programme Code	Programme	Semester	Delivery
CW_KCCGD_B	<a href="#">Bachelor of Science (Honours) in Computer Games Development</a>	7	Mandatory