Module Title:	Distributed Development
Language of Instruction:	English

Credits:	5

NFQ Level:	8

Module Delivered In	2 programme(s)

Teaching & Learning Strategies:	Learners will be expected to activity participate in class on the materials covered and work throughout each scheduled lab session to accomplish assigned tasks. While theoretical topics are covered in lectures the practical application of the theory will be covered in the computer laboratory classes where students get to apply the concepts to solve real world problems.

Module Aim:	To provide learners with a theoretical knowledge and practical skills of developing distributed systems.

Learning Outcomes
On successful completion of this module the learner should be able to:

LO1	Assess the different approaches to developing distributed systems.
LO2	Design, develop and test distributed systems.
LO3	Evaluate proposed distributed architectural designs.

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

Module Content & Assessment

Indicative Content

Distribution
Replication, Fault Tolerance, Load Balancing and Scalability

Internet of Things
Architecture, Software and middleware platforms, Interfaces, Communication and Cooperation, Security, Sensing, Embedded Devices, Testing and Standardisation

Business Models
IoT Governance, Societal and Ethical Implications

Development
Frameworks and Languages used for distributed development. MPI for Clusters. Erlang/OTP for large scale distribution.

Assessment Breakdown	%
Project	15.00%
Practical	25.00%
End of Module Formal Examination	60.00%

No Continuous Assessment

Project

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	Develop and test a distributed system.	1,2,3	15.00	Week 10

Practical

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	Laboratory Exercises using a high level language (e.g. Erlang) to develop basic distributed systems. Familiarization with the tool set used in distributed development.	2	25.00	Every Week

End of Module Formal Examination

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Formal Exam	No Description	1,2,3	60.00	End-of-Semester

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

Module Workload

Workload: Full Time		
Workload Type	*Frequency*	*Average Weekly Learner Workload*
Lecture	12 Weeks per Stage	2.00
Independent Learning Time	15 Weeks per Stage	5.13
Laboratory	12 Weeks per Stage	2.00
	Total Hours	125.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_KCCGD_B	Bachelor of Science (Honours) in Computer Games Development	8	Group Elective 1
CW_KCSOF_B	Bachelor of Science (Honours) in Software Development	8	Group Elective 1