Module Title:	Agile Development and Operations
Language of Instruction:	English

Credits:	10

NFQ Level:	8

Module Delivered In	No Programmes

Teaching & Learning Strategies:	Students will participate in an active and technology-enhanced learning environment including interactive lectures, collaborative, project- and problem-based learning and case studies that progress their analytical and practical knowledge of information systems development, operations and management. Learning is further augmented with feedback from formative and summative assessments.

Module Aim:	Advance the students' knowledge on information systems and their usage to support business operations and strategy and to drive innovation. Advance the students' practical knowledge on information system development using Agile and other contemporary methodologies. Provide the students the knowledge required for the general and technical management of information system development projects.

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

LO1	Examine contemporary software development processes including their techniques, tools and implications.
LO2	Evaluate emerging trends in information system development and operations that support business and innovation.
LO3	Develop and integrate modelling throughout the information system development.
LO4	Employ, integrate and generalise software development and operations tasks such as building, testing and deployment using tools and techniques.
LO5	Select, justify and critically analyse project management concepts, tools and techniques for efficient and effective information system development projects.

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

Software Development
Agile, SCRUM, XP, prototyping, iterative, spiral development, DevOps, continuous integration/delivery/deployment toolchain (e.g. Gradle, Jenkins, Docker, ...), quality assurance.

Requirements Analysis
Requirements modelling, fact finding, user stories, product backlog, use cases, functional/non-functional requirements.

Analysis and Design
UML, BPM, ERD, data design, DBMS, data mining, data warehousing, outsourcing, TCO, privacy by design.

Architecture and Implementation
Client-server, service-oriented, cloud, multi-tier system, middleware, IoT, mobile computing, IDE, coding, changeover strategies, data conversion, training, documentation.

Testing and Maintenance
Validation and verification, continuous testing, test plan, test cases, levels and types of testing, test automation tools, test-driven development, staging, monitoring, security controls, dependability, scalability, user support, version control.

Project Management
Work breakdown structure, risk management, critical path, Gantt, PERT, SCRUM team, sprint, configuration management (e.g. Puppet), code management (Git).

Assessment Breakdown	%
Continuous Assessment	30.00%
Project	50.00%
Practical	20.00%

Continuous Assessment

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Examination	Exam 1	1,2,3	15.00	Week 14
Examination	Exam 2	4,5	15.00	Week 25

Project

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Project	Group project, team submission, modelling and analysis	1,2,3	10.00	Week 12
Project	Individual submission with team collaboration, application of Agile development and project management to a business scenario.	1,2,3,4,5	40.00	Week 30

Practical

Assessment Type	Assessment Description	Outcome addressed	% of total	Assessment Date
Practical/Skills Evaluation	Linked to topics, case studies including practical tasks.	3,4,5	20.00	Every Week

No End of Module Formal Examination

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	Every Week	1.00
Laboratory	Every Week	2.00
Independent Learning	Every Week	3.00
	Total Hours	6.00