Module Title:	Reverse Engineering
Language of Instruction:	English

Credits:	5

NFQ Level:	8

Module Delivered In	1 programme(s)

Teaching & Learning Strategies:	Learners will be expected to actively participate in class and work through assigned laboratory assessments throughout the year.

Module Aim:	To provide learners with a theoretical knowledge of, and practical skills with, Reverse Engineering and Malware Analysis.

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

LO1	Reverse Engineer a Software Application
LO2	Use Industry Standard Tools for Reverse Engineering

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
Fundamentals Overview of Reverse Engineering Techniques used in Reverse Engineering, Approaches to Reverse Engineering, Ethics
Fundamentals Processor Architecture, Operating Systems, Machine Code and Assembly
Tools Disassemblers, Debuggers, Process System and Network Monitoring, Code Analysis
Reverse Engineering Unpacking Software, Behavioural Analysis, Code Analysis

Assessment Breakdown	%
Continuous Assessment	10.00%
Project	15.00%
Practical	15.00%
End of Module Formal Examination	60.00%

Continuous Assessment				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Multiple Choice Questions	MCQ's covering material done in lectures	1	10.00	Ongoing

Project				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Project	Project Work involving larger scale problem	1,2	15.00	Week 10

Practical				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Practical/Skills Evaluation	Practical Laboratory Work based on lectures	1,2	15.00	n/a

End of Module Formal Examination				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Formal Exam	Written paper covering Theory and Practice of Malwear Analysis and Reverse Engineering	1	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	1.00
Independent Learning	15 Weeks per Stage	5.93
Laboratory	12 Weeks per Stage	2.00
	Total Hours	125.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_KCCYB_B	Bachelor of Science (Honours) in Cyber Crime and IT Security	8	Mandatory

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