GMIT
INSTITIÚID TEICNEOLAÍOCHTA NA GAILLIMHE-MAIGH EO
GALWAY-MAYO INSTITUTE OF TECHNOLOGY

INFO08009
Operating Systems and Cloud Computing

Full Title	Operating Systems and Cloud Computing		
Status	Uploaded to Banner	**Start Term**	2012
NFQ Level	08	**ECTS Credits**	05
Module Code	INFO08009	**Duration**	13 weeks - (13 Weeks)
Grading Mode		**Department**	Comp Science & Applied Physics
Module Author	Gabriel Hicks		
Co Authors	Sean Duignan, Damien Costello		

Module Description

This module is part of a conversion course for qualified level 8 graduates or equvilant to immerse them in the fundamentals of operationg systems and Cloud Computing (with a specific focus on virtualisation as a fundamental enabling technology for the Cloud).

	Learning Outcomes ***On completion of this module the learner will/should be able to:***
1.	Demonstrate an understanding of the internal process management used in modern Operating Systems.
2.	Demonstarte an awareness of Operating System problems such as deadlock, memory management and interrupt handling and the different approaches taken to resolving
3.	Demonstrate an understanding of the installation and practical setup of a range of modern operating systems.
4.	Demonstrate a competency in the role and application of virtualisation technologies in Cloud Computing.
5.	Critically evaluate design and configuration aspects of local, host-based and network operating systems

Indicative Syllabus

Introduction to Operating Systems 40%
Definitions, Key Terms and Concepts
Historical Context
Classifications
Local
Host-based
Networked

Storage Management
Real Storage, Virtual Storage, Memory Paging and Segmentation

System Software
Compilers, Assemblers, Linkers, Compression and Decompression

System Calls
Context Switching, Process Management, Queue Management, Coordination and communication, Concurrent Programming, Semaphores, Deadlock, Shared Variables and Memory

Using the Operating System(s)
Network / Multi-user features and consideration
Security Considerations
Backup / Restore Considerations

System Installation 10%
Minimum System Requirements
Disk / Storage Considerations
Partitions
File Systems
Performance
Installation Considerations
Media (Disc, Network, Saved Image)
Automation through Scripting
Installation and Configuration
Windows (various)
Unix (various)

Introduction to Virtualisation Technologies 30%
Platform Abstraction
Resource Sharing / Virtualisation
Dual-boot v's Virtual Machines
Virtualisation Tools
Performance Characteristics

Systems Management Considerations 20%
Ongoing Operating System Maintenance and Upgrade.
Installing Applications
Security Considerations
Backup / Restore Considerations
"Ghosting" / Imaging
Security Considerations
Backup / Restore Considerations

Teaching and Learning Strategy

Assessment Strategy

Repeat Assessment Strategies

Indicative Coursework and Continuous Assessment:		**100 %**		
Form	***Title***	***Percent***	***Week (Indicative)***	***Learning Outcomes***
UNKNOWN	Other Exam	100 %	Any	1,2,3,4,5

Full Time Delivery Mode Average Weekly Workload:			**4.00 Hours**		
Type	***Description***	***Location***	***Hours***	***Frequency***	***Weekly Avg***
Lecture	Lecture	Not Specified	2	Weekly	2.00
Practical	Lab Session	Not Specified	2	Weekly	2.00

Literary Resources
Understanding Operating Systems - Ann McIver McHoes & Ida M. Flynn
Principles of Operating Systems - Brian L Stuart

Other Resources
None

Additional Information
None

Programme Membership
GA_KSOFG_L08 201700 Higher Diploma in Science in Software Development