SYST C1601: Development on GNU/Linux

Module Title:	Development on GNU/Linux
Language of Instruction:	English

Credits:	5

NFQ Level:	6

Module Delivered In	1 programme(s)

Teaching & Learning Strategies:	Traditional lectures mixed with practical sessions to facilitate students undertaking laboratory exercises on system administration and scripting topics.

Module Aim:	Provide the learner with the necessary skills to establish and administer both single-user and multi-user GNU/Linux computer systems, develop scripts using the shell and prepare the system as a development platform for well used programming languages.

Learning Outcomes	
On successful completion of this module the learner should be able to:	
LO1	Install and setup a GNU/Linux operating system on hardware and Virtual Machines (VM).
LO2	Classify and illustrate techniques to perform common System Administrative tasks using GNU tools.
LO3	Write bash shell scripts for the automation of System Administration Tasks tasks.
LO4	Apply standard methods to manage local security and software management on a GNU/Linux system.
LO5	Individual capstone project to solve a System Administration task.

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

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Module Content & Assessment

Indicative Content
Introduction to and Installing GNU/Linux GNU/Linux General background, Prepare to install GNU/Linux, Install GNU/LinuxLinux, Post GNU/Linuxinstallation, Installing Packages.
Editing files Vim, nano, cat, head and tail.
System Administration tasks Users and Groups, Filesystems, File Permissions, Handling files and processes, Disks and volumes.
Interacting with the GNU/Linux shell Input, Output and Errors, Shells, The Superuser, root, User login, PATH, alias and environment variables.
Further System Administration tasks The boot system, System daemon (systemd), Mounting file-systems, Device configuration, Network configuration, Print configuration and logging.
Automating tasks Sed, awk, pipes, cron, at, batch and bash scripting.
Development Environment preparation Prepare a GNU/Linux system as a platform for development. Installation of gcc/g++/make via build-essentials, establish virtual environments (virtualenv) for Python.

Assessment Breakdown	%
Project	40.00%
Practical	60.00%

No Continuous Assessment

Project				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Project	n/a	1,3,4,5	40.00	n/a

Practical				
Assessment Type	*Assessment Description*	*Outcome addressed*	*% of total*	*Assessment Date*
Practical/Skills Evaluation	n/a	1,2,3,4,5	60.00	n/a

No End of Module Formal Examination

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

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Module Workload

Workload: Full Time		
Workload Type	*Frequency*	*Average Weekly Learner Workload*
Lecture	Every Week	1.00
Practicals	Every Week	2.00
Independent Learning	Every Week	6.00
Project	Per Semester	0.32
	Total Hours	17.00

Module Delivered In

Programme Code	Programme	Semester	Delivery
CW_EESYS_B	Bachelor of Engineering (Honours) in Electronic Engineering	2	Mandatory