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

COMP08049
Programming and Scripting

Full Title	Programming and Scripting

Status	Uploaded to Banner	**Start Term**	2017
NFQ Level	08	**ECTS Credits**	10
Module Code	COMP08049	**Duration**	Semester - (13 Weeks)
Grading Mode		**Department**	Comp Science & Applied Physics
Module Author	Ian McLoughlin		

Module Description

An introduction to automating computer tasks using scripting languages and solving problems using programming languages, with a focus on data.

	Learning Outcomes ***On completion of this module the learner will/should be able to:***
1.	Automate computer tasks using a scripting language.
2.	Write configuration files for a variety of software applications.
3.	Setup and configure a software development environment and toolchain.
4.	Develop an algorithm to solve a computational problem.
5.	Write a computer program in a high-level programming language.
6.	Construct a complex computer program from a series of simpler computer programs.

Indicative Syllabus

Scripting

- Command Line Interfaces
- Read, Evaluate, Print, Loop environments
- Command line arguments
- Scripts to automate tasks
- Environment variables
- Input/Output redirection
- Background and foreground jobs

Development environments and toolchains

- Compilers and interpreters
- Programming text editors
- Integrated development environments
- Distributed version control software

Programming

- Reading documentation
- Statements
- Comments
- Constants and variables
- Conditionals
- Loops
- Functions

- File Input/Output

Teaching and Learning Strategy

Weekly lectures will cover the high-level concepts and the theory, while hands-on practical sessions will be used to develop students' software development skills.

Assessment Strategy

Students will complete a mixture of assignments and project, with an emphasis on building an online portfolio of programming work.

Repeat Assessment Strategies

Students will complete a comprehensive individual project that assesses all learning outcomes.

Indicative Coursework and Continuous Assessment:		**100 %**		
Form	***Title***	***Percent***	***Week (Indicative)***	***Learning Outcomes***
Assignment	Problem sheet based assignment	50 %	Week 6	1,2,4,6
Individual Project	Programming assignment	50 %	Week 13	3,4,5,6

Full Time Delivery Mode Average Weekly Workload:			**6.00 Hours**		
Type	***Description***	***Location***	***Hours***	***Frequency***	***Weekly Avg***
Lecture	Lecture	Not Specified	2	Weekly	2.00
Practical	Computer practical	Not Specified	2	Weekly	2.00
Practical	Computer practical	Not Specified	2	Weekly	2.00

Online Learning Delivery Mode Average Weekly Workload:			**6.00 Hours**		
Type	***Description***	***Location***	***Hours***	***Frequency***	***Weekly Avg***
Online Learning	Online (Asynchronous)	Not Specified	4	Weekly	4.00
Online Learning	Online (Synchronous)	Not Specified	2	Weekly	2.00

Recommended Reading Book List

van Rossum, G., (2016). *Python 3.6 Tutorial*. Samurai Media Limited.
ISBN 9888406906 ISBN-13 9789888406906

Online Resources

https://www.python.org/

https://www.gnu.org/software/bash/

https://git-scm.com/

Programme Membership

GA_KDATG_L08 201700 Higher Diploma in Science in Data Analytics