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

COMP08028
Computer Architecture and Technology Convergence

Full Title	Computer Architecture and Technology Convergence		
Status	Uploaded to Banner	**Start Term**	2017
NFQ Level	08	**ECTS Credits**	05
Module Code	COMP08028	**Duration**	13 weeks - (13 Weeks)
Grading Mode		**Department**	Comp Science & Applied Physics
Module Author	Ian McLoughlin		
Co Authors	Sean Duignan		

Module Description

An introduction to the internal workings, structure, architecture and organisation of modern computer architectures.

Learning Outcomes

On completion of this module the learner will/should be able to:

1. Demonstrate an understanding of the components in modern computer architectures.
2. Troubleshoot common computer hardware and software problems.
3. Describe the topologies of computer networks.
4. Explain the role of abstraction in the development of computer hardware and software.

Indicative Syllabus

Computer Hardware

- Central processing units (CPUs)
- Random access memory (RAM)
- Input and Output devices (IO)
- Routers and switches
- Von Neumann architecture

Abstraction

- Hardware abstraction layers
- Software libraries
- Application Programming Interfaces (APIs)
- Data abstraction and data structures

Problem Solving

- Troubleshooting
- Boot processes
- Error messages and logging
- Working systematically

Communications

- Network topologies
- Protocols
- Network models

Teaching and Learning Strategy

Students will receive a series of lectures and practical sessions. Theoretical concepts will be covered in lectures and these will be applied to

real-world scenarios in practical sessions.

Assessment Strategy

The module will be assessed through a combination of theory-focused exams and applied work.

Repeat Assessment Strategies

A large project covering all learning outcomes will be provided.

Indicative Coursework and Continuous Assessment:		**100 %**		
Form	***Title***	***Percent***	***Week (Indicative)***	***Learning Outcomes***
Assignment	Report	40 %	Week 8	1,2,4
Individual Project	Project	60 %	Week 13	1,2,3

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	Practical	Not Specified	2	Weekly	2.00

Online Learning Delivery Mode Average Weekly Workload:			**4.00 Hours**		
Type	***Description***	***Location***	***Hours***	***Frequency***	***Weekly Avg***
Online Learning	Online (Asynchronous)	Not Specified	3	Weekly	3.00
Online Learning	Online (Synchronous)	Not Specified	1	Weekly	1.00

Recommended Reading Book List

Stallings, W., (2009). *Computer Organization and Architecture: Designing for Performance (8th Edition)*. Pearson.
ISBN 0136073735 ISBN-13 9780136073734

Online Resources

https://stackexchange.com/

http://pages.cs.wisc.edu/~arch/www/books.html

Other Resources

None

Additional Information

None

Programme Membership

GA_KDATG_L08 201700 Higher Diploma in Science in Data Analytics
GA_KSOFG_L08 201700 Higher Diploma in Science in Software Development