Module specification

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Module code	COM465
Module title	Computer Systems
Level	4
Credit value	20
Faculty	FAST
Module Leader	Teri Birch
HECoS Code	100734
Cost Code	GACP

Programmes in which module to be offered

Programme title	Is the module core or option for this programme
BSc (Hons) Computer Science	Core
BSc (Hons) Computing	Core
BSc (Hons) Computer Networks and Security	Core
BSc (Hons) Cyber Security	Core
BSc (Hons) Applied Cyber Security	Core
BSc (Hons) Applied Software Engineering	Core

Pre-requisites

None

Breakdown of module hours

Learning and teaching hours	36 hrs
Placement tutor support	0 hrs
Supervised learning e.g. practical classes, workshops	0 hrs
Project supervision (level 6 projects and dissertation modules only)	0 hrs
Total active learning and teaching hours	36 hrs
Placement / work based learning	0 hrs
Guided independent study	164 hrs

Learning and teaching hours	36 hrs
Module duration (total hours)	200 hrs

For office use only	
Initial approval date	06/08/2021
With effect from date	01/09/2021
Date and details of revision	14/01/2022 Administrative update to include the degree apprenticeship titles
Version number	1

Module aims

The module aims to provide students with a grounding in the architecture and organisation of modern computer systems.

Module Learning Outcomes - at the end of this module, students will be able to:

1	Describe the major sub-systems, components and operation of computer systems.
2	Explain the key differences difference between techniques used in computer systems
3	Demonstrate proficiency in the use of binary and hexadecimal number systems, including real and negative numbers.
4	Identify designs for computer system components using logic gates and circuits.

Assessment

Indicative Assessment Tasks:

This section outlines the type of assessment task the student will be expected to complete as part of the module. More details will be made available in the relevant academic year module handbook.

The development of a Portfolio (3000 words) whereby students will be given assessment topics through tutorials and coursework (a number of tasks as formative assessment)

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)
1	1-4	Portfolio	100%

Derogations

None

Learning and Teaching Strategies

The module will be delivered through a combination of formal lectures, tutorials, practical demonstrations and labs. Students will have access to lecture materials, and ancillary resources, via the University's VLE platform.

Indicative Syllabus Outline

Brief history of computer systems and key developments
Top-Level View of Computer System Functions and Interconnection
Number systems: decimal, binary and hexadecimal
Number systems: Binary arithmetic and floating point numbers
Digital Logic: Gates and circuits
Boolean algebra and Karnaugh maps
Processor structure and function
Memory: Logic and Organization
Memory: Hardware
Input/Output: Data Storage and Devices
Input/Output: Interfaces and Peripherals

Indicative Bibliography:

Please note the essential reads and other indicative reading are subject to annual review and update.

Essential Reads

Stallings, W. (2015), *Computer Organization and Architecture: Designing for Performance.* 10th ed. Boston:Pearson.

Other indicative reading

Aho, A. and Ullman, J. (1992), *Foundations of Computer Science*. Freeman. Available online: http://infolab.stanford.edu/~ullman/focs.html

Null, L. and Lobur, J. (2015). *Essentials of Computer Organization and Architecture.* 4th ed. Burlington: Jones and Bartlett Publishers.

Tanenbaum, A. and Austin, T. (2012), *Structured Computer Organization.* 6th ed. Harlow: Pearson.

Employability skills – the Glyndŵr Graduate

Each module and programme is designed to cover core Glyndŵr Graduate Attributes with the aim that each Graduate will leave Glyndŵr having achieved key employability skills as part of their study. The following attributes will be covered within this module either through the content or as part of the assessment. The programme is designed to cover all attributes and each module may cover different areas.

Core Attributes
Engaged
Enterprising
Creative

Key Attitudes
Commitment
Curiosity
Resilience
Confidence
Adaptability

Practical Skillsets
Digital Fluency
Organisation
Critical Thinking
Emotional Intelligence
Communication