Computer organisation and architecture 284 (COS 284)

Qualification	Undergraduate
Faculty	Faculty of Engineering, Built Environment and Information Technology
Module credits	16.00
NQF Level	06
Programmes	BIS (Multimedia)
	BSc (Computer Science)
	BSc (Information and Knowledge Systems)
	BSc (Applied Mathematics)
	BSc (Mathematics)
	BSc (Physics)
Prerequisites	COS 212 GS
Contact time	1 practical per week, 4 lectures per week
Language of tuition	Module is presented in English
Department	Computer Science
Period of presentation	Semester 2

Module content

This module provides the foundations on which other modules build by enabling a deeper understanding of how software interacts with hardware. It will teach the design and operation of modern digital computers by studying each of the components that make up a digital computer and the interaction between these components. Specific areas of interest, but not limited to, are: representation of data on the machine-level; organisation of the machine on the assembly level; the architecture and organisation of memory; inter- and intra-component interfacing and communication; data paths and control; and parallelism. Topic-level detail and learning outcomes for each of these areas are given by the first 6 units of 'Architecture and Organisation' knowledge area as specified by the ACM/IEEE Computer Science Curriculum 2013.
The concepts presented in the theory lectures will be reinforced during the practical sessions by requiring design and implementation of the concepts in simulators and assembly language using an open source operating system.

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