

Computer Architecture & Operation Systems (ACCA4022)
Level 4 Term 2

Week	Topic		Activities
	Session 1	Session 2	
Week 1	Introduction to the module Overview of Computer systems	Fundamentals of computer systems and sub-systems: Introduction of hardware, software, humanware. Architecture: Von-Neumann & Harvard	Individual work: Activity 1 Activity 2 Group work: Activity 3 Assessment 1 discussion
Week 2	Computer components and peripherals – 1 Differences between Von-Neumann & Harvard	Computer components and peripherals – 2	Group work: Activity 4 Individual work: Activity 5
Week 3	Fundamentals of number systems: Decimal, Binary, Octal and Hexadecimal	Practical activities of number representations and conversion	Individual work: Activity 6 Activity 7 Activity 8
Week 4	Fundamentals of number systems: Decimal, Binary, Octal and Hexadecimal	Practical activities of number representations and conversion	Individual work: Activity 9
Week 5	System block diagram, CPU, memory, input/output unit & System clock	Computer buses: address bus, data bus, control bus, and system bus	Group work: Activity 10 Activity 11
Week 6	Fundamentals of logic gates: AND, NAND, OR, NOR, XOR, NOT & Buffer	Fundamentals of logic gates: AND, NAND, OR, NOR, XOR, NOT & Buffer	Individual work: Activity 12 Activity 13 Assessment 1 tasks discussion
Week 7	Instruction sets and addressing: Data transfer, logic and arithmetic instructions. Memory organisations: RAM, ROM, Cache and Virtual memory Processor and Processor characteristics: RISC, CISC, multi-core	Storage devices: Optical, HDD, SSD, RAID Introduction to network principles, networking hardware Polled, interrupts and DMA	Group work : Activity 14 Assignment 2 tasks discussion

Week 8	OS fundamentals: Windows OS: architecture, components, process, threads & scheduling	File system structure, navigation, viewing and editing files and scripts	Activity 16 Activity 17 Activity 18 Assignment tasks discussion
Week 9	OS fundamentals: Linux OS: architecture, components, process, threads & scheduling	File system structure, navigation, viewing and editing files and scripts	Group work: Activity 19 Activity 20 Assignment 2 tasks discussion Revision
Week 10	Assessment 1 In class test		