Liverpool John Moores University

Title:	COMPUTING FUNDAMENTALS
Status:	Definitive
Code:	**3006FCERT** (117610)
Version Start Date:	01-08-2011
Owning School/Faculty:	Computing and Mathematical Sciences
Teaching School/Faculty:	Computing and Mathematical Sciences

Team	Leader
Andrew Symons	Y

Academic Level:	FHEQ3	**Credit Value:**	24.00	**Total Delivered Hours:**	72.00
Total Learning Hours:	240	**Private Study:**	168		

Delivery Options
Course typically offered: Standard Year Long

Component	Contact Hours
Lecture	24.000
Tutorial	48.000

Grading Basis: 40 %

Assessment Details

Category	Short Description	Description	Weighting (%)	Exam Duration
Test	AS1	In class test	10.0	1.00
Test	AS2	In class test	15.0	1.00
Test	AS3	In class test	20.0	1.00
Report	AS4	Group-based report on the operating system and a detailed description of one of its services and its administration.	55.0	

Aims

-To familiarise the student with the area of computer systems
-To introduce the student to the software development process
-To introduce the student to the concepts involved with computer programming

Learning Outcomes

After completing the module the student should be able to:

1 Identify and describe the architecture and components, both hardware and software of a computer system.
2 Identify and apply the appropriate process when converting between number systems and perform simple binary mathematics.
3 Use Boolean logic to generate truth tables and simple logic gate circuits.
4 Describe in detail the service-oriented nature of the operating system and its administration.

Learning Outcomes of Assessments

The assessment item list is assessed via the learning outcomes listed:

In class test	1
In class test	2
In class test	3
Group Report	4

Outline Syllabus

Computer Systems Architecture: Hardware and Software
-Input, Processing, Output and Peripherals, Motherboard Busses, CPU Architecture, Fetch-Execute Cycle, Caching and Memory, Instructions and Data.

Number Systems and Binary Mathematics
-Binary, Decimal to Binary and Binary to Decimal Coversion.
-Other number systems: Octal, Hexadecimal.
-Binary Mathematics: Addition, Subtraction, 2's Complement.

Boolean logic, truth tables and logic circuits
-And, Or and Not gates. Boolean expressions.
-Circuits and Circuit Diagrams.
-Half-add and Full Adder.
The Operating System
-Alternative operating systems:
-Alternative interfaces: Text-based versus Graphical.
-Service Provision and Administration.

Learning Activities

Lectures followed by tutorials and where applicable, lab-based practicals.

References

Course Material	Book
Author	Andrew S. Tanenbaum
Publishing Year	2005
Title	Structured Computer Organisation
Subtitle	
Edition	5th Edition
Publisher	Prentice Hall
ISBN	0131485210

Course Material	Book
Author	Andrew S. Tanenbaum
Publishing Year	2007
Title	Modern Operating Systems: International Version
Subtitle	
Edition	3rd Edition
Publisher	Pearson Education
ISBN	0138134596

Notes

This module introduces the student to the fundamental concepts of computer science and its practical application.