Module Title **Introduction to Computer Engineering** **Keywords** Computer Architecture, Computer Peripherals, Operating Systems, Software Development, High-level Language	Reference EN1540 SCQF SCQF Level 7 SCQF Points 15 ECTS Points 7.5 Created May 2002 Approved March 2004 AmendedJuly 2012 Version No. 4

This Version is No Longer Current

The latest version of this module is available here

Prerequisites for Module

Basic keyboard skills, familiarity with personal computer network procedures.

Corequisite Modules

None.

Precluded Modules

None.

Aims of Module

To provide the student with the ability to describe computer systems and to develop structured software in a high-level language.

Learning Outcomes for Module

Mode of Delivery

This module is taught using a structured programme of lectures and tutorials (and/or programmed reading, formative quizzes and remote interaction), student-centred learning and practical exercises, which will include a software design exercise.

Assessment Plan

	Learning Outcomes Assessed
Component 1	2,3
Component 2	2,3
Component 3	1

On completion of this module, students are expected to be able to:

1. Describe the structure of a computer system and explain its principles of operation.
2. Design solutions to specified software problems.
3. Develop structured programs in a high-level language.

Indicative Module Content

Introduction to computer systems: fundamental concepts, computer classification, application areas; system block diagram, CPU, memory, input/output unit, system clock; data, address and control buses. Peripheral devices:human-computer interface, backing store. Operating systems and networks.

Software development: software design, standards and documentation, algorithms and data structures, source and object code, compilers, the edit-compile-execute cycle, testing and debugging. Syntax of a high level language: constants and variables, data types, program statements, selection and repetition control structures, library and user functions, arrays.

Indicative Student Workload

Contact Hours	Full Time	Part Time	Distance Learning
Lectures	9	6	0

Component 1. Logbook (25% weighting).

Component 3. In-class tutorials (50% weighting).

Component 2. In-class programming assessment (25% weighting).

Indicative Bibliography

1. BRONSON, G.J., 2011. A First Book of C++. 4th ed. Pacific Grove, CA: Brooks/Cole.
2. CLEMENTS A., 2006. Principles of Computer Hardware. 4th ed. Oxford: Oxford University Press.
3. WHITE, R. & DOWNS, T.E., 2014. How Computers Work. 10th ed. Indianapolis: Que.

Online Engagement	0	0	2
Practical	36	28	0
Tutorials	4	2	0
Directed Study			
Directed Practicals	18	26	54
Directed Self Study	46	46	46
Private Study			
Private Study	37	42	48