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 Amended August 2011 Version No. 3

This Version is No Longer Current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

On completion of this module,

Indicative Student Workload

	Full Time	Part Time
Contact Hours		
Lectures	12	12
Practical	24	24
Tutorials	12	12
Directed Study		
Directed Self Study	27	27
Private Study		
Private Study	75	75

Mode of Delivery

This module is taught using a structured programme of lectures, tutorials, student-centred learning and practical exercises, which will include a software design exercise.

Assessment Plan

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 that are documented to prescribed standards.

Indicative Module Content

Introduction to computer systems: system block diagram, CPU, memory, input/output unit, system clock; data, address and control buses, peripheral devices, computer classification, application areas, operating systems, 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.

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

Component 1. Logbook (25% weighting).

Component 3. In-class tuorials (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.