1. **Title of the module**

COMP8830 (CO883) - Systems Architecture

1. **School or partner institution which will be responsible for management of the module**

School of Computing

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 7

1. **The number of credits and the ECTS value which the module represents**

15 credits (7.5 ECTS)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Autumn

1. **Prerequisite and co-requisite modules**

Co-requisites: COMP8810: Object-Oriented Programming, or

COMP8710: Advanced Java for Programmers

1. **The programmes of study to which the module contributes**

Portfolio of Taught Postgraduate Programmes in Computing

1. **The intended subject specific learning outcomes.**  
   **On successfully completing the module students will be able to:**
   1. Demonstrate a systematic understanding of the hardware and software components of a typical computer system, and of how they interact.
   2. Demonstrate originality in applying the principles of abstraction and layering for building complex systems.
   3. Identify the interfaces of abstraction layers and be able to select an appropriate layer on which to build useful systems.
2. **The intended generic learning outcomes.**  
   **On successfully completing the module students will be able to:**
   1. Understand and critically appraise a variety of approaches to decomposing complex problems into simpler parts.
   2. Be able to engage self-directedly with dense and complex professional literature (e.g. documentation, technical papers).
   3. Be able to explain complex techniques to non-experts.
3. **A synopsis of the curriculum**

This module covers the fundamental components (hardware and software) of a typical computer system, and how they collaborate to execute programs. The module provides a comprehensive overview, from the lowest level of abstractions in hardware to the highest level of abstractions of modern programming languages. Examples of topics that may be covered include logic circuits, machine language, processor organization, memory management, processes and concurrency, file systems. Throughout, special attention is paid to abstraction, performance, and other quality requirements.

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**

English, J. (2004). *Introduction to Operating Systems*. Palgrave Macmillan.

Patterson, D and Hennessy, J. (2013). *Computer Organisation and Design*, Fifth Edition. Morgan Kaufman

Nisan, N and Schocken, S. (2005) *The Elements of Computing Systems: Building a Modern Computer from First Principles*. MIT Press

Scott, J.C. (2009) *But How Do It Know? - The Basic Principles of Computers for Everyone.* John C. Scott

1. **Learning and teaching methods**

Total contact hours: 25

Private study hours: 125

Total study hours: 150

1. **Assessment methods**
   1. Main assessment methods

Practical assessment (10 hours) (12.5%)

In course test (3 hour) (12.5%)

Examination (2 hours) (75%)

13.2 Reassessment methods

Like for like.

1. **Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section12) and methods of assessment (section 13)**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Module learning outcome** | *8.1* | *8.2* | *8.3* |  | *9.1* | *9.2* | *9.3* |  |  |  |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |  |
| Lectures | X | X |  |  | X | X | X |  |  |  |
| Classes |  |  | X |  |  |  |  |  |  |  |
| Private study | X | X | X |  | X | X | X |  |  |  |
| **Assessment method** |  |  |  |  |  |  |  |  |  |  |
| Practical assignment | X | X | X |  |  | X |  |  |  |  |
| In course test (Quiz) | X | X |  |  | X |  | X |  |  |  |
| Examination | X | X |  |  |  | X | X |  |  |  |

1. **Inclusive module design**

The School recognises and has embedded the expectations of current equality legislation, by ensuring that the module is as accessible as possible by design. Additional alternative arrangements for students with Inclusive Learning Plans (ILPs)/declared disabilities will be made on an individual basis, in consultation with the relevant policies and support services.

The inclusive practices in the guidance (see Annex B Appendix A) have been considered in order to support all students in the following areas:

a) Accessible resources and curriculum

b) Learning, teaching and assessment methods

1. **Campus(es) or centre(s) where module will be delivered**

Canterbury

1. **Internationalisation**

The topics addressed by this module relate to a field which is of international importance, given the global role of computers in today's technological innovation. The topics covered by this module are international in nature, being identical worldwide and independent of traditional spoken language.

**DIVISIONAL USE ONLY**

**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of the delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
| 01/12/2020 | Minor | September 2021 | 8,9,10,11,13,14 | No |
|  |  |  |  |  |