1. **Title of the module**

EENG3150 (EL315) - Digital Technologies

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

Computing, Engineering and Mathematical Sciences

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

Level 4

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)**

Spring

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

None

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

BEng/MEng Computer Systems Engineering

BEng/MEng Computer Systems Engineering with a Year in Industry

BEng/MEng Electronic and Communications Engineering

BEng/MEng Electronic and Communications Engineering with a Year in Industry

BEng Biomedical Engineering with a Foundation Year

BEng Biomedical Engineering

BEng Biomedical Engineering with a Year in Industry

BEng/MEng Electronic and Computer Engineering with a Foundation Year

BEng/MEng Electronic and Computer Engineering

BEng/MEng Electronic and Computer Engineering with a Year in Industry

BEng Mechanical Engineering with a Foundation Year

BEng Mechanical Engineering

BEng Mechanical Engineering with a year in industry

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will:**
2. Be familiar with the theory underlying modern digital systems.
3. Be able to design, in a structured way, the logic of digital systems.

3. Be familiar with the capabilities and operation of digital CAD facilities.

4. Understand the functional hardware and software components of a typical computer system including operating systems.

5. Appreciate the principles and technologies behind networking and the Internet.

1. **The intended generic learning outcomes.  
   On successfully completing the module students will:**

1. have acquired skills in problem solving

2. have acquired skills in information technology

3. have acquired skills in the application of numerical methods

1. **A synopsis of the curriculum**

This module provides an introduction to contemporary digital systems design. Starting with the fundamental building blocks of digital systems the module outlines both theoretical and practical issues for implementation. Practical work includes the use of digital simulation and analysis software for implementing real-world problems.

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

* Electronics: A Systems Approach (6th Edition), Storey, Pearson, 2017
* Digital Design (5th Edition), Mano and Ciletti, Pearson, 2013
* Digital Design Principles and Practices (5th Edition), Wakerly, Pearson, 2018

1. **Learning and teaching methods**

Total contact hours: 32

Private study hours: 118

Total study hours: 150

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

Exam 60% (2 hours)

Combinatorial Logic Lab (16%)

Sequential Logic 16 (16%)

Computer Architecture (8%)

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* | *8.4* | *8.5* | *9.1* | *9.2* | *9.3* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |
| Private Study | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Lectures | **x** | **x** |  | **x** | **x** | **x** | **x** | **x** |
| Practical classes | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| **Assessment method** |  |  |  |  |  |  |  |  |
| Practical classes | **x** | **x** | **x** | **x** | **x** | **x** | **x** |  |
| Examination | **x** | **x** |  | **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**

Engineering is an international discipline with techniques developed and refined by scientists across the globe. Mastery of the subject-specific learning outcomes, will equip students to apply the theories and techniques of this module in a wide range of international contexts. Methods taught form internationally recognised methods for Digital and Computer Systems Design. The module team includes many members of staff with international experience of teaching and research collaboration. In compiling the reading list, consideration has been given to the range of texts that are available internationally and a selection of texts has been identified to complement the delivery of the material. The support provided to the students is also internationally attuned given our international student body.

**DIVISION 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) |
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