1. **Title of the module**

EENG3110 (EL311) First Year Engineering Applications Project

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)**

Autumn and Spring

1. **Prerequisite and co-requisite modules**
2. **The programmes of study to which the module contributes**

BEng 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 Biomedical Engineering with a Foundation Year

BEng Biomedical Engineering

BEng Biomedical 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 be able to:**

1. plan the progress of a small project;

2. abstract a design challenge to a technical solution;

3. realize a system through the integration of hardware and software;

4. apply fundamental construction techniques relating to a small engineering project.

1. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**
   1. generate, analyse, present and interpret data.
   2. use Information and Communications Technology.
   3. communicate effectively to peers and professional engineers using a variety of methods.
   4. self-evaluate, reason and reflect.
   5. manage time and resources within an individual project.
2. **A synopsis of the curriculum**

The module provides a first attempt to translate a problem into a technical solution. An understanding of the relevant programming/software, electronic and mechanical designs to create a functional solution centred around a microcontroller will be developed. Design skills will be applied to define and fabricate the physical solution informed by the original requirement. An understanding of the fundamentals of programming, electronic and mechanical aspects is assumed and the module proceeds via lectures, workshops and labs supported by supervision and technical advice. It is designed to give practical experience of the concepts introduced in the lectures of the prerequisite modules.

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

* Storey, Neil, Electronics A Systems Approach (6th Edition), Pearson, 2017
* Floyd, Thomas, Electronics fundamentals: circuits, devices and applications (8th edition), Pearson 2013
* Horowitz, Paul and Hill, Winfield, The Art of Electronics (3rd Edition), Cambridge University Press, 2015
* Sangwine, S, Electronic Components and Technology, (3rd Edition), CRC Press, 2017

1. **Learning and teaching methods**

Total contact hours: 50

Private study hours: 100

Total study hours: 150

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

* 10 supervisions each 3 hours effort at 2.0% (20%):
* Three assignments each 6 hours effort at 15% (45%);
* Two professional practice assignments each 2 hours effort at 2.5% (5%);
* One logbook assessment (10%)
* Project demonstration (20%)

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* | *9.1* | *9.2* | *9.3* | *9.4* | *9.5* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |
| Private Study | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Lectures | **x** | **x** | **x** | **x** | **x** | **x** |  |  |  |
| Supervisions | **x** | **x** | **x** |  | **x** |  | **x** | **x** | **x** |
| Professional Practice |  |  | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |
| Supervisions | **x** | **x** | **x** |  | **x** |  | **x** | **x** |  |
| Coursework Assignments | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Professional Practice |  |  | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Logbook | **x** | **x** | **x** | **x** | **x** |  | **x** | **x** | **x** |
| Project demonstration |  |  | **x** | **x** |  |  | **x** | **x** |  |

1. **Inclusive module design**

The Division 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. Engineering in a global activity using internationally standardized techniques for characterization and analysis.

Internationally recognised processes are used. 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.

**DIVISIONAL OFFICE 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) |
| 30/06/16 | Major | September 2016 | 9-12, 14 | No |
| 18/02/19 | Major | January 2020 | 1,5,6,9,12,13 | No |
| 15/10/2020 | Minor | September 2021 | 5,7,9,14,17 | No |
| 11/04/2022 | Minor | September 2022 | 8,10,13,17 | No |