1. **Title of the module**

EENG5620 (EL562) - Engineering Group 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 5

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 courses 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. Demonstrate an ability to apply underlying concepts and principles of analysis and design.

2. Demonstrate an ability of applying engineering techniques to their projects with awareness of commercial, industrial, ethical and other factors, uncertainties and risks.

3. Demonstrate an understanding of data acquisition, mechanical design, and interfacing between hardware and computer and relevant software.

4. Demonstrate an understanding of teamwork, project management and professional practice to their project.

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

1. Use appropriate communication methods to present information

2. Report work using a variety of methods

3. Define and review the work of others

4. Work co-operatively on group tasks and resolve conflict where necessary

5. Organise or effectively participate in project management meetings and identify problems

6. Explore alternate solutions and decide on a course of action

1. **A synopsis of the curriculum**

The module consists of a practical group project involving mechanical and electronic hardware and software. Also included is a series of supporting lectures. Students work in groups of typically four. The project provides an opportunity for students to gain experience not only in technical areas such as PC based data acquisition, computer interfacing, visual programming and hardware design and construction but also in transferable skills including team working, project management, technical presentations and report writing.

1. **Reading list (Indicative list, current at time of publication. Reading lists will be published annually)**
* Programming Arduino with LabVIEW M. Schwartz and O. Manickum Packet Publishing Birmingham (2015) ISBN-978-1-84969-822-1
1. **Learning and teaching methods**

Total contact hours: 49

Private study hours: 101

Total study hours: 150

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

|  |  |  |
| --- | --- | --- |
|  | **Group mark (%)** | **Individual mark (%)** |
| Practical work |  | **15** |
| Specification and preliminary design | **5** |  |
| Group Presentation |  | **15** |
| Group Demonstration |  | **15** |
| Final report and final individual report | **5** | **25** |
| Logbook  |  | **10** |
| Supervision Assessment Autumn Term |  | **5** |
| Supervision Assessment Spring Term |  | **5** |
| **Total** | **10** | **90** |

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* | *9.6* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |  |
| Private Study and group project work | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| Lectures | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| Workshops and Practical Sessions | **X** | **X** | **X** |  |  |  |  |  |  |  |
| Supervisions | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| Presentation | **X** | **X** | **X** | **X** | **X** |  | **X** | **X** | **X** | **X** |
| Demonstration | **X** | **X** | **X** | **X** | **X** |  | **X** | **X** | **X** | **X** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |  |
| Workshops and Practical Sessions | **X** | **X** | **X** |  |  |  |  |  |  | **X** |
| Supervisions | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| Logbook | **X** | **X** | **X** |  | **X** | **X** | **X** | **X** | **X** | **X** |
| Specification and final reports | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| Presentation | **X** | **X** | **X** | **X** | **X** |  | **X** | **X** | **X** | **X** |
| Demonstration | **X** | **X** | **X** | **X** | **X** |  | **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. Students are encouraged to research existing works for their design from a diverse range of globally recognised sources as appropriate. Relevant international standards are followed. The software and hardware components used in the project are also recognised worldwide. 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 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 | 1, 3, 9-10, 12-14 | No |
|  |  |  |  |  |