1. **Title of the module**

EENG3180 (EL318) Engineering Mathematics

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

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

None

1. **The course(s) of study to which the module contributes**

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

BEng/MEng Electronic and Computer Engineering

BEng Electronic and Computer Engineering with a Foundation Year

BEng Biomedical Engineering with a Year in Industry

BEng Biomedical Engineering

BEng Biomedical Engineering with a Foundation Year

BEng Mechanical Engineering with a Year in Industry

BEng Mechanical Engineering

BEng Mechanical Engineering with a Foundation Year

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

1. Demonstrate a familiarity with aspects of functions, set theory, calculus, linear algebra, statistics and probability

2. Demonstrate a fluency in the use of these mathematical tools in problem solving.

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

1. Demonstrate problem solving skills using mathematics

2. Demonstrate the ability to interpret data

1. **A synopsis of the curriculum**

Mathematics is the fundamental language of engineering, allowing complex ideas to be formulated and developed. This course provides the sound basis of mathematical techniques and methods required by almost all other modules in the department's engineering courses. Topics covered include functions, set theory, complex numbers, calculus, linear algebra, statistics and probability.

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

* Engineering Mathematics, 7th edition, 2013, K.A. Stroud, Palgrave, ISBN 978-1137031204

1. **Learning and teaching methods**

Total contact hours: 30

Private study hours: 120

Total study hours: 150

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

3 x mathematics homeworks (5 hours workload each, 10% each) 30%

Examination (3 hours) 70%

13.2 Reassessment methods

Reassessment instrument: examination

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* | *9.1* | *9.2* |
| **Learning/ teaching method** |  |  |  |  |
| Private Study | **x** | **x** | **x** | **x** |
| *Introductory test* | **x** | **x** | **x** |  |
|  |  |  |  |  |
| Assignments | **x** | **x** | **x** | **x** |
| Lectures | **x** | **x** | **x** | **x** |
| **Assessment method** |  |  |  |  |
| Introductory test (unassessed) | **x** | **x** | **x** |  |
| Assignments | **x** | **x** | **x** | **x** |
| Examination | **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. Mathematics is by its nature an international subject where the terminology, notation and methodology is the same across the world. This course uses international recognised notation. 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) |
| 27/04/16 | Major | September 2016 | 8-10, 12-14 | No |
| 11/04/2022 | Minor | September 2022 | 12,13,14 | No |