1. **Title of the module**

EENG0021 (EL021) - Calculus

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 (e.g. Level 4, Level 5, Level 6 or Level 7)**

Level 3

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**

None

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

* BEng Electronic and Computer Engineering including a Foundation Year
* BEng Biomedical Engineering including a Foundation Year
* BEng Mechanical Engineering including a Foundation Year
* Physics with a Foundation Year. Responsibility of the School of Physical Sciences
* Mathematics with a Foundation Year. Responsibility of the School of Mathematics, Statistics and Actuarial Science.

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to:**
   1. Demonstrate a knowledge of Calculus to a level suitable for Level 4 courses;
   2. Apply this knowledge to elementary problem solving;
   3. Undertake more advanced study of these subjects.
2. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**
   1. Demonstrate the ability to manage time.
3. **A synopsis of the curriculum**

This module introduces students to the mathematics of calculus and its applications in engineering. Examples classes are provided to support the student learning.

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

Core Mathematics for Advanced Level, L. Bostock and S. Chandler, Nelson Thornes (Publishers) Ltd., 2000, ISBN 0 7487 55098.

1. **Learning and Teaching methods**

Total contact hours: 44

Private study hours: 106

Total study hours: 150

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

* Exam 2 hours (90%)
* Four Homeworks, each 2-3 A4 pages, each weighted 2.5% (10%)

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 |
| **Learning/ teaching method** |  |  |  |  |
| Private Study | **x** | **x** | **x** | **x** |
| Lectures | **x** | **x** | **x** |  |
| Example classes | **x** | **x** | **x** | **x** |
| **Assessment method** |  |  |  |  |
| Exam (90%) | **x** | **x** | **x** | **x** |
| Homework (10%) | **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. The module team includes many members of staff with international experience of teaching and research collaboration. Calculus is a universal mathematical method for analysing and solving problems that have continuous variables. As such the formulas, notation and applications used in this module will be internationally recognised.

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) |
| 16/03/16 | Major | September 2016 | 10, 12, 13 | No |
| 15/10/2020 | Minor | September 2021 | 2, 6, 7, 13, 17 | No |