1. **Title of the module**

EENG0021 (EL021) - Calculus

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

Engineering and Digital Arts

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**

Co-requisite modules:

* MAST0022 - Graphs and Geometry
* PH7S0020 - Algebra and Arithmetic

Or equivalent.

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

* BEng Computer Systems Engineering including a Foundation Year
* BEng Electronic and Communications 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. Learn effectively for the purpose of continuing professional development.
   2. 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 composed of lectures and example classes

Private study hours: 106

Total study hours: 150

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

* Exam 2 hours (90%)
* Four Homeworks (10%)

13.2 Reassessment methods

Reassessment instrument: 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 | 9.2 |
| **Learning/ teaching method** |  |  |  |  |  |
| Private Study | **x** | **x** | **x** | **x** | **x** |
| Lectures | **x** | **x** | **x** | **x** |  |
| Example classes | **x** | **x** | **x** | **x** | **x** |
| **Assessment method** |  |  |  |  |  |
| Exam (90%) | **x** | **x** | **x** | **x** | **x** |
| Homework (10%) | **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**

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.

**FACULTIES SUPPORT 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 |
|  |  |  |  |  |

Revised FSO Jan 2018