***Note:*** *This sheet does not form part of the specification and will not be published. The information on this sheet provides contextual and supporting information for the approval process and should provide answers to questions that commonly arise in the consideration of new and revised modules. Please type directly into the form, boxes will expand as needed.*

***NB: specifications with errors in formatting, typos and/or on incorrect or incomplete templates will not be considered for approval until corrected.***

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | | | | | | | **YES** | | **NO** |
| 1. New module (if yes, complete numbers 3-8, 10-14) Title of module: | | | | | | | | |  | | x |
| 1. Revised module (if yes, complete numbers 3-14) Title and SDS/KV codes: **EL516/EENG5160 -- Biomechanics** | | | | | | | | | x | |  |
| 1. State which stage this module will be applicable to (information required by KentVision) **Stage 2** | | | | | | | | | | | |
| 1. Is this module (or any consequently withdrawn modules) compulsory in any programmes   (i) in the School which owns the module? | | | | | | | | | x | |  |
| (ii) in programmes owned by other Schools? | | | | | | | | |  | | X |
| 1. Does the introduction/revision of this module, or the withdrawal of other modules, potentially require changes to those programmes? | | | | | | | | |  | | X |
| 1. If so, are those potential changes the result of:   (i) Changes to the Learning Outcomes of this module? | | | | | | | | |  | |  |
| (ii) Changes to the term(s) in which this module is delivered? | | | | | | | | |  | |  |
| (iii) Changes to pre- and co-requisite modules? | | | | | | | | |  | |  |
| (iv) Other (please specify) | | | | | | | | |  | |  |
| 1. If the answer to any of questions 4.2 to 6 is Yes - confirm that all the owners of the programmes listed in section 7 of the specification have been informed | | | | | | | | |  | |  |
| 1. Will any modules be withdrawn as a result of the introduction of this module/changes to the module? *If yes, please provide the module code and title and information required (see Annex B of the Code of Practice* [*https://www.kent.ac.uk/teaching/qa/codes/taught/annexb.html*](https://www.kent.ac.uk/teaching/qa/codes/taught/annexb.html)*)* | | | | | | | | |  | | x |
| 1. Please indicate which sections of the specification have been revised. NB the approval panel will look at the whole specification and may comment on sections that have not been revised in this submission | | | | | | | | |  | | |
| 1 | 2 | 3 | 4 | 5 x | 6 | 7 | 8 | |
| 9 | 10 | 11 | 12 | 13 x | 14 x | 15 | 16 | |
| 17 | 18 | 19 |  |  |  |  |  | |
| 1. Are there any implications for learning resources, including staff, library, IT and space? If yes, please confirm the School has considered and planned for the allocation of the resources required | | | | | | | | |  | | x |
| 1. Term and year the revised version/new module will start **September 2020** / **AY 2020-21** | | | | | | | | | | | |
| 1. Date this version of the module specification was approved by the School EC or GSC (and Board of Studies if appropriate) **November 2019** | | | | | | | | | | | |
| 1. Rationale: please provide any contextual information that will assist members of the approval panel who may not be familiar with the discipline and custom and practice in your School **The overall coursework mark is reduced to better reflect the effort students have to put in it compared to the exam. The LO of Lab report is amended. The other piece of CW will address these Los.** | | | | | | | | | | | |
| 1. Please provide any additional information that may assist the approval panel, for example the rationale for assessment or an explanation of the learning and teaching methods if these vary from a commonly seen pattern   **With this modification the overall coursework mark will be below 30%** | | | | | | | | | | | |
| 1. High risk of non-delivery: confirm that more than one person is available to teach this module and that the School Plan includes consideration of resources, cover and succession planning | | | | | | | | x | |  | |
| 1. School/Faculty to confirm that consideration has been given to the title and curriculum description to ensure these are not overly constraining | | | | | | | | X | |  | |

***Please complete this proforma if this is a request for a module AMENDMENT. Delete it if this is NOT for an amendment and use the NEW module proforma on previous page***

|  |  |
| --- | --- |
| MODULE CHANGE REQUEST  Note : Date the changes take effect must be supplied in order for these changes to be made | |
| Module Code:  EL516 / EENG5160 | **Change Required:**  **revised assessment pattern** |
| Current Module Title:  Biomechanics | |
| New Module Title: | |
| Add a delivery Campus: | **Canterbury** |
| Change week beginning: | |
| Credit Change From: | **To:** |
| Change to Assessment Pattern:  Detailed Assessment Pattern Component Breakdown:   |  |  | | --- | --- | | *Lab Report (5 pages)* | *10%* | | *Assignment (4 pages)* | *15%* | | *Final Examination (2 hours)\*\** | *75%* | | |
| Change in reassessment method: | |
| Date changes take effect: September 2020 (AY 2020-21) | |
| Notes: | |

1. **Title of the module**

EENG5160 (EL516) Biomechanics

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

Engineering and Digital Arts

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)**

Spring

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

Pre-requisite: EL318 Engineering Mathematics

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

BEng Biomedical Engineering

BEng Biomedical 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 knowledge and understanding of the fundamental principles of statics and dynamics.

2. demonstrate knowledge and understanding of the fundamental principles of machinery.

3. describe a mechanical system using mathematical models.

4. apply mechanics analysis for solving problems involving particles and rigid bodies.

5. demonstrate familiarity with the applications of mechanics to biology and physiology

6. solve engineering problems by reducing them to their parts and applying scientific analysis.

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

1. generate, analyse, present and interpret data.

2. communicate more effectively in writing.

3. learn effectively for the purpose of continuing professional development.

4. think critically.

5. manage their time and resources.

1. **A synopsis of the curriculum**

The aim of this module is to provide the students with the understanding of how the human body can be represented as a mechanical system and then analysed using principles of mechanics. For example the module explains how muscles and joints act as structures to provide equilibrium or generate movement. To achieve this, the module introduces firstly the concepts of statics, dynamics and mechanisms, and subsequently the module shows how these concepts can be applied to analyse the human body as a mechanical system.

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

* Engineering Mechanics: Statics and Mechanics – Costanza, Plesha and Gray, Mc Graw Hill, 2012,
* Meriam Engineering Mechanics: Statics SI Version, by J. L. Meriam ,‎ L. G. Kraige ,John Wiley & Sons; International student edition (8 Jan. 2008)
* Kinematics, Dynamics, and Design of Machinery, by Kenneth J. Waldron,‎ Gary L. Kinzel ,‎ Sunil K. Agrawal,Wiley-Blackwell; 3rd Edition (10 Jun. 2016)

1. **Learning and teaching methods**

Total contact hours: 38

Private study hours: 112

Total study hours: 150

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

* Exam 2 hours 75%
* Lab report 10% - typically 5 A4 pages
* Assignment 15%- typically 4 A4 pages

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 | 8.5 | 8.6 | 9.1 | 9.2 | 9.3 | 9.4 | 9.5 |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |  |  |
| Private Study | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Lectures | **x** | **x** | **x** | **x** | **x** |  |  |  | **x** | **x** |  |
| Lab classes | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Example classes | **x** | **x** | **x** | **x** | **x** | **x** |  |  |  | **x** |  |
| **Assessment method** |  |  |  |  |  |  |  |  |  |  |  |
| Exam | **x** | **x** | **x** | **x** | **x** | **x** |  |  | **x** | **x** |  |
| Lab reports | **x** |  | **x** |  | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Assignment | **x** | **x** | **x** | **x** | **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**

Internationally recognised books are used to present the material presented in this course.

The module will use internationally developed and recognised notation and mathematics models for biomechanics.

**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) |
| 11/02/19 | Major | September 2019 | 3, 13 | No |
|  |  |  |  |  |

Revised FSO Jan 2018