1. **Title of the module**

BIOS3000 (BI300) - Introduction to Biochemistry

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

Biosciences

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 credits)

1. **Which term(s) the module is to be taught in (or other teaching pattern)**

Autumn and Spring

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

Prerequisite: A level Biology or equivalent, or BIOS3050 Fundamental Human Biology

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

Biochemistry and related programmes

Biomedical Science and related programmes

Biology and related programmes

Biomedical Engineering and related programmes

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

8.1 Demonstrate a basic understanding of the composition, structure and function of the major groups of molecules in cells; nucleic acids, proteins, carbohydrates and lipids.

8.2 Demonstrate a basic understanding of the principles of purification, separation and characterisation of macromolecules.

1. **The intended generic learning outcomes.
On successfully completing the module students will be able to:**
	1. Demonstrate competence in basic laboratory skills, calculations and problem solving.

9.2 Demonstrate competence in report writing.

1. **A synopsis of the curriculum**

This course will provide an introduction to biomolecules in living matter. The simplicity of the building blocks of macromolecules (amino acids, monosaccharides, fatty acids and purine and pyrimidine bases) will be contrasted with the enormous variety and adaptability that is obtained with the different macromolecules (proteins, carbohydrates, lipids and nucleic acids). The nature of the electronic and molecular structure of macromolecules and the role of non-covalent interactions in an aqueous environment will be highlighted. The unit will be delivered though lectures, formative practicals and related feedback sessions to ensure students fully understand what is expected of them. Short tests (formative assessment) will be used throughout the unit to test students' knowledge and monitor that the right material has been extracted from the lectures.

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

Core text:

* Nelson DL, Cox MM, Lehninger Principles of Biochemistry, 7th Edition, W.H. Freeman, 2017

Alternative core texts (buy only one of):

* Berg JM, Stryer L, Tymoczko JL, Gatto GJ, Biochemistry, 9th Edition, Macmillan HE, 2019
* Garrett RH, Grisham CM, Biochemistry, 6th (international) Edition, Cengage, 2017

Background reading:

* Alberts B, Essential Cell Biology, 5th Edition, W W Norton (ex Garland Press), 2019
* Taylor MR, Simon EJ, Reece JB, Dickey J, Hogan KA, Campbell NA, Campbell Biology: Concepts & Connections, 9th Edition, Pearson, 2018

Recommended Reading:

* Catch-Up Reading: Crowe J, Bradshaw T, Chemistry for the Biosciences: The Essential Concepts, 3rd Edition, Oxford University Press, 2014
1. **Learning and teaching methods**

Total contact hours: 47

Private study hours: 103

Total study hours: 150

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

Practical (20%) 3 hr

MCQ Assessments – 40 questions (20%)

Exam (60%) 2 hr

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* | *9.1* | *9.2* |
| **Learning/ teaching method** |  |  |  |  |
| **Private Study** |  |  |  |  |
| *Lectures* | **x** | **x** |  |  |
| *Laboratory* | **x** | **x** | **x** | **x** |
| *Feedback* | **x** | **x** | **x** | **x** |
| **Assessment method** |  |  |  |  |
| *Test* | **x** | **x** |  |  |
| *Practical* | **x** | **x** | **x** | **x** |
| *Examination* | **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**

Biosciences is an international discipline. This module presents subject-specific knowledge, research approaches and techniques, generated, developed and refined by scientists around the world. Mastery of the learning outcomes will equip students to apply the theories and techniques of the module in a wide range of international contexts. In compiling the reading list, consideration has been given to the range of texts that are available internationally and a selection has been identified to complement the delivery of the material. The School of Biosciences is an international community of students and staff. Group activities e.g. in practicals, tutorials, workshops and self-study will naturally draw on the international make-up of the student body; the module teaching team includes members with international experience of teaching and research collaboration.

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**Revision record – all revisions must be recorded in the grid and full details of the change retained in the appropriate committee records.**

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| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of the delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
| 20/01/20 | Minor | Sep 2020 | 5, 11-13 | No |
|  |  |  |  |  |

Revised FSO Feb 2020