1. **Title of the module**

BIOS6040 (BI604) - Biological Membranes

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 6

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**

None

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

Biochemistry and related programmes

Biomedical Science and related programmes

Biology and related programmes

1. **The intended subject specific learning outcomes.  
   On successfully completing the module students will be able to:**
2. Demonstrate an understanding of membrane structure, traffic and transport, and understand the molecular basis of several common genetic diseases in this area.
3. Demonstrate ability to integrate data from laboratory and computer-based analyses.
4. **The intended generic learning outcomes.  
   On successfully completing the module students will be able to:**
5. Demonstrate a range of computer skills important to final year projects and to scientific research.
6. Demonstrate the ability to solve honours level problems using scientific data.
7. **A synopsis of the curriculum**

Cells and subcellular compartments are separated from the external milieu by lipid membranes with protein molecules inserted into the lipid layer. The aim of this module is to develop understanding of both the lipid and protein components of membranes as dynamic structures whose functions are integrated in cellular processes.

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

Core texts:

*Lehninger Principles of Biochemistry.* D.L. Nelson and M. M. Cox. 7th edition, W.H. Freeman (Macmillan), 2017; and

*Membrane Structural Biology: with Biochemical and Biophysical Foundations.* M. Luckey, 2nd edition, Cambridge University Press, 2014

In addition, students will be given references to articles in a number of key review and to primary research papers

1. **Learning and teaching methods**

Total contact hours: 38

Private study hours: 112

Total study hours: 150

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

Practical (30%) 2500 word limit based on combined computer and wet lab investigation

Exam, 2 hr (70%)

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 | **x** | **x** |  | **x** |
| Lectures | **x** |  |  |  |
| **Assessment method** |  |  |  |  |
| Practical | **x** | **x** | **x** | **x** |
| Exam | **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**

Bioscience 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.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of the delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
| 18 Dec 18 | Major | January 2020 | 9, 11, 13, 14 | no |
| 20/01/20 | Minor | Sept 2020 | 13 | No |

Revised FSO Feb 2020