1. **Title of the module**

BIOS5200 (BI520) - Metabolism and Metabolic Disease

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 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)**

Autumn

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

Prerequisite:

First year core modules for BSc Biochemistry or BSc Biomedical Science

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

BSc Biochemistry and related programmes

BSc Biomedical Science and related programmes

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

8.1. Understand selected mechanisms that can lead to human metabolic diseases, and their genetic basis.

8.2. Recall metabolic maps that relate the main pathways of catabolism and biosynthesis to each other.

8.3. Understand how metabolic pathways interact with each other, including those in different tissues.

8.4. Understand selected chemical mechanisms that underpin the metabolism studied.

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

9.1. Communicate using a variety of methods .

9.2. Analyse data relating to metabolic defects and report results.

9.3. Solve problems.

1. **A synopsis of the curriculum**

This module covers the general principles of metabolic disorders and focuses on pathways, enzyme mechanisms, and diseases associated with:

Energy metabolism

Amino acid/nucleotide metabolism

The urea cycle

Cholesterol metabolism

Vitamin metabolism

Heme synthesis/breakdown

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

**Core Text:**

* Nelson DL, Lehninger Principles of Biochemistry. Editions 5 – 7.

Selected articles from scientific journals may also be recommended.

**Recommended Reading:**

* Clarke, Joe T. R., A Clinical Guide to Inherited Metabolic Diseases. Cambridge: Cambridge University Press, 2010. 3rd ed. e-book edition (via library catalogue).
* Osgood M, Ocorr KA, The Absolute, Ultimate Guide to Lehninger Principles of Biochemistry: Study Guide and Solutions Manual, 6th edition, W.H. Freeman, 2012.
* Newsholme and Leech, Functional Biochemistry in Health and Disease. Chichester; Wiley, 2009. Hardcopies and e-book (via library catalogue).

1. **Learning and teaching methods**

Total contact hours: 23

Private study hours: 127

Total study hours: 150

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

In Class Test (20%)

Computer practical report (20%) – 2000 words

Exam, 2 hr, (60%)

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* | *9.1* | *9.2* | *9.3* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |
| Lectures | **X** | **X** | **X** | **X** |  | **X** | **X** |
| Workshop | **X** |  |  | **X** | **X** | **X** |  |
| Computer practical | **X** | **X** |  | **X** | **X** | **X** | **X** |
| Revision and reading | **X** | **X** | **X** | **X** |  | **X** | **X** |
| Workshop material | **X** |  |  | **X** | **X** | **X** |  |
| Computer practical report | **X** | **X** |  | **X** | **X** | **X** | **X** |
| **Assessment method** |  |  |  |  |  |  |  |
| ICT test | **X** | **X** | **X** | **X** |  |  | **X** |
| Computer practical report | **X** | **X** |  | **X** | **X** | **X** | **X** |
| Examination | **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:

1. Accessible resources and curriculum
2. Learning, teaching and assessment methods
3. **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.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of the delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
| 10/12/18 | Minor | September 2019 | 10 | no |
| 20/01/20 | Minor | September 2020 | 11, 13, 14 | no |

Revised FSO Feb 2020