1. **Title of the module**

BIOS3240 (BI324) – Genetics and Evolution

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

Division of Natural Sciences

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)

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

Autumn (Term 1)

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

None

1. **The course(s) of study to which the module contributes**

Compulsory for BSc Biomedical Science and related programmes; BSc Biochemistry and related programmes; and BSc Biology and related programmes

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

8.1 Demonstrate the ability to predict outcomes in monohybrid and dihybrid crosses using Mendelian genetics.

8.2 Demonstrate a basic understanding of patterns of inheritance that do not obey Mendelian Principles.

8.3 Demonstrate the ability to analyse pedigrees and predict the inheritance of human genetic disease.

8.4 Demonstrate a basic understanding of DNA mutation and of horizontal gene transfer and their role in evolution.

8.5 Demonstrate a basic understanding of Darwin’s observations and the role of genetics in speciation and evolution.

8.6 Demonstrate an ability to quantify the distribution of genes in populations.

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

9.1 Retrieve and interpret information.

9.2 Demonstrate knowledge and understanding of experimentation, data acquisition, analysis, and presentation.

9.3 Demonstrate knowledge of computational analysis.

1. **A synopsis of the curriculum**

This module is an introduction to Mendelian genetics, and it will also address human pedigrees, quantitative genetics, and mechanisms of evolution.

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

Freeman S. and Herron J.C. (2016). *Evolutionary Analysis*, *Global Edition*. (5th Edition). New York, NY: Pearson Education Inc.

Reece, J., Urry, L. Cain, M., Wasserman, S., Minorsky, P. & Jackson, R. (2017). *Campbell Biology* (10th Edition). New York, NY: Pearson Education Inc.

1. **Learning and teaching methods**

Total Contact Hours: 40

Total Private Study Hours: 110

Total Study Hours: 150

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

* Lab Report (1,500 words) – 20%
* MCQ Test (40 questions) – 20%
* Examination (2 hours) – 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* | *8.5* | *8.6* | *9.1* | *9.2* | *9.3* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |
| Private Study | **x** | **x** | **x** | **x** | **x** | **x** | **x** |  |  |
| Workshop | **x** | **x** |  |  |  | **x** |  |  | **x** |
| Practical |  |  |  | **x** |  |  |  | **x** | **x** |
| Lectures | **x** | **x** | **x** | **x** | **x** | **x** | **x** |  |  |
| **Assessment method** |  |  |  |  |  |  |  |  |  |
| Lab Report |  |  |  | **x** |  |  |  | **x** | **x** |
| MCQ Test | **x** | **x** | **x** | **x** | **x** | **x** | **x** |  |  |
| Examination | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |

1. **Inclusive module design**

The Division 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 Division of Natural Sciences 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.

**DIVISION USE ONLY**

**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 delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
| 17/12/20 | Major | Sept 2021 | 11 & 13 | No |
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| Revised FSO Jan 2018 |