1. **Title of the module**

DICE8770 (DI877) Population and Evolutionary Biology

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

Division of Human and Social Sciences

1. **The level of the module (Level 4, Level 5, Level 6 or Level 7)**

Level 7

1. **The number of credits and the ECTS value which the module represents**

15 (7.5 ECTS)

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

Autumn or Spring

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

 None

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

MSc Conservation and cognate pathways

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

8.1. discuss a knowledge of the main evolutionary processes that influence populations and how they evolve, including natural selection, genetic drift and inbreeding, and how they interact to influence populations of threatened species.

8.2. demonstrate an understanding of key processes that underpin population biology, such as population growth and density, and extinction.

8.3. demonstrate a comprehension of evolutionary phylogenetics, how phylogenies can be constructed and interpreted.

8.4. demonstrate an understanding of the importance of surveying natural populations.

8.5. demonstrate an understanding of meta-population dynamics in population biology.

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

9.1 demonstrate critical thinking concerning contemporary issues in population and evolutionary biology

9.2 integrate theoretical models and practical data

9.3 demonstrate effective presentation skills and write concise reports

9.4 assess and appraise case studies within the subject area

10. **A synopsis of the curriculum**

This module provides an introduction to evolutionary and population biology, starting with the main evolutionary processes that influence populations and how they evolve, and leading into the established theory that underpins population biology. Associated topics also covered will include evolutionary phylogenetics, population assessment and meta-population dynamics.. Population genetic mechanisms are also considered, such as natural selection, genetic drift and inbreeding, and how they interact to influence populations of threatened species, together with an understanding of molecular genetic techniques and how to interpret genetic data.

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

Groom, M.J., Meffe, G.K., & Carroll, C.R. (2006) Principles of Conservation Biology *Sinauer,* Massachusetts.

Frankham, R., Ballou, J. D. & Briscoe, D. A. (2002). *Introduction to Conservation Genetics*. Cambridge University Press.

Bennett, P. M. & Owens, I. P. F. (2002). *Evolutionary Ecology of Birds – Life histories, mating systems and extinction*. Oxford Series in Ecology & Evolution. Oxford University Press.

Maynard Smith, J. (1998). *Evolutionary Genetics*. Oxford University Press.

Landweber, L. F. & Dobson, A. P. (1999). *Genetics and the extinction of species – DNA and the conservation of biodiversity*. Princeton University Press, New Jersey.

12. **Learning and teaching methods**

Total contact hours: 18

Private study hours: 132

Total study hours: 150

13. **Assessment methods**

Written Assignment (1500 words excluding references and figures) (50%)

Molecular genetics Write-Up (3000 words) (50%)

13.2 Reassessment methods

100% coursework

14*. Map of module learning outcomes (sections 8 & 9) to learning and teaching methods (section12) and methods of assessment (section 13)*

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| **Module learning outcome** | *8.1* | *8.2* | *8.3* | *8.4* | *8.5* | *9.1* | *9.2* | *9.3* | *9.4* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |
| **Private Study** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| *Seminars* | **X** | **X** | **X** | **X** | **X** | **X** |  | **X** | **X** |
| *Applied activities* | **X** | **X** |  |  |  |  | **X** |  |  |
| **Assessment method** |  |  |  |  |  |  |  |  |  |
| *Written Assignment* | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |
| *Molecular Genetics Report* | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |

15. **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

16. **Campus(es) or centre(s) where module will be delivered**

Canterbury

17. **Internationalisation**

This module exposes students to the global dimensions and relevance of population and evolutionary biology, while encouraging a critical understanding of how quantitative and qualitative methodologies critically complement one when it comes to addressing conservation challenges. Case studies presented and reviewed come from different parts of the world and students are exposed to a wide breadth of research produced by prominent international research experts and groups, including international collaborative efforts. These elements are central to the internationalisation dimension of this module and its global scope.

**DIVISIONAL 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) |
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