1. KentVision Code and title of the module

BIOS8590 – Practical Molecular Biology and Genome Editing

## Division and School/Department or partner institution which will be responsible for management of the module

Division of Natural Sciences (Biosciences)

## The level of the module (Level 4, Level 5, Level 6 or Level 7)

Level 7

## The number of credits and the ECTS value which the module represents

15 Credits (15 ECTS)

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

Autumn

## Prerequisite and co-requisite modules and/or any module restrictions

None

## The course(s) of study to which the module contributes

Compulsory for the following courses:

MSc Cancer Biology and Therapeutics

MSc Reproductive Medicine: Science and Ethics

MSc Biotechnology and Bioengineering

MSc Infectious Diseases

MSc Biomedicine

MSc Biotechnology and Business

Not available as an elective module.

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

8.1 Demonstrate thorough understanding of key principles in molecular biology and their cutting edge developments;

8.2 Demonstrate extensive understanding of practical modern molecular biology and genome editing, and its application to solve discipline-specific research problems;

8.3 Demonstrate comprehensive understanding of the principles of hypothesis-driven experimental research design and data analysis within a biological research context.

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

9.1 Work safely in a laboratory environment;

9.2 Organise and present scientific findings clearly and in line with professional norms and expectations;

9.3 Work independently and as part of a research group using peer support, diplomacy and collective responsibility;

9.4 Demonstrate time and workload management in order to meet personal targets and imposed deadlines;

9.5 Use of appropriate technology to retrieve, analyse and present scientific information.

## A synopsis of the curriculum

The module aims to develop understanding and practical skills in molecular biology, based around interactive workshops, practical sessions and group work. The module will involve practical sessions covering key practical and transferable skills in molecular biology and biotechnology. The module will feature an extended mini-project focused on CRISPR-Cas9-based genome editing - a cutting-edge technology with wide application in the biological sciences – alongside presentation of findings in extended written report format to provide experience of the dissemination platform widely used in biological research.

## Reading list

## The University is committed to ensuring that core reading materials are in accessible electronic format in line with the Kent Inclusive Practices.

## The most up to date reading list for each module can be found on the university's [reading list pages](https://kent.rl.talis.com/index.html).

## Contact Hours

Private Study: 127

Contact Hours: 23

Total: 150

## Assessment methods

13.1 Main assessment methods

* Lab Report (4,000 words) – 100%

13.2 Reassessment methods

* Like-for-like

## Map of module learning outcomes (sections 9 & 10) to learning and teaching methods (section 13) and methods of assessment (section 14)

**Module learning outcomes against learning and teaching methods:**

| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 9.1 | 9.2 | 9.3 | 9.4 | 9.5 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Practical sessions | **X** | **X** | **X** | **X** |  | **X** | **X** |  |
| Self-study | **X** |  | **X** |  | **X** |  | **X** | **X** |

**Module learning outcomes against assessment methods:**

| **Module learning outcome** | 8.1 | 8.2 | 8.3 | 9.1 | 9.2 | 9.3 | 9.4 | 9.5 |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Lab Report | **X** | **X** | **X** | **X** | **X** | **X** | **X** | **X** |

## 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

## Campus(es) or centre(s) where module will be delivered

Canterbury

## Internationalisation

Science is an international discipline with widely applicable international resonance. This module presents subject-specific knowledge generated, developed, and refined by scientists around the world. Mastery of the learning outcomes will equip students to apply the knowledge in a wide range of international contexts and these will be addressed in making the content relevant to current global issues. The Division of Natural Sciences is an international community of students and staff and group activities and teaching will provide a platform for internationally-focussed discussion.

**DIVISIONAL USE ONLY**

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

| Date approved | New/Major/minor revision | Start date of delivery of (revised) version | Section revised  (if applicable) | Impacts PLOs (Q6&7 cover sheet) |
| --- | --- | --- | --- | --- |
| 16 Dec 2021 | Minor | September 2022 | 12, 14 | No |
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| Revised FSO Jan 2018 |