1. **Title of the module**

BIOS8700 (BI870) – Molecular Cytogenetics and Preimplantation Genetic Testing

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 7

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

Optional for MSc Reproductive Medicine: Science and Ethics; and MSc Biomedicine

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

8.1 Demonstrate a broad knowledge and understanding of clinical and scientific aspects Molecular Cytogenetics and Preimplantation Genetic Testing (PGT) as outlined in the course content.

8.2 Demonstrate the ability to search, synthesise and evaluate the scientific and medical literature pertaining to PGT.

8.3 Demonstrate the ability to analyse and evaluate unfamiliar scenarios and apply the knowledge gained in unfamiliar situations.

8.4 Demonstrate confident practical skills like those practised in the world of PGT and molecular cytogenetics.

8.5 Demonstrate the ability to record their practical skills and findings and present them as a well organised laboratory notebook.

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

9.1 Demonstrate an ability to search primary texts as well as secondary sources and marshal information effectively.

9.2 Display a critical and analytical perspective of the medical literature.

9.3 Demonstrate independence of thought and originality in the presentation of given material.

9.4 Demonstrate the ability to reference material properly and present a bibliography in a professional manner.

9.5 Demonstrate the ability to present a range of media (graphs, tables, figures, video, large datasets etc.) in an appropriate fashion.

1. **A synopsis of the curriculum**

The aim of this module is to give students a basic understanding of molecular and cytogenetic techniques and their applications in the field of clinical diagnosis e.g. for infertility or prenatal diagnosis and biological research. Throughout the course there will be both theoretical and practical elements to the course enabling them to have hands-on experience with molecular cytogenetic tools. Students will be examined on both theoretical and practical elements to assess hands-on skills and understanding of the techniques involved. They will be provided with a lab book in which they should take notes during each of the sessions, the quality of this will also be assessed.

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

Griffin, D.K. and Harton, G.L., eds. (2020). *Preimplantation Genetic Testing: Recent Advances in Reproductive Medicine.* Boca Raton, London, New York: CRC Press.

Kuliev, A Rechitsky, S., and Simpson, J.L. (2020). *Practical Preimplantation Genetic Testing*. Cham: Springer.

1. **Learning and teaching methods**

Total Contact Hours: 30

Total Private Study Hours: 120

Total Study Hours: 150

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

* In-Course Test x 6 (10 minutes each) – 20%
* Reflective Log (1,000 words) – 20%
* Karyotyping Test (60 minutes) – 20%
* Presentation (15 minutes) – 20%
* Final Test (45 minutes) – 20%

Both the karyotyping test and the presentation are compulsory sub-elements and must be passed to complete the module

13.2 Reassessment methods

* 100% Coursework

1. ***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* | *9.5* |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |  |
| Private Study | **x** |  | **x** |  | **x** | **x** | **x** | **x** | **x** | **x** |
| Laboratory |  | **x** | **x** | **x** | **x** |  |  |  |  | **x** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |  |
| In-Course Assessment |  |  |  | **x** | **x** |  |  |  |  |  |
| Reflective Log |  |  | **x** | **x** | **x** |  |  | **x** |  |  |
| Karyotyping Test |  |  |  | **x** |  |  |  |  |  | **x** |
| Presentation | **x** | **x** |  |  |  | **x** | **x** | **x** | **x** |  |
| Final Test | **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 and Dubai

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) |
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