1. **Title of the module**

LABS403 Microbiology

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

Digital and Lifelong Learning

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)**

Flexible delivery model

Autumn and/or Spring and/or Summer

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

N/A

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

FdSc and BSc (Hons) in Applied Bioscience

FdSc and BSc (Hons) in Applied Chemical Sciences

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

8.1 Understand the diversity and principles of classification of micro-organisms.

8.2 Demonstrate an understanding of the use and importance of health and safety, including risk assessment, aseptic techniques, and disinfectants, within the working microbiological environment.

8.3 Understand the underlying concepts and principles associated with microbial structure and function.

8.4 Apply an understanding of culturing techniques to the growth and maintenance microorganisms.

8.5 Demonstrate an understanding of the identification and isolation of bacteria (to species level) using appropriate culture and diagnostic techniques.

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

9.1 Demonstrate the development of practical/technical skills.

9.2 Analyse, evaluate and correctly interpret data.

9.3 Communicate and present data effectively.

9.4 Obtain and use information from a variety of sources as part of self-directed learning.

9.5 Manage time and use organisation skills within the context of self-directed learning.

1. **A synopsis of the curriculum**

# The module will cover the structure and function of microbial cells and how this leads to the classification and identification of microbes. This will include multiple techniques that can be used to observe and identify microbes, including culturing and aseptic technique. Microbial diversity classification. This will also cover culture collections, microbial growth dynamics, and safe handling of microbes, and how these are involved in the growing and maintaining microbial cells.

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

# Hogg, S (2013) Essential Microbiology. 2nd edition. Wiley-Blackwell.

Sandle, T (2016) Pharmaceutical microbiology : essentials for quality assurance and quality control. Woodhead Publishing Limited.

Madigan, M. et al. (2019) Brock Biology of microorganisms. 15th edition. Pearson International.

1. **Learning and teaching methods**

Blended distance learning:

 Contact hours: 120 hours

 Private Study Time: 30 hours

 Total Learning Time: 150 hours

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

Essay assignment (1, 600 words; 70%)

Moodle quiz (30%)

Both assessments must be passed to pass the module. The pass mark for this module is 40%.

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 | 9.1 | 9.2 | 9.3 | 9.4 | 9.5 |
| **Learning/ teaching method** |  |  |  |  |  |  |  |  |  |  |
| **Private Study** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Teaching | **x** | **x** | **x** | **x** | **x** |  | **x** | **x** |  |  |
| Work based experience |  |  |  |  |  | **x** | **x** | **x** | **x** | **x** |
| **Assessment method** |  |  |  |  |  |  |  |  |  |  |
| Assignment |  | **x** |  | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Moodle Quiz | **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**

Blended distance learning – Canterbury or Medway campus

1. **Internationalisation**

International vocation is an important part of Applied Bioscience. The intended learning outcomes 8.1 and 8.3, for this module cover key universal principles and concepts of microbiology and therefore are core components of Applied Bioscience worldwide. Also, learning outcomes 8.2, 8.4 and 8.5, cover key universal techniques and principles used in the pharmaceutical R&D industry worldwide. Furthermore, pathogen classification covered in the learning objectives, and learning objective 8.2 draws on and compares current standards and regulations across Europe.

**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.**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Date approved | Major/minor revision | Start date of delivery of revised version | Section revised | Impacts PLOs (Q6&7 cover sheet) |
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