1. **Title of the module**

LABS403 Microbiology

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

Centre for Higher and Degree Apprenticeships

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 Demonstrate the ability to describe the diversity and classification of micro-organisms.

8.2 Demonstrate an understanding and appreciation of the role of Health & Safety and Risk Assessment in the working microbiological environment.

8.3 Demonstrate knowledge of the underlying concepts and principles associated with microbial structure and function.

8.4 Make appropriate use of basic microbiological techniques.

8.5 Demonstrate the ability to isolate and identify 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 their time and use their organisation skills within the context of self-directed learning.

1. **A synopsis of the curriculum**

# Microbial diversity and classification

Safe handling of microbes

Structure and function of micro-organisms

Collection and storage of working culture collections

Observing microbes: microscopy and culture

Isolation and identification of micro-organisms

Microbial growth dynamics

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

# Hugo & Russell (2011) Pharmaceutical Microbiology, 8th edition. Wiley-Blackwell.

Rosenberg, E. (2013) [The Prokaryotes Applied Bacteriology and Biotechnology](https://librarysearch.kent.ac.uk/client/en_GB/kent/search/results?qu=bacteriology&qf=FORMAT%09Format%09ER%09Ebooks&ir=Library&isd=true). Springer.

Madigan, M. et al. (2009) Brock Biology of microorganisms. Pearson International.

Baker, S. (2011) Microbiology. Garland Science.

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

Portfolio, two coursework assignments and exam

Weighting:

2 Essay Assignments 40% (20% each)

Portfolio 30% - composed of 5 individual assignments where topics are applied to the workplace

Exam 30% - MCQs

The weighted average for both the overall coursework and the overall exam component must be of a pass standard.

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** |  |  |  |  |  |  |  |  |  |  |
| Assignments | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |
| Exam MCQ | **x** | **x** | **x** | **x** | **x** |  |  |  |  | **x** |
| Portfolio | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** | **x** |

1. **Inclusive module design**

The School/Collaborative Partner 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.

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**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) |
| 05/10/20 | Minor | Sep 20 | 13 | No |
|  |  |  |  |  |