# MODULE SPECIFICATION

| Part 1: Information | | | |
|---|---|---|---|
| Module Title | Microbiology | | |
| Module Code | USSKB6-15-2 | Level | 2 |
| For implementation from | September 2018 | | |
| UWE Credit Rating | 15 | ECTS Credit Rating | 7.5 |
| Faculty | Health and Applied Sciences. | Field | Applied Sciences |
| Department | Department of Applied Sciences. | | |
| Contributes towards | BSc (Hons.) Biomedical Science, BSc (Hons.) Biomedical Science (with Foundation Year); MSci Biomedical Science; MSci Biomedical Science (with Foundation Year). BSc (Hons.) Healthcare Science (Life Sciences) | | |
| Module type: | Standard | | |

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| Pre-requisites | Pathophysiology of Disease (USSKA7-30-1) |
| Excluded Combinations | None |
| Co- requisites | None |
| Module Entry requirements | None |

## Part 2: Description

This module aims to deepen your understanding of microorganisms, in particular of bacteria and viruses. By covering fundamental aspects of the bacterial genome, cell structure and physiology, you will gain an insight into their roles in bacterial adaptability, survival and pathogenicity. You will learn about viruses, including viruses of bacteria (bacteriophages), how they are cultivated and their replication cycles.

Syllabus Outline

- Bacterial growth and death: optimising growth and analysing death
- The structure and significance of bacterial cell walls and outer membranes
- Bacterial transport and communication systems: uptake and efflux, quorum sensing
- Evolution, the bacterial genome and recombinant DNA technology
- The viruses: virus structure, classification and replication
- Microbial diseases, virulence factors and control of disease: focus on specific pathogens in the context of the generalised infection cycle and an introduction to epidemiology

**Part 3: Assessment: Strategy and Details**

The controlled component is a written exam to be held during the Summer Assessment Period. This assessment will provide students with an opportunity to demonstrate both their knowledge on a broad range of topics through a series of multiple choice questions, and more in-depth knowledge though a selection of medium length questions. This assessment will test the full range of learning outcomes and will provide a valuable learning experience through recalling and demonstrating knowledge which will be of benefit when progressing to final year modules.

The coursework comprises two elements:

The first is a researched essay which will require students to complete a 1000 word written account on an aspect of microorganisms. This exercise provides a valuable learning experience through applying knowledge whilst supporting and expanding upon this through the published literature. It is designed to encourage discussion, as opposed to just description, of specific aspects of microorganisms. It builds upon literature searching and evaluation skills acquired at level 1 and supports the development of these, in preparation for level 3. The students are required to run the final version of their essay through the University's chosen plagiarism-checking system prior to online submission.

The second element is addressed through participation at practical classes, where two of the pieces of laboratory work which are completed in class will be submitted as short laboratory reports. This will require data collection, handling and interpretation, the application of learning from the lecture material and discussion of results. The higher of the two marks achieved will contribute to the overall coursework mark. This exercise encourages students to focus on data as they acquire it, a key skill for final year experimental work. It is also formative in nature as the experience gained from the first assessment should inform the students' approach to the second assessment.

Students are provided with formative feed-forward for their exam through a revision and exam preparation session prior to the exam and through the support materials supplied through Blackboard.

All work is marked in line with the Faculty of Health and Applied Sciences Generic Assessment Criteria for Level 2 and conforms to university policies for the setting, collection, marking and return of student work. Assessments are described in the Module handbook that is supplied at the start of module.

| | | |
|---|---|---|
| Identify final timetabled piece of assessment (component and element) | **Component B (element 2)** | |
| **% weighting between components A and B** (Standard modules only) | **A:** **50** | **B**: **50** |

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|---|---|
| **First Sit** | |
| **Component A** (controlled conditions)<br>**Description of each element** | **Element weighting**<br>**(as % of component)** |
| 1. Written Examination (2 hours) | 100 |
| **Component B**<br>**Description of each element** | **Element weighting**<br>**(as % of component)** |
| 1. Essay (1000 words) | 75% |
| 2. Laboratory Reports | 25% |
| **Resit (further attendance at taught classes is not required)** | |
| **Component A** (controlled conditions)<br>**Description of each element** | **Element weighting**<br>**(as % of component)** |
| 1. Written Examination (2 hours) | 100% |
| **Component B**<br>**Description of each element** | **Element weighting**<br>**(as % of component)** |

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| 1. Essay (1000 words) | 75% |
| 2. Laboratory Data Interpretation Exercise | 25% |

**Part 4: Learning Outcomes & KIS Data**

**Learning Outcomes**

On successful completion of this module students will be able to:

- Describe important features of microbial structure and physiology and relate these to the success of microorganisms as pathogens or their survival in the environment (component A and component B, element 1)
- Describe the unique nature of viruses (component A)
- Describe the organisation, modification and manipulation of the bacterial genome (component A)
- Contextualise the microbial infection cycle (component A)
- Analyse data derived from laboratory study of microorganisms (component A and component B, element 2)

**Key Information Sets Information (KIS)**

**Key Information Set - Module data**

*Number of credits for this module*: 15

**Contact Hours**

| Hours to be allocated | Scheduled learning and teaching study hours | Independent study hours | Placement study hours | Allocated Hours |
|---|---|---|---|---|
| 150 | 36 | 114 | 0 | 150 |

The table below indicates as a percentage the total assessment of the module which constitutes a;

**Written Exam**: Unseen or open book written exam
**Coursework**: Written assignment or essay, report, dissertation, portfolio, project or in class test
**Practical Exam**: Oral Assessment and/or presentation, practical skills assessment, practical exam (i.e. an exam determining mastery of a technique)

**Total Assessment**

| Total assessment of the module: | |
|---|---|
| Written exam assessment percentage | 50% |
| Coursework assessment percentage | 50% |
| Practical exam assessment percentage | 0% |
| | 100% |

**Reading List**

https://blackboard.uwe.ac.uk/webapps/osc-BasicLTI-bb_bb60/tool.jsp?course_id=_284166_1&content_id=_5712369_1

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| First CAP Approval Date | 28/5/2014 | | | |
| Revision ASQC Approval Date | 27/6/2018 | Version | 2 | *RIA 12666* |