Programme Specification

BSc Microbiology **UCAS Code: C500**

For students entering Part 1 in September 2017 **UFMICRO**

UFMICROWX

This document sets out key information about your Programme and forms part of your Terms and Conditions with the University of Reading.

Awarding Institution	University of Reading
Teaching Institution	University of Reading
Length of Programme	3 years
Length of Programme with placement/year abroad	BSc Microbiology with Industrial Experience - 4 years (internal transfer only)

Programme information and content

The Microbiology programme aims to provide students with an understanding of the vast array of microbes (bacteria, archaea, viruses, and eukaryotic microbes) around us and their influence on the world. With particular emphasis on bacteria and viruses the syllabus includes:

- Fundamental biology of microbes, their structure, replication, diversity and evolution, genetics and gene regulation, physiology and interactions with both environment and in communities.
- Burden of infectious disease worldwide, newly emerging pathogens, antibiotics and vaccines in disease prevention – successes and problems
- Mechanisms of pathogenesis of microbes, manipulation of host cells, interactions with immune system
- Benefits of diversity of microbes, applications, exploitation and value in science
- Strong practical emphasis, microbiological, genetic and biochemical methods
- Final year research project to develop independent research, data collection, critical analysis and presentation skills
- Through optional modules, the possibility to focus your programme on aspects of microbiology most relevant to your interests and career - medical, molecular or environmental.

Our aim is to produce graduates skilled in resourcing material, critical analysis and data presentation and with the specific knowledge, understanding and practical skills required for a career in applied or research microbiology.

Our students should graduate with a good overview of modern Microbiology and an appreciation of new challenges in this discipline.

Part 1:	In Part 1, students will gain an understanding of the basic concepts of modern microbiology. They will learn about the diversity of microbes, their structure, growth, impact and measures to control infectious disease. They will acquire the fundamental practical skills to work safely in a microbiology laboratory. This will be complemented by study of the structure and function of eukaryotic cells and genetic material. Key universal processes such as transcription, translation, gene regulation, energy production and metabolic pathways will be covered. In addition students will be trained in generic and microbiology specific transferable skills, including literature research, writing in different formats and numeracy.
Part 2:	In Part 2, the microbiology programme extends the student's understanding of how bacteria and viruses survive, multiply, interact with their environment and cause disease through core studies on their structure, molecular and cellular processes, and medical significance. These studies on microbial function are underpinned by modules covering molecular genetics and gene regulation, immunology and mammalian cell biology. Substantial practical content means that by the end of year 2 students should have good aseptic technique and acquired core practical skills in many aspects of Microbiology and Biochemistry. Summer placements may also be taken as an optional module.
Part 3:	Part 3 involves in-depth studies of selected aspects of microbial pathogenesis, gene regulation and specialised functions of bacterial cells. This final year aims to bring the student's understanding to the forefront of selected areas of exciting, current research and an appreciation of approaches used to facilitate advances in microbiology. An optional field trip offers students the valuable experience of sampling microbial biodiversity in the field and laboratory – recent trips have been to Iceland and Columbia. All students select an area of interest for their research project which may be a 'wet' laboratory or bioinformatics project, focus on communication of science e.g. in teaching or critical analysis of previously published literature. The project involves an extensive period of data collection and interpretation followed by preparation of an extended dissertation. This develops the students research, reasoning, critical analysis and presentation skills.

Module information

Each part comprises 120 credits, allocated across a range of compulsory and optional modules as shown below. Compulsory modules are listed.

Part 1 Modules:

Module	Name	Credits	Level
BI1BAC2	Bacteriology and Virology	10	4
BI1BEC1	Building Blocks of Life	20	4
BI1BM12	Key Skills in Biomedicine	10	4

BI1S1	Introductory Microbiology	10	4

Also, students without AS Chemistry or an equivalent qualification must take:

CH1FC1	Fundamental Concepts in Chemistry 1	10	4

Highly recommended modules (it is highly recommended that students take at least one of these):

BI1BF1	Laboratory and Study Skills for Biomedicine	10	4
BI1BAB2	Metabolic and Practical Biochemistry	20	4

Your remaining credits will be made up of optional modules from selected modules from the School of Biological Sciences and across the University, subject to Programme Advisor approval and timetabling constraints. Students also have the option to select a language module.

Part 2 Modules:

Module	Name	Credits	Level
BI2BC45	Cells and Immunity	20	5
BI2BI45	Infectious Diseases	20	5
BI2BM45	Key Skills in Biomedicine 2	10	5
BI2BMG4	Molecular Genetics	20	5
BI2BR5	The Bacterial Cell	10	5

Your remaining credits will be made up of optional modules from selected modules from the School of Biological Sciences and across the University, subject to Programme Advisor approval and timetabling constraints. Students also have the option to select a language module.

Modules during a placement year or study year (if applicable):

Students on the 4 year version of the programme will take one 120 credit module during their placement year.

Students may be permitted to undertake a placement year between Part 2 and Part 3 of the programme. In such cases students will transfer to a 4-year programme. The placement year should not normally be shorter than nine months full-time.

If you take a year-long placement or study abroad, Part 3 as described below may be subject to variation.

Part 3 Modules:

Module	Name	Credits	Level
BI3BG8	Mechanisms for Microbial Function	10	6
BI3BQ78	Bacterial Pathogens & Experimental Approaches	20	6
BI3PROB	Research Project - Biomolecular 40 Credit (B)	40	6

Your remaining credits will be made up of optional modules from selected modules from the School of Biological Sciences and across the University, subject to Programme Advisor approval and timetabling constraints.

Additional costs of the programme

You will require a laboratory coat which you can bring with you or purchase from the University when you arrive (approx. £12).
The library has copies of recommended books, but you may well wish to purchase core textbooks, many of which provide additional electronic resources.
Participation in any residential field based optional module is subject to fees payable by the student.

While students opting for a Placement Year in Microbiology are frequently funded for the placement year by companies involved, there may be additional associated costs likely to vary according to the nature and location of the placement. Similarly study abroad will involve individual travel and subsistence arrangements and any costs as required by the host Institute.

Costs are indicative, but will vary according to module choice and are subject to inflation and other price fluctuations.

The estimates were calculated in 2016.

Optional modules:

The optional modules available can vary from year to year. An indicative list of the range of optional modules for your Programme is set out in the Further Programme Information. Details of optional modules for each part, including any Additional Costs associated with the optional modules, will be made available to you prior to the beginning of the Part in which they are to be taken and you will be given an opportunity to express interest in the optional modules that you would like to take. Entry to optional modules will be at the discretion of the University and subject to availability and may be subject to pre-requisites, such as completion of another module. Although the University tries to ensure you are able to take the optional modules in which you have expressed interest this cannot be guaranteed.

Placement opportunities

Placements are optional. You may take a 1 year placement between the 2nd and 3rd year, if you wish. We have many contacts and you will be given guidance with possibilities, but will be expected to find your own placement. You would then change your registration to a 4 year programme in Microbiology with Industrial Placement.
Many of our students take a summer placement between years 2 and 3.

You may have the opportunity to undertake a Study Abroad/Placement year during your Programme. This is subject to you meeting academic conditions detailed in the Programme Handbook, including obtaining the relevant permissions from your School, and the availability of a suitable Study Abroad placement. If you undertake a Study Abroad placement, further arrangements will be discussed and agreed with you.

Teaching and learning delivery:

You will be taught through lectures, seminars/tutorials, laboratory practicals and supervised project work.

The contact hours for Microbiology are dependent on your module choice. A typical programme might have the following contact hours: 315 hours in Part 1, 380 hours in Part 2, 225 hours in Part 3. Information about module contact hours can be seen in the relevant module description.

Assessment
The programme will be assessed through a combination of written examinations and coursework, assessed via a range of methods.

Progression

To gain a threshold performance at Part 1 and qualify for the CertHE, a student shall normally be required to achieve an overall average of 40% over 120 credits taken at Part 1 and a mark of at least 30% in individual modules amounting to not less than 100 credits. In order to progress from Part 1 to Part 2 a student shall normally be required to achieve a threshold performance at Part 1.

To gain a threshold performance at Part 2 and qualify for the DipHE, a student shall normally be required to achieve:

- an overall average of 40% over 120 credits taken at Part 2: and

- marks of at least 40% in modules amounting to not less than 80 credits; and
- marks of at least 30% in individual modules amounting to not less than 120 credits
- marks of at least 30% in individual modules amounting to not less than 120 credits, except that a mark below 30% may be condoned in no more than 20 credits of modules owned by the Department of Mathematics and Statistics.

In order to progress from Part 2 to Part 3 a student shall normally be required to achieve a threshold performance at Part 2.

Part 2 contributes one third of the overall assessment and Part 3 the remaining two thirds. In order to be eligible for Honours, students must gain an overall weighted average mark of 40%, at least 40% in modules amounting to 80 credits in Part 3, and must gain a mark of at least 40% in the Research Project module. For a Pass degree, candidates must have an average of at least 35%, and at least 35% in modules amounting to 80 credits in Part 3, and must gain a mark of at least 35% in the Research Project module.

Placement Year/Year Abroad (or combination thereof)
Students are required to pass their year out in order to progress on the programme which incorporates the placement year, study abroad year or combination thereof.

Students who fail the placement year transfer to the non-placement year version of the programme.

Classification

The University's honours classification scheme is based on the following:

Mark	Interpretation
70% - 100%	First class
60% - 69%	Upper Second class
50% - 59%	Lower Second class
40% - 49%	Third class
35% - 39%	Below Honours Standard
0% - 34%	Fail

The weighting of the Parts/Years in the calculation of the degree classification is:

Three-year programmes
Part 2 one-third
Part 3 two-thirds

Four-year programmes, including placement year or study abroad:
Normally:
Part 2 one-third
Placement or Year Out - not included in classification
Part 3 two-thirds

(Where a student fails a placement year or study abroad year, which does not contribute to classification they transfer to the three-year version of the programme).

For further information about your Programme please refer to the Programme Handbook and the relevant module descriptions, which are available at http://www.reading.ac.uk/module/. The Programme Handbook and the relevant module descriptions do not form part of your Terms and Conditions with the University of Reading.

BSc Microbiology for students entering Part 1 in session 2017/18
8 November 2016