# Module Specification

## ABOUT THIS DOCUMENT

This module specification applies for the academic year 2018-19  
**Last revised** 15 August 2018 by Dr Richard Stabler

London School of Hygiene & Tropical Medicine, Keppel St., London WC1E 7HT.  
[www.lshtm.ac.uk](http://www.lshtm.ac.uk)

## GENERAL INFORMATION

<table>
<thead>
<tr>
<th><strong>Module name</strong></th>
<th>Bacteriology &amp; Virology</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Module code</strong></td>
<td>3121</td>
</tr>
<tr>
<td><strong>Module Organisers</strong></td>
<td>Dr Richard Stabler, Dr Teresa Cortes, Dr Ursula Gompels, Dr David Allen, Professor Martin Hibberd</td>
</tr>
<tr>
<td><strong>Contact email</strong></td>
<td><a href="mailto:Richard.Stabler@lshtm.ac.uk">Richard.Stabler@lshtm.ac.uk</a> / <a href="mailto:Teresa.Cortes@lshtm.ac.uk">Teresa.Cortes@lshtm.ac.uk</a> / <a href="mailto:Ursula.Gompels@lshtm.ac.uk">Ursula.Gompels@lshtm.ac.uk</a> / <a href="mailto:David.Allen@lshtm.ac.uk">David.Allen@lshtm.ac.uk</a> / <a href="mailto:Martin.Hibberd@lshtm.ac.uk">Martin.Hibberd@lshtm.ac.uk</a></td>
</tr>
<tr>
<td><strong>Home Faculty</strong></td>
<td>Faculty of Infectious &amp; Tropical Diseases</td>
</tr>
<tr>
<td><strong>Level</strong></td>
<td>Level 7 (postgraduate Masters ‘M’ level) of the QAA <a href="https://www.qaa.ac.uk">Framework for Higher Education Qualifications</a> in England, Wales &amp; Northern Ireland (FHEQ)</td>
</tr>
<tr>
<td><strong>Credit</strong></td>
<td>50 credits, within the larger 60-credit Term 1 super-module for each MSc course. Credits are not awarded for this module individually, but only for successful completion of the Term 1 super-module.</td>
</tr>
<tr>
<td><strong>Accreditation</strong></td>
<td>Not currently accredited by any other body</td>
</tr>
<tr>
<td><strong>Keywords</strong></td>
<td>Bacterial, Viral, Laboratory science</td>
</tr>
</tbody>
</table>

## AIMS, OBJECTIVES AND AUDIENCE

**Overall aim**  
To provide a foundation of essential and current knowledge of bacteria, viruses and the host response to them.

**Intended learning outcomes**  
By the end of this module, students should be able to:  
- Differentiate the classes of medically important viruses and describe the biological and genomic characteristics of the major groups  
- Differentiate the classes of medically important bacteria and describe the characteristics of the major groups  
- Compare and contrast the principles of the pathogenesis of infections and the immune responses to different bacteria and viruses  
- Describe the principles and applications of genome sequences and genomics  
- Demonstrate knowledge of and apply a range of laboratory techniques for the isolation, characterisation and laboratory diagnosis of bacteria
and viruses, including in vitro growth, purification and detection of proteins and nucleic acids
- Implement relevant precautions and safety procedures in a medical microbiology laboratory

| Target audience | Bacteriology & Virology is intended for students, molecular biologists, biochemists and clinically trained graduates intending to work in the field of general medical and molecular bacteriology and virology. For most students, the theoretical part of the module will update and extend their knowledge from their first degree and practicals will provide working knowledge of the "tools of the trade". |

**CONTENT**

| Session content | The module is expected to address most of the following topics (though please note that these may be subject to change):

**Bacteriology**
- Bacterial structure
- Bacterial function
- Bacterial metabolism
- Genetics and genomics
- Classification of bacteria
- Identification strategies
- Diagnostic approaches
- Mechanisms of pathogenesis
- Immune response to bacteria
- Antibiotics

**Virology**
- Classification of viruses
- Structure/function of viral nucleic acids
- Viral proteins and virus genetics
- Virus-host cell interactions
- Immune response to viruses
- Virus transmission
- Viral pathogenesis
- Anti-viral therapy
- Laboratory diagnosis of human viral infections |

**TEACHING, LEARNING AND ASSESSMENT**

| Study resources provided or required | Handouts for all the lectures will be provided via Moodle. A Practical handbook containing information about each practical session will also be provided. All materials and equipment for the practical sessions will be provided. |

| Teaching and learning methods | Teaching will consist of formal lectures, group learning/review sessions and tutorials, which will be complemented by hands-on practical exercises in the |
laboratory. Time for private study will be allocated in the timetable, but students will be expected to read around the subjects outside working hours.

### Assessment details

During Term 1, there will be four equally weighted assessments: a practical skills assessment and a multiple choice question (MCQ) test each for bacteriology and for virology. The combined GPA for the in-module assessments counts for 40% of the module GPA.

The module will also be assessed by an unseen written assessment. This will consist of equally weighted bacteriology and virology sections, and the combined GPA counts for 60% of the module GPA.

### Assessment dates

Practical and MCQ assessments will normally take place during Week 5 and Week 10. The unseen written assessment will be held during the week before the start of Term 2 in January.

For students who are required to resit, or are granted a deferral or new attempt at the practical assessments, the MCQ assessments and/or the bacteriology or virology unseen written assessment, the next examination date will be prior to the start of Term 3 of the same academic year.

### Language of study and assessment

English (please see 'English language requirements' below regarding the standard required for entry).

### TIMING AND MODE OF STUDY

| **Duration** | 10 weeks at 4 days per week |
| **Dates** | Mondays to Thursdays |
| **Timetable slot** | Term 1 |
| **Mode of Study** | The module is taught face-to-face in London. Both full-time and part-time students follow the same schedule. |

### Learning time

The notional learning time for the module totals 500 hours, consisting of:

- Contact time = 240 hours
- Self-directed learning = 190 hours
- Assessment, review and revision = 70 hours

### APPLICATION, ADMISSION AND FEES

| **Pre-requisites** | Awarded a place on the Medical Microbiology MSc programme. |
| **English language requirements** | A strong command of the English language is necessary to benefit from studying the module. Applicants whose first language is not English or whose prior university studies have not been conducted wholly in English must fulfil LSHTM's English language requirements, with an acceptable score in an approved test taken in the two years prior to entry. Applicants may be asked to take a test even if the standard conditions have been met. |
| **Student numbers** | 20 - 24 (numbers may be capped due to limitations in facilities or staffing) |
| **Student selection** | Preference will be given to LSHTM MSc Medical Microbiology students until the cap on numbers is reached. Partial Registration (participation in lectures only) by LSHTM research degree students is allowed for this module. |
| Fees | For registered LSHTM MSc students, fees for the module are included within MSc fees (given on individual programme prospectus pages). If registering specifically for this module, as a stand-alone short course, individual module fees will apply. Tuition fees must be paid in full before commencing the module, or by any fee deadline set by the Registry. |
| Scholarships | Scholarships are not available for individual modules. Some potential sources of funding are detailed on the LSHTM website. |