# Module Specification

## ABOUT THIS DOCUMENT

This module specification applies for the academic year 2018-19  
Last revised 05 Sept 2018 by Theresa Ward

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>Module name</th>
<th>Molecular Cell Biology &amp; Infection</th>
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<tbody>
<tr>
<td>Module code</td>
<td>3260</td>
</tr>
<tr>
<td>Module Organiser</td>
<td>Dr Theresa Ward and Dr Rob Moon</td>
</tr>
<tr>
<td>Contact email</td>
<td><a href="mailto:Theresa.Ward@lshtm.ac.uk">Theresa.Ward@lshtm.ac.uk</a> and <a href="mailto:Rob.Moon@lshtm.ac.uk">Rob.Moon@lshtm.ac.uk</a></td>
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<tr>
<td>Home Faculty</td>
<td>Infectious &amp; Tropical Diseases</td>
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<tr>
<td>Level</td>
<td>Level 7 (postgraduate Masters 'M' level) of the QAA Framework for Higher Education Qualifications in England, Wales &amp; Northern Ireland (FHEQ).</td>
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<tr>
<td>Credit</td>
<td>15 credits</td>
</tr>
<tr>
<td>Accreditation</td>
<td>Not currently accredited by any other body.</td>
</tr>
<tr>
<td>Keywords</td>
<td>Host-pathogen interactions; intracellular pathogens; bacterial infections; innate immunity; cell biology; membrane trafficking; cytoskeleton; microscopy.</td>
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## AIMS, OBJECTIVES AND AUDIENCE

### Overall aim
To provide students with an understanding of key aspects of the cell biology of mammalian cells and model organisms, particularly cells of the immune system, and how this relates to the establishment and survival of intracellular microorganisms.

### Intended learning outcomes
By the end of this module, students should be able to:

- Evaluate the diversity of host cell-pathogen interactions
- Demonstrate an understanding of the cytoskeleton and cellular events it regulates
- Distinguish the triggers and mechanisms of endocytosis / phagocytosis and of the secretory pathway
- Describe the molecular signals governing cell cycle control
- Compare how microbes utilise, distort, subvert, or are influenced by the host cell biology during infection, either by the host cell cycle or by membrane trafficking
- Critically assess and analyse the methodology for studying molecular cell biology and infection
**Target audience**
This module is intended for students wishing to focus in depth on the cell biology of the host-pathogen relationship, and those wishing to gain further insight into general mammalian cell biology.

**CONTENT**

**Session content**
The module is expected to include sessions addressing the following topics in the context of cells with and without pathogens:
- Cell cycle control
- Endocytosis, phagocytosis and vacuoles
- Exocytosis and cytoskeleton
- Trypanosomes and cell survival mechanisms
- Light and electron microscopy
- Ethics of data analysis and presentation

**TEACHING, LEARNING AND ASSESSMENT**

**Study resources provided or required**
Module Information can be found on the Virtual Learning Environment (Moodle) containing information about each session and key references for the module.

**Teaching and learning methods**
Primarily by lectures, for introductory material, and by structured discussion involving student presentations.

**Assessment details**
Assessment will be a short answer test at the end of the module based on data analysis and material covered in lectures and presentations. (100% 1.5 hours)
Resit/deferred/new attempts - The task will be a short answer test based on data analysis and material covered in lectures and presentations. (100% 1.5 hours)

**Assessment dates**
Assessments will take place on 24 May 2019.
Resit/deferred/new attempts – The next assessment deadline will be during mid/late September of the current 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**
5 weeks at 2.5 days per week

**Dates**
Wednesday morning to Friday lunchtime

**Timetable slot**
Term 3 - slot E

**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 150 hours, consisting of:
- Contact time ≈ 32 hours
- Directed self-study ≈ 32 hours
- Self-directed learning ≈ 41 hours
- Assessment, review and revision ≈ 45 hours
**APPLICATION AND ADMISSION**

<table>
<thead>
<tr>
<th>Pre-requisites</th>
<th>A basic understanding of cell biology is required.</th>
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<tbody>
<tr>
<td><strong>English language requirements</strong></td>
<td>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 <a href="mailto:">English language requirements</a>.</td>
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<tr>
<td><strong>Student numbers</strong></td>
<td>10-20 (numbers may be capped due to limitations in facilities or staffing)</td>
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<tr>
<td><strong>Student selection</strong></td>
<td>Preference will be given to LSHTM MSc students and LSHTM research degree students. Other applicants meeting the entry criteria will usually be offered a place in the order applications are received, until any cap on numbers is reached. Applicants may be placed on a waiting list and given priority the next time the module is run. Full Registration (full participation) by LSHTM research degree students is required for this module, although the assessment for research degrees students is optional.</td>
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