Module Specification

ABOUT THIS DOCUMENT

This module specification applies for the academic year 2019-20
Last revised 07 August 2019 by Helen Fletcher and Martin Goodier
London School of Hygiene & Tropical Medicine, Keppel St., London WC1E 7HT. www.lshtm.ac.uk

GENERAL INFORMATION

Module name Vaccine Immunology
Module code 3191
Module Organisers Dr Martin Goodier and Dr Helen Fletcher
Contact email Martin.Goodier@lshtm.ac.uk or Helen.Fletcher@lshtm.ac.uk
Home Faculty Infectious & Tropical Diseases
Level Level 7 (postgraduate Masters 'M' level) of the QAA Framework for Higher Education Qualifications in England, Wales & Northern Ireland (FHEQ)
Credit 15 credits
Accreditation Not currently accredited by any other body
Keywords Vaccine, infectious disease, immunology, tuberculosis, BCG, malaria, parasitic, virus and bacterial infections, immune correlates, animal models, clinical trials.

AIMS, OBJECTIVES AND AUDIENCE

Overall aim To develop an understanding of the immune mechanisms important for the development of vaccine-mediated protection from disease and of the technologies used for vaccine development and their application

Intended learning outcomes By the end of this module, students should be able to:
• Describe the immune mechanisms important for vaccine mediated protection
• Distinguish the different vaccine responses needed for different pathogens
• Demonstrate knowledge of different types of vaccine products and understanding of how these vaccines are developed, manufactured and tested in humans

Target audience This module is designed for students with an interest in vaccinology, perhaps with a view to a future career in this area. A background in biology including a basic understanding of immunology is required.

CONTENT
### Session content
The module is expected to include sessions addressing the following topics:
- Induction of antibody mediated immune response by vaccines
- Induction of T cellular immune response by vaccines
- Innate immune responses and their importance in vaccine development
- Vaccines for tuberculosis
- Vaccines for malaria
- Vaccine for other parasitic infections
- Viral vaccines including Influenza, HIV, HBV, HPV, Rota and Ebola viruses
- Bacterial vaccines including Pneumococcal and Meningococcal
- Vaccine development and manufacture
- Clinical trials for testing candidate vaccines and monitoring licenced vaccines
- Immune correlates in vaccine development

This module does NOT cover vaccine policy/vaccination programmes

### 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. Current research literature in major immunology journals/immunology text books

#### Teaching and learning methods
The teaching strategy will consist of formal lectures and student-centred learning through interactive small group work, oral presentations and discussion sessions. External speakers from industry and external vaccine development groups will be invited to contribute to teaching, and practical classes or visits may also be organised.

#### Assessment details
- News and Views style report on recent publications in the vaccine field: 50%
- Exam: Problem solving/data analysis 50%

Resit/deferred/new attempts - The tasks will be alternative versions of the same assessments.

#### Assessment dates
Assessments will be due on the last day of the module, while the exam will take place during the last week of the module.
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 lunchtime and Friday afternoon

#### 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.
<table>
<thead>
<tr>
<th>Learning time</th>
<th>The notional learning time for the module totals 150 hours, consisting of:</th>
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<tbody>
<tr>
<td></td>
<td>• Contact time ≈ 55 hours</td>
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<td></td>
<td>• Directed self-study ≈ 25 hours</td>
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<td></td>
<td>• Self-directed learning ≈ 10 hours</td>
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<td></td>
<td>• Assessment, review and revision ≈ 60 hours</td>
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<th>APPLICATION AND ADMISSION</th>
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<td>Pre-requisites</td>
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<tr>
<td>This module is designed for students with a basic knowledge of immunology.</td>
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| 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. |

| Student numbers            |
| Numbers may be capped due to limitations in facilities or staffing |

| Student selection          |
| Preference will be given to LSHTM MSc students and LSHTM research degree students. MSc IID students will have priority in case of the module being oversubscribed. 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. |