# Module Specification

## ABOUT THIS DOCUMENT

This module specification applies for the academic year 2018-19

**Last revised** 14 August 2018 by Kathryn Mansfield, Krishnan Bhaskaran and Audrey Bonaventure

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## GENERAL INFORMATION

<table>
<thead>
<tr>
<th>Module name</th>
<th>Extended Epidemiology</th>
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<tbody>
<tr>
<td>Module code</td>
<td>2007</td>
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<tr>
<td>Module Organisers</td>
<td>Dr Kalpana Sabapathy, Dr Kathryn Mansfield and Dr Krishnan Bhaskaran</td>
</tr>
<tr>
<td>Contact email</td>
<td><a href="mailto:Kalpana.Sabapathy@LSHTM.ac.uk">Kalpana.Sabapathy@LSHTM.ac.uk</a> or <a href="mailto:Kathryn.Mansfield@lshtm.ac.uk">Kathryn.Mansfield@lshtm.ac.uk</a> or <a href="mailto:Krishnan.Bhaskaran@lshtm.ac.uk">Krishnan.Bhaskaran@lshtm.ac.uk</a></td>
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<tr>
<td>Home Faculty</td>
<td>Epidemiology &amp; Population Health</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, within the larger 60-credit Term 1 super-module for each MSc programme. Credits are not awarded for this module individually, but only for successful completion of the Term 1 super-module.</td>
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<tr>
<td>Accreditation</td>
<td>Not currently accredited by any other body.</td>
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<tr>
<td>Keywords</td>
<td>Research (in general); Epidemiology (including surveillance); Statistics; Quantitative methods; International/global.</td>
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## AIMS, OBJECTIVES AND AUDIENCE

**Overall aim**

To introduce the basic concepts in the design, analysis and interpretation of epidemiological studies and an introduction to epidemiological methods applied to public health.

**Intended learning outcomes**

By the end of this module, students should be able to:
- Identify and state the key considerations in the planning and design of epidemiological studies
- Describe, apply and interpret correctly epidemiological measures, including measures of disease frequency, measures of effect, and measures of public health impact
- Describe the principles and evaluate the relative merits of different study designs, including the main analytic methods available
- State the uses, strengths and limitations of routine data sources in both developed and developing countries
- Summarize the key concepts and implications of sampling error, bias and confounding in epidemiological studies and know how to apply strategies for addressing these
- Summarize the concept of effect modification (interaction) and know how to apply a strategy to address this.
- Describe and apply the concepts of misclassification and validity of disease and exposure measurements, including the principles and practice of disease screening.
- Judge the adequacy of evidence supporting causal links between exposure and disease.
- Evaluate the results and interpretations of published epidemiological studies.
- Select an appropriate study design to address specific epidemiological questions.

**Target audience**

Extended Epidemiology is a core module for all students on the MSc Epidemiology, MSc Veterinary Epidemiology and MSc Public Health for Development programmes. Students of MSc Control of Infectious Diseases, MSc Demography and Health, and MSc Reproductive and Sexual Health Research must take either Basic Epidemiology or Extended Epidemiology.

**CONTENT**

**Session content**

The module is expected to include sessions addressing the following topics:

- Cases, measures of disease frequency (rates/risks) and measures of effect.
- Population impact.
- Dynamics of infection and transmission.
- Study design (cross-sectional, intervention, cohort, case-control, ecological).
- Error, bias and confounding; interaction.
- Causality.
- Screening.
- Use of routine data (including surveillance).

**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. Lecturers make their PowerPoint slides available electronically. We provide practical solutions at the end of practical sessions. A selection of textbooks is suggested, but not required. All are available in the Library.

**Teaching and learning methods**

Teaching will consist of twenty half-day sessions principally composed of one-hour lectures followed by one-and-a-half hour practical classes where students work in small groups. There will be a problem-based exercise on study design and logistics during the latter half of the module, with students working in groups. We illustrate lectures and practicals using examples and data from high, middle and low-income countries, and with communicable and non-communicable diseases. Students are expected both to read around the topic and to do additional exercises in their own time.

**Assessment details**

We make two informal assessments of progress during the course of the module, neither of which count towards the final degree: a mid-term test, to be carried out in the student’s own time, and a second test at the end of term.
**Assessment dates**

Formal assessment will take place during the summer term in late early/mid June.
Resit / deferral / new attempts will take place during the summer term in early/mid June in the following academic year.
Informal assessment will take place during reading week and towards the end of the module.

**Language of study and assessment**

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

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**TIMING AND MODE OF STUDY**

<table>
<thead>
<tr>
<th>Duration</th>
<th>10 weeks at 1 day per week</th>
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<tbody>
<tr>
<td>Dates</td>
<td>Tuesday and Wednesday mornings</td>
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<tr>
<td>Timetable slot</td>
<td>Term 1</td>
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<tr>
<td>Mode of Study</td>
<td>The module is taught face-to-face in London. Both full-time and part-time students follow the same schedule.</td>
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**Learning time**

The notional learning time for the module totals 150 hours, consisting of:
- Contact time ≈ 55 hours
- Directed self-study ≈ 35 hours
- Self-directed learning ≈ 10 hours
- Assessment, review and revision ≈ 50 hours

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**APPLICATION AND ADMISSION**

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<th>Pre-requisites</th>
<th>None, but quantitative skills expected.</th>
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<tr>
<td>English language requirements</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="#">English language requirements</a>.</td>
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<tr>
<td>Student numbers</td>
<td>250 (numbers may be capped due to limitations in facilities or staffing)</td>
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<tr>
<td>Student selection</td>
<td>Extended Epidemiology is a compulsory module for all students on the MSc Epidemiology, MSc Veterinary Epidemiology and MSc Public Health in Developing Countries programmes. Partial Registration (partial participation) by LSHTM research degree students is allowed for this module. 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.</td>
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