



## MODULE SPECIFICATION

<b>Academic Year (student cohort covered by specification)</b>	2021-22
<b>Module Code</b>	2007
<b>Module Title</b>	Extended Epidemiology
<b>Module Organiser(s)</b>	Prof Krishnan Bhaskaran, Dr Kathryn Mansfield and Dr Melissa Matz
<b>Faculty</b>	Epidemiology and Population Health
<b>FHEQ Level</b>	Level 7
<b>Credit Value</b>	<b>CATS:</b> 15 <b>ECTS:</b> 7.5
<b>HECoS Code</b>	101335
<b>Term of Delivery</b>	Term 1
<b>Mode of Delivery</b>	<p>For 2021-22 this module will be delivered online until reading week. A combination of face-to-face and online learning will be used thereafter.</p> <p>Pre-recorded lectures will be made available on an online platform. An online text-based forum will be provided to facilitate questions and discussion. These elements will be asynchronous/self-directed. Practical seminars will largely be delivered face-to-face and synchronously. However, we will maintain limited provision for synchronous online practical seminars; this will be reserved for students who cannot attend face-to-face sessions due to needing to self-isolate or other urgent reasons.</p>
<b>Mode of Study</b>	Both full-time and part-time students follow the same schedule
<b>Language of Study</b>	<p>English</p> <p>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.</p>
<b>Pre-Requisites</b>	None, but quantitative skills expected.
<b>Accreditation by Professional Statutory and Regulatory Body</b>	N/A

<b>Module Cap (indicative number of students)</b>	250 (numbers may be capped due to limitations in facilities or staffing)
<b>Target Audience</b>	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.
<b>Module Description</b>	The module provides a solid introductory grounding in the design, analysis and interpretation of epidemiological studies and introduces epidemiological methods applied to public health.
<b>Duration</b>	10 weeks at 1 day per week (Tuesday and Wednesday mornings)
<b>Timetabling slot</b>	Term 1
<b>Last Revised (e.g. year changes approved)</b>	August 2021

<b>Programme(s)</b>	<b>Status</b>
This module is linked to the following programme(s)	
MSc Epidemiology	Compulsory
MSc Veterinary Epidemiology	Compulsory
MSc Public Health for Development	Compulsory
MSc Control of Infectious Diseases	Option
MSc Demography and Health	Option
MSc Reproductive & Sexual Health Research	Option

## Module Aim and Intended Learning Outcomes

<b>Overall aim of the module</b>
The overall module aim is to introduce the basic concepts in the design, analysis and interpretation of epidemiological studies and introduce epidemiological methods applied to public health.



### Module Intended Learning Outcomes

Upon successful completion of the module a student will be able to:

1. Describe, calculate and interpret epidemiological measures.
2. Identify the key principles and assess the relative merits of different epidemiological study designs.
3. Discuss and evaluate key considerations in the design, conduct and interpretation of epidemiological studies.
4. Identify the major potential sources of error in epidemiological studies and assess the implications of these sources of error.
5. Apply epidemiological principles to the ascertainment of disease in populations.

### Indicative Syllabus

#### Session Content

The module is expected to cover the following topics:

- Cases & measures of disease frequency
- Measures of effect
- Measures of population impact
- Infectiousness and dynamics of infection
- Ecological studies
- Intervention studies
- Cohort studies
- Case-control studies
- Bias
- Measurement error: validity and reliability
- Confounding and effect modification
- Control of confounding
- Screening, vaccination, and other public health interventions
- Causality

We will also discuss, in several sessions, the increasingly important role of routinely collected data in modern epidemiology.

### Teaching and Learning

#### Notional Learning Hours

Type of Learning Time	Number of Hours	Expressed as Percentage (%)
Contact time	≈ 38 hours	25%
Directed self-study	≈ 22 hours	15%
Self-directed learning	≈ 40 hours	27%
Assessment, review and revision	≈ 50 hours	33%
<b>Total</b>	<b>150</b>	<b>100%</b>



Student contact time refers to the tutor-mediated time allocated to teaching, provision of guidance and feedback to students. This time includes activities that take place in face-to-face contexts such as lectures, seminars, demonstrations, tutorials, supervised laboratory workshops, practical classes, project supervision as well as where tutors are available for one-to-one discussions and interaction by email. Student contact time also includes tutor-mediated activities that take place in online environments, which may be synchronous (using real-time digital tools such as Zoom or Blackboard Collaborate Ultra) or asynchronous (using digital tools such as tutor-moderated discussion forums or blogs often delivered through the School's virtual learning environment, Moodle).

The division of notional learning hours listed above is indicative and is designed to inform students as to the relative split between interactive and self-directed study.

### **Teaching and Learning Strategy**

The teaching and learning strategy centres on lectures followed by practical sessions. In the practical sessions, students have the opportunity to apply the concepts and methods covered in the immediately preceding lectures. The practicals provide students with "hands on" experience in thinking and working through concepts and learning points in the context of real examples. Practical tutors facilitate small-group discussions and sum up key points in class discussions. For each practical, students are provided with detailed solutions to the tasks set, enabling them to check that their understanding of the material. An extended practical study-design exercise at the end of term brings together learning points from across the module. There is a mid-term review lecture, and a further session at the end of term, where material is recapped, and students can ask questions and clarify points; there are also formative mid-term and end-of-term tests.

## **Assessment**

### **Assessment Strategy**

The assessment for this module has been designed to measure student learning against the module intended learning outcomes (ILOs) as listed above. Formative assessment methods are used to measure students' progress. The grade for summative assessment(s) only will go towards the overall award GPA.

The assessment for this module will be part of the summer exams, which will be online.

There are two informal assessments of progress during the module, neither of which count towards the final degree: a mid-term test (during reading week), to be carried out in the student's own time, and a second test at the end of term.

Resit / deferral / new attempts will take place during the summer term in June in the following academic year.

### Summative Assessment

Assessment Type	Assessment Length (i.e. Word Count, Length of presentation in minutes)	Weighting (%)	Intended Module Learning Outcomes Tested
Exam (Paper 1)	1 to 2 (depending on MSc) questions in Paper 1	100%	1 – 5

### Resitting assessment

Resits will accord with the LSHTM's [Resits Policy](#).

The module is assessed in a formal written examination as part of Paper 1. If a student needs to resit Paper 1, they will do so at the next available opportunity (i.e., the following summer). Students are permitted one re-sit attempt.



## Resources

### Indicative reading list

1. Webb P and Bain C. *Essential Epidemiology: An introduction for Students and Health Professionals*. (4th Edition), Cambridge University Press. 2020.
2. Webb P, Bain C. *Essential epidemiology : an introduction for students and health professionals /*. 2nd ed. Cambridge, UK: Cambridge University Press; 2011.
3. Hennekens CH, Buring JE, Mayrent SL. *Epidemiology in medicine /*. Boston: Little Brown; 1987.
4. Gordis L. *Epidemiology /*. Fifth edition. Philadelphia, PA: Elsevier/Saunders; 2013.
5. Bailey L, Vardulaki K, Langham J, Chandramohan D. *Introduction to epidemiology /* [Internet]. 2005.
6. Carneiro I, Howard N. *Introduction to epidemiology /* [Internet]. Second edition. Maidenhead: McGraw Hill Oxford University Press; 2011.
7. Keyes KM, Galea S. *Epidemiology matters : a new introduction to methodological foundations /*. Oxford: Oxford University Press;; 2014.
8. Silva I dos S. *Cancer epidemiology : principles and methods /* [Internet]. Lyon, France: International Agency for Research on Cancer; 1999. Available from: <http://publications.iarc.fr/Non-Series-Publications/Other-Non-Series-Publications/Cancer-Epidemiology-Principles-And-Methods-1999>
9. Bonita R, Beaglehole R, Kjellström T. *Basic epidemiology /* [Internet]. Second edition. Geneva: World Health Organization; 2006.
10. Porta MS. *A dictionary of epidemiology /*. Sixth edition. Oxford: Oxford University Press;; 2014.
11. Rothman KJ, Greenland S, Lash TL. *Modern epidemiology /*. Third edition. Philadelphia, PA: Lippincott-Raven; 2008.
12. Giesecke J. *Modern infectious disease epidemiology /*. Second edition. London: Taylor and Francis; 2001.
13. Coggon D, Rose G, Barker DJP. *Epidemiology for the uninitiated /* [Internet]. Fifth edition. London: BMJ; 2003.

### Other resources

Module information can be found on the Virtual Learning Environment (VLE) (Moodle), including information about each session and key references for the module. Lecturers make their lecture 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 for Disabilities and Learning Differences

All lectures are recorded and made available online. Notes, slides and handouts are provided prior to each session, and solutions afterwards. Supplementary exercises with solutions, and suggestions for background reading, are also provided. The module also provides additional support for students with disabilities and learning differences in accordance with the Student Support Services section of the Student Handbook. Reasonable adjustments and support can be arranged.

The module-specific site on Moodle provides students with access to lecture notes, lecture recordings, and copies of the slides used during the lecture (in pdf format). All materials posted up on Moodle areas, including computer-based sessions, have been made accessible where possible.

The LSHTM Moodle has been made accessible to the widest possible audience, using a VLE that allows for up to 300% zoom, permits navigation via keyboard and use of speech recognition software, and that allows listening through a screen reader. All students have access to "SensusAccess" software which allows conversion of files into alternative formats.

For students who require learning or assessment adjustments and support this can be arranged through the Student Support Services – details and how to request support can be found on the [LSHTM Disability Support pages](#).