MODULE SPECIFICATION

Academic Year (student cohort covered by specification)	2022-23
Module Code	2007
Module Title	Extended Epidemiology
Module Organiser(s)	Prof Krishnan Bhaskaran, Dr Anna Schultze and Dr Melissa Matz
Faculty	Epidemiology and Population Health
FHEQ Level	Level 7
Credit Value	**CATS:** 15 **ECTS:** 7.5
HECoS Code	101335
Term of Delivery	Term 1
Mode of Delivery	For 2022-23 this module will be delivered by predominantly face-to-face teaching modes. Where specific teaching methods (lectures, seminars, discussion groups) are noted in this module specification these will be delivered by predominantly face-to-face sessions. There will be a combination of live and interactive activities (synchronous learning) as well as recorded or self-directed study (asynchronous learning), plus face-to-face classes.
Mode of Study	Both full-time and part-time students follow the same schedule
Language of Study	English 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.
Pre-Requisites	None, but quantitative skills expected.
Accreditation by Professional Statutory and Regulatory Body	N/A
Module Cap (indicative number of students)	250 (numbers may be capped due to limitations in facilities or staffing)

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.
Module Description	The module provides a solid introductory grounding in the design, analysis and interpretation of epidemiological studies and introduces epidemiological methods applied to public health.
Duration	10 weeks at 1 day per week (Tuesday and Wednesday mornings)
Timetabling slot	Term 1
Last Revised (e.g. year changes approved)	June 2022

Programme(s) This module is linked to the following programme(s)	**Status**
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

Overall aim of the module
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	≈ 50 hours	33%
Directed self-study	≈ 38 hours	25%

Self-directed learning	≈ 12 hours	8%
Assessment, review and revision	≈ 50 hours	33%
Total	**150**	**100%**

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 discussions and interaction by email or other online digital tools such as Zoom, Blackboard, or Moodle fora.

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 to 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. There will be a timed, unseen written assessment consisting of short-answer questions, which will take place online in the week prior to the start of Term 2 teaching. This will count for 100% of the module GPA. 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.

Summative Assessment

Assessment Type	Assessment Length (i.e. Word Count, Length of presentation in minutes)	Weighting (%)	Intended Module Learning Outcomes Tested
Timed, unseen written assessment	2 questions	100%	1 – 5

Resitting assessment
Resits will accord with the LSHTM's Resits Policy. The unseen short answer questions resit will take place in term 3.

Resources

Indicative reading list

1. Webb P and Bain C. *Essential Epidemiology: An introduction for Students and Health Professional*. (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.