MODULE SPECIFICATION

Academic Year (student cohort covered by specification)	2020-21
Module Code	2021
Module Title	Statistics for Epidemiology and Population Health (EPH)
Module Organiser(s)	Dr Elizabeth Allen, Dr David Macleod, Melissa Neuman
Faculty	Epidemiology and Population Health
FHEQ Level	Level 7
Credit Value	**CATS:** 15 **ECTS:** 7.5
HECoS Code	101031 : 101335
Term of Delivery	Term 1
Mode of Delivery	For 2020-21 this module will be delivered online only. Where specific teaching methods (lectures, seminars, discussion groups) are noted in this module specification these will be delivered using an online platform. There will be a combination of live and interactive activities (synchronous learning) as well as recorded or self-directed study (asynchronous learning).
Mode of Study	Full-time
Language of Study	English
Pre-Requisites	This module does not assume any previous knowledge of statistics, but does assume basic numeracy.
Accreditation by Professional Statutory and Regulatory Body	N/A
Module Cap (Maximum number of students)	280 (maximum capacity of computing facilities)
Target Audience	This is a compulsory module for the MSc programmes in: Epidemiology, Demography & Health, Public Health in Developing Countries, Reproductive & Sexual Health Research, Nutrition for Global Health, Global Mental Health and Veterinary Epidemiology. Other students may take this module to become acquainted with basic statistical concepts.
Module Description	This module seeks to develop an understanding of the basic statistical methods required for epidemiology and population sciences. Students will gain practical skills in making

	appropriate tabulations and graphical displays of data. Students will also gain experience in selecting and conducting appropriate methods of statistical inference and in interpreting the results of the analyses. Skills needed to apply these statistical methods using the Stata statistical software will also be developed.
Duration	10 weeks of 2 half days per week
Timetabling slot	Term 1
Last Revised (e.g. year changes approved)	September 2020

Programme(s) This module is linked to the following programme(s)	**Status**
MSc Epidemiology	Compulsory
MSc Demography & Health	Compulsory
MSc Public Health for Development	Compulsory
MSc Reproductive & Sexual Health Research	Compulsory
MSc Nutrition for Global Health	Compulsory
MSc Global Mental Health	Compulsory
MSc Veterinary Epidemiology	Compulsory

Module Aim and Intended Learning Outcomes

Overall aim of the module
The overall module aim is to: • introduce the basic statistical methods used in medical and public health research, and to help students develop the skills needed to apply them using the Stata statistical software.

Module Intended Learning Outcomes
Upon successful completion of the module a student will be able to: 1. Describe and apply statistical methods in epidemiology and population health, and in their own disciplines 2. Demonstrate skills in handling data on a computer and otherwise, and in deriving and presenting quantitative results using appropriate tables, figures and summaries 3. Explain the nature of sampling variation and the role of statistical methods in quantifying it, and be able to calculate confidence limits and evaluate hypotheses 4. Identify the key features of the normal distribution 5. Identify the key features of methods appropriate for sampling surveys 6. Select appropriate statistical methods for the analysis of simple data sets and apply them on computer using Stata statistical software 7. Interpret and assess the output from statistical analyses carried out on a computer in relation to research and other questions being asked 8. Present and discuss the findings from statistical analyses in a clear, concise and logical manner

Indicative Syllabus

Session Content
The module is expected to cover the following topics: • Basic methods of presenting data • Sampling variation, estimation and hypothesis testing • Analysis of numerical and binary outcomes • Regression analysis • Survey sampling • Interpretation of data analysis will be a central theme throughout the module

Teaching and Learning

Notional Learning Hours

Type of Learning Time	Number of Hours	Expressed as Percentage (%)
Contact time	20	13.3
Directed self-study	30	20
Self-directed learning	70	46.7
Assessment, review and revision	30	20
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 synchronous contexts such as online lectures and practical classes 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
Teaching is delivered through a mixture of lectures and practical sessions. Lectures will take the form of pre-recorded videos of 10-30 minutes in length. Practicals will be both live online (synchronous) and offline (asynchronous). Live practicals will involve 'pen & paper' exercises or computer exercises mainly working in small groups in breakout rooms. The emphasis will be on making appropriate tabulations and graphical displays of data and appreciating their meaning, selecting and applying appropriate methods for statistical inference, and correctly interpreting the results.

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. Two formative assessment methods will be used to measure students' progress: a multiple choice test, and a data analysis report (neither of which will count towards students' final MSc degree grades). The summative assessment for this module will be part of the summer exams which will be online. For students who are required to resit, or granted a deferral or new attempt, the task will be a written exam 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 question in Paper 1	100%	1 – 8

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

Resources

Indicative reading list
Essential Medical Statistics by B Kirkwood & J Sterne (Blackwell)
Other resources
Statistics Without Tears by D Rowntree (Penguin)
Statistics at Square One by T Swinscow & M Campbell (Wiley-Blackwell)

Teaching for Disabilities and Learning Differences

For all lectures, students are provided with access to lecture notes and copies of the slides used during the lecture prior to the lecture (in pdf format). For all practical sessions students are provided with a set of solutions for the practical.

The module-specific site on Moodle provides students with access to lecture notes and copies of the slides used during the video lectures prior to the lecture (in pdf format). All videos are captioned. 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](#).