MODULE SPECIFICATION

Academic Year (student cohort covered by specification)	2025-26
Module Code	2468
Module Title	Analysing Survey and Population Data
Module Organiser(s)	Malebogo Tlhajoane and Alex De Figueiredo
Faculty	Epidemiology & Population Health
FHEQ Level	Level 7
Credit Value	**CATS:** 15 **ECTS:** 7.5
HECoS Code	101030
Term of Delivery	Term 3
Mode of Delivery	For 2025-26 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)
Mode of Study	Full-time
Language of Study	English
Pre-Requisites	It is assumed that students will have done and feel secure/confident in the Term 1 teaching module 2021 Statistics for Epidemiology and Population Health (STEPH) and have confidence with using Stata. Students without this prerequisite should contact their Programme Director.
Accreditation by Professional Statutory and Regulatory Body	None
Module Cap (indicative number of students)	38 (numbers may be capped due to limitations in facilities or staffing)
Target Audience	All students of MSc Demography & Health and Reproductive & Sexual Health; or students with an interest in analysing observational/survey data, surveillance data or panel and cohort studies.

Module Description	This module equips students with the skills needed to prepare, analyse and interpret data from large, population-based datasets, including cross-sectional and retrospective household surveys and panel and cohort studies. The module is assessed through an analysis and reporting exercise of data.
Duration	5 weeks at 2.5 days per week
Timetabling slot	Slot E
Last Revised (e.g. year changes approved)	July 2023

Programme(s) This module is linked to the following programme(s)	**Status**
MSc Demography & Health	Recommended
MSc Reproductive & Sexual Health Research	Recommended

Module Aim and Intended Learning Outcomes

Overall aim of the module
The overall module aim is to: • introduce students to the analysis of large, population-based datasets, including cross-sectional and retrospective household surveys, panel and cohort studies, censuses, sample registration schemes and surveillance data.

Module Intended Learning Outcomes
Upon successful completion of the module a student will be able to: 1. Handle large datasets on a computer, and manipulate such data into the form required for different types of analysis 2. Design and apply an analysis strategy using a variety of analytical approaches

Indicative Syllabus

Session Content

The module is expected to cover the following topics:
• Review of data sources
• Typical data structures
• Range of analytical strategies
• Simple forms of analysis, such as tabulations, through to survival analysis
• Sophisticated techniques such as logistic, exponential and proportional hazards regression
• Weighted data
• Clustered and stratified designs
• Repeated measures
• Data handling skills, including
  ➢ Indexing
  ➢ Merging
  ➢ Re-shaping
  ➢ Collapsing data files

Teaching and Learning

Notional Learning Hours

Type of Learning Time	Number of Hours	Expressed as Percentage (%)
Contact time	34	23
Directed self-study	27	18
Self-directed learning	31	21
Assessment, review and revision	58	38
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 one-to-one discussions and interaction by email.

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 is based on a combination of lectures followed by computer practical sessions. In the practical sessions students have the opportunity to apply the concepts and methods covered in the lectures. The practicals provide students with "hands on" experience in preparing, analysing and interpreting population-based data using data sets drawn from various sources. These include data from both high- and low-income countries. For each practical, students are provided with detailed solutions to the tasks set, enabling them to check their understanding of the material. Three optional review lectures (in weeks 2 to 4) take the form of a Q&A session on the previous weeks' material, or summarise the material from the previous weeks' lectures and questions raised by students.

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 may be used to measure students' progress. The grade for summative assessment(s) only will go towards the overall award GPA. The assessment task, which comes at the end of the module and involves analysing a dataset to answer structured questions, and is designed to consolidate student learning across the whole module. The assessment for this module will be online.

Summative Assessment

Assessment Type	Assessment Length (i.e. Word Count, Length of presentation in minutes)	Weighting (%)	Intended Module Learning Outcomes Tested
Coursework	Maximum 10 pages	100	1 & 2

Resitting assessment
Resits will accord with Chapter 8a of the LSHTM Academic Manual. For students who are required to resit, or granted a deferral or new attempt, the task will be in the same format as the original assessment with new data; the next assessment deadline will be the standard School-recommended date in mid/late September.

Resources

Indicative reading list

There is no compulsory reading for this module, however the texts below may provide useful supplementary reading.

Week 1

1. Kish L. *Survey Sampling /*. Wiley classics library ed. Wiley; 1995.

2. Levy PS. *Sampling of Populations : Methods and Applications /*. 4th ed. (Lemeshow S, ed.). Wiley-Blackwell; 2008.

3. Moser C. *Survey Methods in Social Investigation /*. 2nd ed. (Kalton G, ed.). Heinemann Educational; 1971.

Week 2

4. Burton P, Gurrin L, Sly P. Extending the simple linear regression model to account for correlated responses: An introduction to generalized estimating equations and multi-level mixed modelling. *Statistics in Medicine*. 1998;17(11):1261-1291. doi:10.1002/(SICI)1097-0258(19980615)17:11<1261::AID-SIM846>3.0.CO;2-Z

5. Rabe-Hesketh S. *Multilevel and Longitudinal Modeling Using Stata.* 2nd ed. /. (Skrondal A, ed.).; 2008.

6. Singer JD. *Applied Longitudinal Data Analysis : Modeling Change and Event Occurrence /*. (Willett JB, ed.). Oxford University Press,; 2003.

7. Singer JD. *Applied Longitudinal Data Analysis : Modeling Change and Event Occurence.* (Willett JB, ed.). Oxford University Press Incorporated; 2003:1 online resource (xx, 644 pages) :

Week 3

8. International Development Research Centre (Canada), INDEPTH Network., eds. *Population and Health in Developing Countries.* International Development Research Centre; 2001. https://www.idrc.ca/en/book/population-and-health-developing-countries-population-health-and-survival-indepth-sites

9. Preston S. The life table and single decrement processes. In: *Demography : Measuring and Modeling Population Processes. Oxford, Malden, Mass. : Blackwell Publishers; 2001*. https://contentstore.cla.co.uk/secure/link?id=40bb5c8f-e225-e811-80cd-005056af4099

10. Hinde A. Survival analysis. In: *Demographic Methods. London New York: Arnold; 1998*. https://contentstore.cla.co.uk/secure/link?id=6eb4a8cd-e025-e811-80cd-005056af4099

11. Morgan S, Malamba H, Maude J, et al. An HIV-1 natural history cohort and survival times in rural Uganda. *AIDS*. 1997;11(5):633-640. doi:10.1097/00002030-199705000-00011

Week 4

12. Collett D. *Modelling Survival Data in Medical Research /*. Second edition. CRC Press,; 2003:[viii], 390 pages. You may print, copy or download once up to 5% (or one chapter) of this work for the purposes of private research or study for non-commercial use. Any attempt to exceed this amount will cause publication to lock, denying all users access to this resource.

13. Allison PD. *Event History and Survival Analysis /*. Second edition. (Allison PD, ed.). SAGE,; 2014.

General

ASA statement on P-values published in 2016

Ronald L. Wasserstein & Nicole A. Lazar (2016) The ASA's Statement on p-Values: Context, Process, and Purpose, The American Statistician, 70:2, 129-133, DOI: 10.1080/00031305.2016.1154108

To link to this article: http://dx.doi.org/10.1080/00031305.2016.1154108

Comment in Nature on “statistical significance”

Amrhein V, Greenland S, McShane B (2019) Retire statistical significance. Nature 567:305-307. URL: https://www.nature.com/magazine-assets/d41586-019-00857-9/d41586-019-00857-9.pdf

Article giving advice on number of decimal places to use

Cole TJ (2015) Too many digits: the presentation of numerical data. Archives of Diseases of Childhood. URL: http://adc.bmj.com/content/early/2015/04/15/archdischild-2014-307149.short

Other resources

Demographic and Health Survey Program Website
http://dhsprogram.com/

The British Household Panel Survey Website
https://www.iser.essex.ac.uk/bhps

In praise of panel surveys File - Published by ISER
https://www.iser.essex.ac.uk/files/in-praise-of-panel-surveys.pdf

Population Analysis for Policies & Programmes – an online course http://papp.iussp.org/

Teaching for Disabilities and Learning Differences

The module-specific site on Moodle gives students access to lecture notes and copies of the slides used during the lecture. Where appropriate, lectures are recorded and made available on Moodle. All materials posted on Moodle, including computer-based sessions, have been made accessible where possible.

LSHTM Moodle is accessible to the widest possible audience, regardless of specific needs or disabilities. More detail can be found in the Moodle Accessibility Statement which can also be found within the footer of the Moodle pages. All students have access to "SensusAccess" software which allows conversion of files into alternative formats.

Student Support Services can arrange learning or assessment adjustments for students where needed. Details and how to request support can be found on the LSHTM Disability Support pages.