MODULE SPECIFICATION

Academic Year (student cohort covered by specification)	2021-22
Module Code	2400
Module Title	Study Design: Writing a Study Proposal
Module Organiser(s)	Ian Roberts and Amy Brenner
Faculty	Epidemiology and Public Health
FHEQ Level	Level 7
Credit Value	**CATS:** 15 **ECTS:** 7.5
HECoS Code	100962 : 100473
Term of Delivery	Term 2
Mode of Delivery	For 2021-22 this module is currently planned as a mixture of online and face to face teaching. Teaching will comprise 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 presumes an understanding of the material covered in Term 1 modules in Basic or Extended Epidemiology and Statistics for Epidemiology and Population Health. Students who have not attended these modules need to contact the Module Organiser to discuss their eligibility.
Accreditation by Professional Statutory and Regulatory Body	None
Module Cap (indicative number of students)	70 (numbers may be capped due to limitations in facilities or staffing)
Target Audience	This module is intended for those working anywhere in the world with an interest in public health and epidemiological research. It offers participants an in-depth and highly specific consideration of key issues in designing epidemiological studies and writing grant proposals.
Module Description	The aim of this module is for students to synthesize their learning from core MSc Epidemiology modules in the design of a research study and write it up in the form of a grant proposal.
Duration	5 weeks at 2.5 days per week

Timetabling slot	Slot C1
Last Revised (e.g. year changes approved)	August 2021

Programme(s) This module is linked to the following programme(s)	**Status**
MSc Epidemiology	Compulsory
MSc Health Policy, Planning & Finance	Recommended
MSc Public Health	Recommended
MSc Public Health (Environment & Health)	Recommended
MSc Public Health for Development	Recommended

Module Aim and Intended Learning Outcomes

Overall aim of the module
The overall module aim is to • synthesize learning from core MSc Epidemiology modules through the design of a research study and grant proposal.

Module Intended Learning Outcomes
1. Formulate a relevant research question based on a comprehensive appraisal of the current state of evidence, and design a study to answer this research question. 2. Apply key methodological considerations (e.g. sample size, random error, sampling, inclusion/exclusion criteria, data collection, systematic error, field procedures, outcome assessment) to the design of epidemiologic studies. 3. Apply key contextual considerations (e.g. ethics, timeline, budget, dissemination) to the design of epidemiologic studies.

Indicative Syllabus

Session Content
A. Getting Started: Identifying, formulating, and stating the research question
B. Choosing the right study design
C. Research ethics
D. Study Design Methods: Study population, sampling, sample size, and data collection
E. Study Logistics: Timeline, budget and resources
F. Study limitations: sources of bias and data validity

Session Content
G. Patient and Public Involvement in research H. Dissemination of research findings

Teaching and Learning

Notional Learning Hours

Type of Learning Time	Number of Hours	Expressed as Percentage (%)
Contact time	20	13
Directed self-study	60	40
Self-directed learning	30	20
Assessment, review and revision	40	27
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. 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 (online or on-campus) and self-directed study.

Teaching and Learning Strategy
The teaching and learning strategy combine facilitated group work, lectures and self-directed learning. Most of the module is devoted to the preparation of individual research protocols. Small groups of students will be given a review of the existing research evidence in a particular topic area that will form the basis of their research protocols. Each group will be facilitated by a staff member who has expertise in the selected topic who will meet with the group each week. The lectures are intended as supplementary to the group and individual work, which are the main part of the module and cover essential research methods needed to prepare a research proposal. There is ample private study time for participants to work on the topic and their proposal. Group members are encouraged to share ideas and discuss general methodological issues and questions of common interest. They will then adapt these and the design to the particular situation and location they have individually chosen but the written assignment must be done individually. In

Teaching and Learning Strategy
the 3rd week of the module, students will give a presentation to other participants on their work. The aim of this is to get feedback on the design and this session is not assessed.

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 for this module will be online. For their summative assessment, students are asked to prepare a grant application in a structured format. The assessment will be entirely based on this grant application (100%). Each proposal will be reviewed and graded by two staff members, the first of whom will give comments on a standard form used in this study Module, which will be returned to the author normally within 3 weeks of the end of the study Module.

Summative Assessment

Assessment Type	Assessment Length (i.e. Word Count, Length of presentation in minutes)	Weighting (%)	Intended Module Learning Outcomes Tested
Coursework	1500-word report	100	1 – 5

Resitting assessment
Resits will accord with the LSHTM's Resits Policy

Resources

Indicative reading list

The main sources for aspects of study design and execution are your epidemiology course notes and the texts you have been recommended. The following sources may also be useful:

1. Besson EK. Confronting whiteness and decolonising global health institutions. Lancet. 2021 Jun 19;397(10292):2328-2329. doi: 10.1016/S0140-6736(21)01321-0. PMID: 34147146.

2. Oxman A, Cook D, Guyatt GH for the Evidence-based Medicine Working Group. User's Guides to the Medical Literature. VI How to use an overview. *JAMA* 1994;272:1367-1371.

3. PG Smith, RH Morrow and DA Ross (Editors) (2015) Field Trials of Health Interventions in

Developing Countries: a 'toolbox'. Macmillan. Open access available at for free at https://global.oup.com/academic

4. JH Abramson (2008). Survey Methods in Community medicine: epidemiological studies, programme evaluation, clinical trials. John Wiley, Chichester UK.

5. Edwards PJ, Roberts I, Clarke M, DiGuiseppi C, Pratap S, Kwan, I, Cooper, R, Felix, LM , Kwan I. Wentz R Methods to increase response to postal and electronic questionnaires (Cochrane Methodology Review). In: Cochrane Database of Systematic Reviews 2009, Issue 3 Art No: MR000008

6. Treweek, S, Mitchell, E, Pitkethly, M, Cook, J, Kjelstrøm, M, Johansen, M, Taskila, TK, Sullivan, F, Wilson, S, Jackson, C, Jones, R, Lockhart, P. Strategies to improve recruitment to randomized controlled trials. Cochrane Database of Systematic reviews 2010 Issue 4 Art No: MR000013

7. Bostoen, K and Chalabi, Z. Optimization of household survey sampling without sample frames. Int J Epidemiology 2006 35(3) 751-755

8. Rutterford, C, Copas, A, Eldridge, S Methods for sample size determination in cluster randomized trials Int J Epidemiology 2015 1051-1067

9. Torgerson D, Contamination in trials: is cluster randomisation the answer? BMJ 2001; 322: 355 – 357

10. Altman DG, Bland JM. Statistical Notes: Treatment allocation in controlled trials: Why randomize? BMJ 1999; 318:1209.

11. Altman DG, Schulz KF. Statistical Notes: Concealing treatment allocation in randomized trials. BMJ 2001;323: 446-447.

12. Wacholder S, Silverman D, McLaughlin, J, Mandel J. Selection of Controls in Case-Control Studies. American Journal of Epidemiology 1992; 135(9) 1019-50 (3 companion papers on this topic)

13. Hunt, JR, White, E. Retaining and Tracking Cohort Study Members. Epidemiologic Reviews 1998 (20)1 57-70

14. De Vet H, et al. Measurement in Medicine (Practical Guides to Biostatistics and Epidemiology). Cambridge University Press. 2011

15. Rothman KJ, Gallacher JE, Hatch EE. Why representativeness should be avoided. International journal of epidemiology. 2013 Aug;42(4):1012-4

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.