MODULE SPECIFICATION

Academic Year (student cohort covered by specification)	2021-22
Module Code	EPM500
Module Title	Project Report
Module Organiser(s)	Phil Edwards, Andrea Rehman, Tansy Edwards, Emily Herrett
Contact	The LSHTM distance learning programmes and modules are run in collaboration with the University of London. Enquiries may be made via their Student Advice Centre at: https://london.ac.uk/contact-us (Enquiries from London-based LSHTM MSc or research students regarding study of DL modules should be emailed to distance@lshtm.ac.uk)
Faculty	Faculty of Epidemiology and Population Health London School of Hygiene & Tropical Medicine http://www.lshtm.ac.uk/eph/
FHEQ Level	Level 7
Credit Value	**CATS** 45 **ECTS** 22.5
HECoS Code	101335 : 100473 : 100962
Mode of Delivery	Distance Learning
Mode of Study	Directed self-study, through online materials via the Virtual Learning Environment
Language of Study	English
Pre-Requisites	**This module is only available to, and is compulsory for, students studying for the DL MSc Epidemiology programme.** Students are expected to take this module in their final year of study, except where they have applied, and been given permission, to take this in an alternative year. It is **essential** that students have studied the content of EPM105 *Writing and Reviewing Epidemiological Papers* and EPM202 *Statistical Methods in Epidemiology* before carrying out the project. Also, it is strongly recommended that they choose and study the optional module EPM304 *Advanced Statistical Methods in Epidemiology* before doing an analysis project or a meta-analysis within a systematic literature

	review. Students are also required to have studied EPM201 *Study Design*. Students opting to do a modelling project will be required to complete EPM302 *Modelling and the Dynamics of Infectious Diseases* or attend the London-based equivalent module.
Accreditation by Professional Statutory and Regulatory Body	Not currently accredited by any other body.
Module Cap (Maximum number of students)	There is no cap on the number of students who can register for the project.
Target Audience	The Project Report is compulsory for all students on the DL MSc Epidemiology programme and should be taken in the final year of study to complete the degree.
Module Description	The Project Report gives students the opportunity to work on a real epidemiological issue, and to develop and deepen epidemiological concepts and skills learned during the MSc Programme. Students are expected to show competence in either the analysis of epidemiological data (using statistical and/or mathematical modelling techniques) or the systematic review of epidemiological literature. Students will also be expected to demonstrate an awareness of the practical aspects of epidemiological research, and the final document will require students to demonstrate skills in report writing. The Project Report will be assessed on the written report, with emphasis on students' understanding of the key epidemiological methods and their implementation; the report will be judged not only on its scientific content but also on evidence of students' appreciation of their project's strengths and weaknesses, and on the appropriateness of the style and presentation of their report.
Duration	The Project Module runs over one academic year, from 1 October to 30 September of the following year. Students are expected to submit their project proposal and complete the report in the same academic year. However, students may defer submission of the report to a second year of project registration, in which case they should re-register for the project that second year. (Students requesting deferment may also need to extend their programme registration by a further year; a fee would then be payable.) Students unable to complete the project within 2 years due to extenuating circumstances may formally apply to the Extenuating Circumstances Committee for approval to defer submission of the project report to a third year.
Last Revised (e.g. year changes approved)	March 2021

Programme(s) This module is linked to the following programme(s)	Status
PGCert/PGDip/MSc Epidemiology (Distance Learning - University of London Worldwide)	Compulsory

Module Aim and Intended Learning Outcomes

Overall aim of the module
The overall module aim is to: • give students the opportunity to work on a real epidemiological issue, and to develop and deepen their understanding of epidemiological and statistical concepts and skills learned during the MSc programme.

Module Intended Learning Outcomes
Upon successful completion of the module a student will be able to: 1. Demonstrate independent research skills. 2. Demonstrate the ability to think critically and develop original ideas; develop a research question, formulate a hypothesis, critically evaluate the literature. 3. Demonstrate an awareness of the practical aspects of planning and conducting a study, including potential problems and pitfalls; carry out a risk assessment, understand how to address issues around intellectual property and ethics when conducting a research study. 4. Apply skills including methodological, analytical skills and knowledge gained while applying skills and content gained in the advanced modules to a real world problem. 5. Analyse data or literature and form conclusions based on this analysis. 6. Demonstrate familiarity with research-reporting styles, including project layout and referencing; write a scientific report according to prescribed standards. 7. Present, describe and interpret study findings in a clear and systematic way. 8. Produce an extended piece of writing that is clear and coherent. 9. Demonstrate the ability to present research and/or policy implications and recommendations in a clear format. 10. Where appropriate, reflect on social or ethical issues relating to the research. In addition, students completing an MSc Epidemiology Project Module should be able to: 11. Demonstrate competence in either: (1) the application of statistical methods of analysis, appropriate to an epidemiological study question; (2) the use of mathematical modelling methods to adequately address an epidemiological research question; (3) a systematic search and critical evaluation and synthesis of the literature related to an epidemiological research question. 12. Demonstrate an awareness of the practical aspects of epidemiological research. 13. Identify and explore the possible consequences of important sources of systematic and random error, including bias and confounding, either in an epidemiological dataset

Module Intended Learning Outcomes
analysis, a modelling project, and additionally identify design weaknesses in a systematic literature review.

Indicative Syllabus

Session Content
The project must be one of the following three types: **i) Analysis of a dataset** Students are encouraged to use datasets that are freely available either with data that has been made open access or by requesting permission (e.g. DHS data). Some students may have access to a dataset for analysis from their employment or another source. If they intend to use such a dataset, they must ensure that it will provide them with sufficient opportunity to demonstrate their epidemiological skills to an MSc epidemiology level, for example by investigating an epidemiological association whilst allowing for confounding (including designing a strategy of analysis and conducting multivariable analyses). Students will need to ensure that the data are available to them within the time constraints of the project, and that it will not require a large amount of time to 'clean' the data before they can begin coding and analysing. Only in exceptional circumstances would de novo data collection be approved as part of the Project Report. If the data are not open access, it is essential that students get full written agreement from the owner of the dataset to use it for their project. If they are working on a study as a member of a team, the data analysis and formulation of the research question must be their own independent work, and they should clearly state in their report the contribution that was made by others. The choice of the statistical methods is dependent on the research question and type of data available for analysis. While it is expected that statistical methods taught in the module EPM202 Statistical Methods in Epidemiology would be sufficient for most data analysis projects, students planning more advanced analysis (e.g. survival analysis) would be strongly advised to have learnt more advanced statistical methods taught in the module EPM304 Advanced Statistical Methods in Epidemiology. **ii) Modelling projects** Modelling projects are acceptable as Project reports as long as the project allows for, and the student displays, a solid understanding of epidemiological principles. In such projects, the student will be expected to: (1) Justify why mathematical modelling is well suited to address the question under study and demonstrate an awareness of the strengths and limitations of the approach; (2) Demonstrate a solid understanding of the epidemiology and natural history of the disease under study and the problem being modelled; (3) Describe the source and limitations of data used to fit the model and to define parameter values (for example with regard to random error, selection bias, confounding or errors in ascertainment of exposure, infection or disease) and their implications for the conclusions of the modelling study;

Session Content
(4) Provide a clear statement of the assumptions made by the model and a critical discussion of the validity of these assumptions and of the implications for the model findings of any departures from them; (5) Depending on what outcome is being modelled, to present uncertainty ranges for the main model outputs. These uncertainty ranges may come from sensitivity analyses or some other approach, but should provide some quantification of uncertainty, not just a statement that there is uncertainty in the point estimates. It is expected that all students opting for a modelling project will have successfully completed the module on Modelling and the Dynamics of Infectious Diseases, by distance learning (EPM302) or the London-based module (2464). **iii) Systematic Review of the Literature** This should be a comprehensive, systematic and critical review in which students will be expected to demonstrate their understanding of the epidemiological issues involved, a concise synthesis of the 'state of the art' in that field, and to state clear recommendations for future research direction. Suitable topics are new or controversial interventions, or risk factors over which there is current disagreement. Review projects should address quantitative outcomes or indicators, rather than purely qualitative ones. Students are expected to use standard approaches used in epidemiology for systematic literature reviews. Although it is common to use a second researcher to double-screen and code studies (e.g. when seeking to publish a systematic review), students should carry out their search, screening and review independently for their project report. Students will be expected to conduct a meta-analysis if the data from relevant studies are suitable and will be expected to consider the biases likely in each included study, for each study design included, using an appropriate risk of bias approach. It is necessary to demonstrate at the project outline stage early on in the year that there are a reasonable number of studies (at least 5) that can be used based on a quick Medline search. Students are encouraged to do a project which is relevant to their current or future work, but this is not essential.

Teaching and Learning

Notional Learning Hours

Type of Learning Time	Number of Hours	Expressed as Percentage (%)
Contact time	30	7
Directed self-study	50	11
Self-directed learning	270	60
Assessment, review and revision	100	22
Total	**450**	**100**

Teaching and Learning Strategy

Learning is self-directed against a set of learning objectives, using the project guidelines which are available to students registered for the project. Project Organisers provide academic guidance and support to students in developing and choosing their project ideas. Project supervisors provide feedback on the project proposal, the completed CARE (Combined Academic, Risk assessment and Ethics) form, including an outline of the proposed project, academic advice and support throughout the Project implementation, feedback on one draft of the final report and in response to specific academic queries.

Student support is available from: i) a project supervisor (usually allocated in January); and ii) the Project Organisers (all year round) via email or through online discussion fora and occasional real time sessions (using Collaborate Ultra or Zoom) in which students are encouraged to participate. There are online discussion fora specifically designed for queries related to: Stata (technical queries related to the software); meta-analysis; analyses based on Demographic and Health Surveys (DHS) and other complex multi-stage surveys; and Mathematical modelling projects. Online training modules are provided by the Library on information skills, including searching the literature. Students are also given access to updated learning material for all MSc core modules and advanced statistical methods modules (EPM202 - statistical methods in epidemiology and EPM304 - advanced statistical methods in epidemiology) to support their self-directed learning.

The role of the project supervisor is to guide students in carrying out their project. However, ultimate responsibility for the project report rests with the student, and not the supervisor.

Students are expected to complete their project within one academic year; however, students are allowed up to two (2) years of project registration to complete their project. Students who plan to complete their project over two years rather than one year should inform the Project Organisers, so that appropriate arrangements are made for continuity of their supervision over the 2 years where possible.

Assessment

Assessment Strategy

Formal assessment of this module is by one written report, with a recommended minimum length of 7,000 and an absolute maximum of 10,000 words (100%). The emphasis will be on the student's understanding of the key epidemiological methods and their implementation. The project will be independently marked by two examiners and judged not only on scientific content, but also on evidence of the student's appreciation of its strengths and weaknesses, and on the appropriateness of the style and presentation of their report. Students are provided detailed guidance, including marking criteria and the examiners' marking guidelines for each type of project.

The final project report is submitted in electronic form. Reports that are over the word limit are assessed in accordance with LSHTM's Distance Learning Postgraduate Taught Degree Academic Regulations.

Assessment Strategy
Students who receive a fail grade for their project report (0 or 1), and who are not granted extenuating circumstances, are allowed one further attempt at the project. The grade for this second attempt is capped at 3, in accordance with regulations. Students who do not submit their project report by the deadline of their second year of project registration and who are not granted extenuating circumstances, will be automatically awarded a 0 (non-submission) grade. They will be considered to have failed the project at the first attempt and allowed one further attempt at the project.

Summative Assessment

Assessment Type	**Assessment Length (i.e. Word Count, Length of presentation in minutes)**	**Weighting** (%)	**Intended Module Learning Outcomes Tested**
Project	7,000 – 10,000 words	100	1 – 13

Resitting assessment
Resits will accord with the LSHTM's Resits Policy Students follow the School policy on re-sits of modules, examinations and project reports. For students who are required to re-sit, there are three types of resit which the Board of Examiners can require students to undertake: (i) '**Revise and re-submit**': In such cases, the re-sit student will need to make corrections and submit a revised project by 31 March 2022. (ii) **'Further data collection'**: In such cases, the student will be requested to collect or generate new data and revise/update the project, while keeping the initial project topic. Please note that for DL MSc Epidemiology projects, 'collecting new data' would usually mean using additional variables already available from the dataset rather than actual field collection of new information. Submission should be by the following year's deadline. (iii) **'New project':** In such cases, the re-sit student will need to re-register and do a project on an entirely new topic, for submission by the following year's deadline.

Resources

Other resources
Students are given access (from early October) to i) the LSHTM Virtual Learning Environment, Moodle, which contains resources such as discussion forums and Project guidance documents and forms ii) the LSHTM online library, as well as two online training modules / workshops on information skills. Students who are taking this module also have online access to the most recent versions of EPM1, EPM2 and EPM304 online study materials (this access excludes tutor support and associated readings/textbooks).

Teaching for Disabilities and Learning Differences

The module-specific site on Moodle provides students with access to the module learning materials, including a study guide and online reading list (containing both essential and recommended readings), and additional resources including supplementary exercises and optional lecture recordings. 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 with special needs, reasonable adjustments and support can be arranged – details and how to request support can be found on the University of London Worldwide website at https://london.ac.uk/applications/how-it-works/inclusive-practice-access-arrangements