

MODULE SPECIFICATION

Academic Year (student cohort covered by specification)	2022-23
Module Code	PHM205
Module Title	Environmental Epidemiology
Module Organiser(s)	Ai Milojevic
Contact email	<p>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.</p> <p>(Enquiries from face-to-face i.e. London-based the LSHTM MSc or research students regarding study of DL modules should be emailed to: distance@lshtm.ac.uk).</p>
Faculty	Public Health & Policy: The London School of Hygiene & Tropical Medicine https://www.lshtm.ac.uk/research/faculties/php
FHEQ Level	Level 7
Credit Value	CATS: 15 ECTS: 7.5
HECoS Code	101317 : 101335 : 101048
Mode of Delivery	Distance Learning
Mode of Study	Directed self-study, through online materials (Virtual Learning Environment)
Language of Study	English
Pre-Requisites	All students will require a sound basic knowledge of epidemiology as gained by completion of the core module PHM101 Basic Epidemiology or similar (including familiarity with major epidemiological study designs, confounding factors, regression methods and the interpretation of regression coefficients). If students have concerns about these pre-requisites they should contact PHsupport@lshtm.ac.uk before registering for the module.
Accreditation by Professional Statutory and Regulatory Body	None
Module Cap (Maximum number of students)	None

Target Audience	This module is available to students registered for the DL MSc and PGDip in Public Health. It is recommended for students studying the MSc Public Health: Environment and Health stream. The module is also open to students on the DL PGDip/MSc Clinical Trials, Epidemiology and Global Health Policy programmes. Alternatively, it can also be taken as an individual module. An understanding of basic epidemiological principles is assumed (see Pre-Requisites). There is a focus on methods and principles. The module is relevant to both high- and low-income settings, but there is greater emphasis on examples and methods from higher-income settings.
Module Description	The module focuses on understanding of the epidemiological methods by which evidence has been obtained on environmental risks to health: how we know what we think we know about such risks. Its main focus is therefore on principles, methods, interpretation and critical thinking. It concentrates on methods common in environmental epidemiology, including time series studies and risk assessment methods, and considers the evidence for the main areas of current interest in environmental epidemiology. These include: air pollution, wastewater reuse, congenital anomalies, ionizing and non-ionizing radiation, climate change/planetary health, as well as disease cluster investigations. The intention is to equip students with a good understanding of how to design an epidemiological study, to investigate an environmental hazard to health and how to interpret evidence from published literature.
Duration	Studies for distance learning modules begin in early October. At this time, module materials will be made available on Moodle. Students may start their studies at any time from the beginning of October and work through the material until the start of the June examinations. However, students are encouraged to commence their studies in October and work steadily through the materials over the course of the academic year and must adhere to other assessment submission deadlines.
Last Revised (e.g. year changes approved)	April 2022

Programme(s)	Status
This module is linked to the following programme(s)	
MSc Public Health: Environment and Health (Distance Learning - University of London Worldwide)	Recommended Elective
MSc Public Health (General Stream) (Distance Learning - University of London Worldwide)	Elective
MSc Public Health: Health and Promotion (Distance Learning - University of London Worldwide)	Elective

Programme(s)	Status
This module is linked to the following programme(s)	
MSc Public Health: Health Services Management (Distance Learning - University of London Worldwide)	Elective
MSc Public Health: Health Economics (Distance Learning - University of London Worldwide)	Elective
PGDip Public Health (Distance Learning - University of London Worldwide)	Elective
PGDip/MSc Clinical Trials (Distance Learning - University of London Worldwide)	Elective
PGDip/MSc Epidemiology (Distance Learning - University of London Worldwide)	Elective
PGDip/MSc Global Health Policy (Distance Learning - University of London Worldwide)	Elective

Module Aim and Intended Learning Outcomes

Overall aim of the module
<p>The overall module aim is to:</p> <ul style="list-style-type: none"> Develop students' ability to apply theoretical and practical tools in designing and analysing the studies in environmental epidemiology, with main emphasis on the industrialized world.

Module Intended Learning Outcomes
<p>Upon successful completion of the module a student will be able to:</p> <ol style="list-style-type: none"> 1. Explain the main methodological issues in environmental epidemiology, specifically concerning the investigation of the health effects of pollution of air, water and land, including the effects of ionizing and non-ionizing radiation and climate change; 2. Assess and critically interpret scientific data relating to potential environmental hazards to health; 3. Plan, conduct and interpret the initial investigation into a putative disease cluster; 4. Explain and illustrate the principles of semi-ecological cohort and time-series studies for the investigation of the health effects of environmental exposures. 5. Describe and apply methods of quantitative risk assessment in real environmental health issues.

Indicative Syllabus

Session Content
<p>The module is expected to cover the following topics:</p> <ul style="list-style-type: none"> Key issues in environmental epidemiology, including methods for investigating environmental hazards; Investigation of the health effects of: air pollution, climate change, ionizing radiation, hazardous waste, non-ionizing radiation and water-related health risks.

Session Content

- Disease cluster, covering practical public health questions and complexities of performing and interpreting formal epidemiological studies;
- Time-series analysis of health and environmental data (computer-based practical);
- Health risk assessment (computer-based practical);
- A framework for evaluating epidemiological evidence on environment and health risk.

Teaching and Learning

Notional Learning Hours

Type of Learning Time	Number of Hours	Expressed as Percentage (%)
Directed self-study	110	73.3
Self-directed learning	0	0
Assessment, review and revision	40	26.7
Total	150	100

Teaching and Learning Strategy

Learning is via directed self-study. A guide to studying the module is provided, together with access to a range of study resources, discussion forums and online webinar discussion sessions. Students are strongly encouraged to participate in the module-specific discussions and online webinar discussion sessions to obtain tutor support, and to make use of the LSHTM on-line library resources. Written feedback is provided on submitted assignments.

Students are directed to use the various online electronic resources and to read and work through the exercises provided. Learning materials include: a brief guide to the module, recorded lectures, computer practicals, online webinar discussions, recommended reading materials, Frequently Asked Questions (FAQs) and suggested relevant websites.

Assessment

Assessment Strategy

This module is assessed via one required assignment worth 30% of the student's mark and a summative exam of 2 hours and 15 minutes that is worth 70% of the student's mark. For the summative exam, students are advised to spend the first 15 minutes reading the instructions and questions.

Summative assessment

Assessment Type	Assessment Length	Weighting (%)	Intended Module Learning Outcomes Tested
Assessed Assignment	Please see the Assignment Instructions for details.	30	All
Exam	2-hours and 15 minutes	70	All

Assignments for this module can be submitted only once annually, no later than 31 March and must be submitted via the online Assignment Management System.

Timed examinations for DL modules are held once a year, in June (including resits). Examinations in 2022/23 will either be taken in a student's country of residence in one of over 650 [examination centres worldwide](#) or will be held online. If the June 2023 module exam is held at a local examination centre, a local fee will be payable direct to the exam centre. This fee will be in addition to the module fee and is set by, and paid directly to, the individual examination centre. The level of local examination centre fees varies across the world and neither the University of London nor the LSHTM have any control over the fee amount. If the June 2023 module exam is held online, no additional exam entry fee will be payable. (Note that for those resitting module assessments, a fee will be payable.)

Resitting assessment

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

The Resit assessment will be the same assessment type as the first attempt (see previous table).

Resources

The following materials are provided to students after registration and fee payment for this module in October:

- A brief guide to studying the module;
- A reading list including details of both required and optional reading and links to selected papers;
- A list of useful websites;
- Access to the LSHTM Virtual Learning Environment (VLE) - Moodle, where students can access a range of materials, including the materials listed above; participate in module-specific discussion forums and online webinar discussion sessions and access the LSHTM online library resources;

All materials are provided in e-format and may be accessed via the LSHTM VLE – Moodle.

Teaching for Disabilities and Learning Differences

The module-specific site on Moodle provides students with access to the majority of the module learning materials, including a study guide and online reading list (detailing both essential and recommended readings), and additional resources including supplementary exercises and optional lecture recordings. In some cases, module materials include a book that is made available to students in e-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 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>