Module Specification (Distance Learning)

In collaboration with University of London International Programmes

1. Title:	**Human Genetic Epidemiology**
2. Module code:	EPM306
3. Institution:	Faculty of Epidemiology and Population Health London School of Hygiene & Tropical Medicine Keppel Street London WC1E 7HT http://www.lshtm.ac.uk/eph/
4. Module Organisers:	Branwen Hennig, Frank Dudbridge
5. Mode of study:	Distance learning
6. Type:	Elective
7. Duration and dates:	Deadlines if taken as part of a formal award: Application deadline: 30 June each year Registration deadline: 31 August each year Course registration duration: Up to 5 years Course starts: 1 October each year Examination takes place: Usually June each year (date to be confirmed) Deadlines if taken as an individual module (i.e. not registered for formal award): Application deadline: 31 August each year Registration deadline: 30 November each year Registration duration: 2 years Module study starts: 1 October each year Examination takes place: Usually June each year (date to be confirmed)
8. Credit points:	15 credit points will be awarded on successful completion of this module at Masters level (Level 7).
9. Notional Learning Hours (NLH):	The module should take about 150 hours to complete. On average students will divide these learning hours as follows: Directed self-study 70 hours Self-directed learning 40 hours Assessment, review and revision 40 hours.
10. Aim:	This module aims to provide an introduction to the main concepts and applications of human genetic epidemiology. The module explores how genotyping methods and statistical techniques can be used in epidemiological studies to facilitate human disease research, in particular to investigate the role of genetic inheritance in disease.
11. Learning objectives:	On completion of this module students should be able to: • explain the basic concepts of molecular biology, molecular techniques and genetic inheritance, • identify an appropriate study design to answer a specific question in genetic epidemiology, • outline the statistical methods used to evaluate the role of genetic inheritance in disease incidence, and • describe the major ethical and public health issues arising from genetic epidemiology.

12. Content:	Module content is structured around the self-study sessions listed below: GE00 Welcome to Human Genetic Epidemiology GE01 Introduction to genetics GE02 Genetic variation and its detection GE03 Databases/bioinformatics GE04 Population genetics GE05 Family studies: recurrence risk and heritability GE06 Linkage analysis GE07 An Introduction to genetic association studies GE08 Design and analysis of candidate gene association studies GE09 Genome-wide association studies GE10 Public health and ethical issues in human genetic epidemiology. For students who have not studied the module EPM303 *Epidemiology of Non-communicable Diseases*, the session EN06 on Mendelian randomisation studies is included as additional material on the usefulness of genetic markers in non-communicable disease epidemiology.
13. Learning methods:	Learning is self-directed against a detailed set of learning objectives using the materials provided. The key learning methods are: - Reading and reflecting on CAL (computer-assisted learning) materials which introduce, explain and apply the principles and methods covered in the module. - Reading and reflecting on paper-based materials which support the learning in the CAL sessions. - Completing a practical exercise on “linkage analysis”. - Accessing academic support which is available from the module tutors through the web-based discussion forum in which students are encouraged to participate. - Completing formative assignment(s) and reflecting on written feedback from module tutors. - Reflecting on previous years’ exam questions which provide practical examples of questions arising when designing human genetic studies. - Completing the assessed assignment and reflecting on written feedback from module tutors.
14. Study resources included:	CD-Rom – EPM306 EPM306 Human Genetic Epidemiology Study Guide & Reader. <u>Software</u>: Stata. Registered students have access to the School’s online library resources. Students who are taking this as an individual module or as part of the MSc CT course will also have online access to the MSc EP core electronic study materials (this access will exclude tutor support and associated textbooks).
15. Assessment procedures:	Formal assessment of the module consists of one assessed assignment (30%) and by a two-hour unseen written examination (70%). Examinations are normally held in a student’s country of residence, in one of over 650 examination centres worldwide. They are arranged mainly through Ministries of Education or the British Council. A local fee will be payable. A list of examination centres can be found at

	http://www.londoninternational.ac.uk/current_students/general_resources/exams/exam_centres/index.shtml. If students fail an examination at the first entry they will be allowed one further attempt, the following year.
16. Prerequisites:	Students should have completed EPM101, EPM102, EPM103 and EPM105 (core modules) and EPM202, or have equivalent experience. Clinical Trials students who wish to take this module must ensure that they have studied CTM207 *Design and Analysis of Epidemiological Studies* before studying this module. Any CT students wishing to study EPM306 prior to studying CTM207 must obtain Course Director approval before registration. Those wishing to study this module must be able to access the internet on average at least once a week to benefit from library facilities, participate in web-based conference discussions and submit assignments. Students must meet the standard of English required to study this course. See http://www.lshtm.ac.uk/prospectus/english.html.
17. Attendance:	No maximum number
18. Selection, if applicable:	This module is available only to those registered for the MSc Epidemiology or Clinical Trials courses; alternatively, it can be taken as an Individual Module. Students registered for the PG Diploma Epidemiology or PG Diploma Clinical Trials courses under the credit framework scheme may also take this module.
19. Fees:	For current schedule of fees see http://www.londoninternational.ac.uk/fees/schedules/lshtm.pdf.
20. Scholarships:	None available
21. External accreditation:	None
22. Application process:	Applications are managed by the University of London International Programmes (website: http://www.londoninternational.ac.uk/).
23. Further enquiries:	Enquiries may be emailed to distance@lshtm.ac.uk.