

Module Specification (Distance Learning)

In collaboration with University of London International Programmes



1. Title:	Statistics with Computing
2. Module code:	EPM102
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:	Sue Stirling, Clare Tanton
5. Mode of study:	Distance learning
6. Type:	Core module
7. Duration and dates:	<p>Deadlines if taken as part of a formal award:</p> <p>Application deadline: 30 June each year</p> <p>Registration deadline: 31 August each year</p> <p>Course registration duration: Up to 5 years</p> <p>Course starts: 1 October each year</p> <p>Examination takes place: Usually June each year (date to be confirmed)</p> <p>Deadlines if taken as an individual module (i.e. not registered for formal award):</p> <p>Application deadline: 31 August each year</p> <p>Registration deadline: 30 November each year</p> <p>Registration duration: 2 years</p> <p>Module study starts: 1 October each year</p> <p>Examination takes place: Usually June each year (date to be confirmed)</p>
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):	<p>The module should take about 150 hours to complete. On average students will divide these learning hours as follows:</p> <p>Directed self-study 60 hours</p> <p>Self-directed learning 50 hours</p> <p>Assessment, review and revision 40 hours.</p>
10. Aim:	The aim of this module is to provide students with the key statistical principles that are essential for anyone studying epidemiology. This includes an introduction to the Stata statistical package.
11. Learning objectives:	<p>On completing of this module students should be able to:</p> <ul style="list-style-type: none"> describe the role of statistical methods in epidemiology and population sciences and in their own disciplines, explain probability and its application conceptually, demonstrate skills in handling data, on computer and otherwise, and in deriving and presenting quantitative results effectively, using appropriate displays, summaries and tabulations, appraise the nature of sampling variation and the role of statistical methods in quantifying it, setting confidence limits and testing hypotheses, select and use appropriate statistical methods in the analysis of simple

	<p>datasets, and apply these methods by computer (using Stata),</p> <ul style="list-style-type: none"> • describe and interpret output from statistical analyses carried out by computer, in relation to research and other questions being asked, • present findings based on statistical analysis in a clear, concise and understandable manner. 																																				
12. Content:	<p>Module content is structured around the self-study sessions listed below:</p> <table border="1"> <thead> <tr> <th>Session</th> <th>Title</th> </tr> </thead> <tbody> <tr> <td>SC01</td> <td>Introduction to statistics with computing</td> </tr> <tr> <td>SC02</td> <td>Types of data, summary and data presentation</td> </tr> <tr> <td>SC03</td> <td>Probability: evaluating the role of chance</td> </tr> <tr> <td>SC04</td> <td>The binomial distribution</td> </tr> <tr> <td>SC05</td> <td>The normal distribution</td> </tr> <tr> <td>SC06</td> <td>Principles of statistical inference</td> </tr> <tr> <td>SC07</td> <td>Inference from a sample mean</td> </tr> <tr> <td>SC08</td> <td>Comparison of two means</td> </tr> <tr> <td>SC09</td> <td>Inference from a sample proportion</td> </tr> <tr> <td>SC10</td> <td>Comparison of two proportions</td> </tr> <tr> <td>SC11</td> <td>Association between two categorical variables</td> </tr> <tr> <td>SC12</td> <td>Measures of effect in 2X2 tables</td> </tr> <tr> <td>SC13</td> <td>Matched analysis for paired binary data</td> </tr> <tr> <td>SC14</td> <td>Correlation</td> </tr> <tr> <td>SC15</td> <td>Linear regression</td> </tr> <tr> <td>SC16</td> <td>Non-parametric methods</td> </tr> <tr> <td>SC17</td> <td>Summary of the module.</td> </tr> </tbody> </table>	Session	Title	SC01	Introduction to statistics with computing	SC02	Types of data, summary and data presentation	SC03	Probability: evaluating the role of chance	SC04	The binomial distribution	SC05	The normal distribution	SC06	Principles of statistical inference	SC07	Inference from a sample mean	SC08	Comparison of two means	SC09	Inference from a sample proportion	SC10	Comparison of two proportions	SC11	Association between two categorical variables	SC12	Measures of effect in 2X2 tables	SC13	Matched analysis for paired binary data	SC14	Correlation	SC15	Linear regression	SC16	Non-parametric methods	SC17	Summary of the module.
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13. Learning methods:	<p>Learning is self-directed against a detailed set of learning objectives using the materials provided. The key learning methods are:</p> <ul style="list-style-type: none"> - 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 paper and computer-based practical exercises - 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. 																																				
14. Study resources provided:	<p>Epidemiology Core Module CD-Rom (EPM101/102/103) EPM102 Statistics with Computing Workbook</p> <p><u>Software:</u> Stata</p> <p><u>Textbooks:</u> Essential Medical Statistics (Kirkwood, Sterne).</p> <p>Registered students have access to the School's online library resources.</p>																																				
15. Assessment procedures:	<p>Formal assessment of the module consists of a two-hour unseen written examination. Although the formative assignments in this module are optional and do not count towards the final grade, it is highly recommended that students complete them and submit them for marking.</p>																																				

	<p>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.</p> <p>If students fail an examination at the first entry they will be allowed one further attempt, the following year.</p>
16. Prerequisites:	<p>Note for Epidemiology course students: Students are encouraged to complete EPM102 at the same time as EPM101.</p> <p>Those wishing to study this module must have regular access to the internet to benefit from library facilities, participate in web-based conference discussions and submit assignments.</p> <p>Students must meet the standard of English required to study this course. See http://www.lshtm.ac.uk/prospectus/english.html.</p>
17. Attendance:	No maximum number
18. Selection, if applicable:	This module is compulsory for students registered on the <u>PG Certificate/PG Diploma/MSc Epidemiology</u> courses; alternatively, it can be taken as an Individual 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 .