

MODULE SPECIFICATION

1. Overview

Academic Year (student cohort covered by specification)	2019-20			
Module Code	2057			
Module Title	Demographic Methods			
Module Organiser(s)	Georges Reniers			
Faculty	EPH			
FHEQ Level	Level 7 (postgraduate Masters 'M' level) of the QAA Framework for Higher Education Qualifications in England, Wales & Northern Ireland (FHEQ)			
Credit Value	CATS	15	ECTS	7.5
HESA Cost Centre	132			
HECoS Code	101408			
Term of Delivery	Term 1			
Mode of Delivery	Face to face			
Mode of Study	Full time or part time or split study			
Language of Study	English			
Pre-Requisites	None			
Accreditation by Professional Statutory and Regulatory Body	None			
Module Cap (Maximum number of students)	None			
Target Audience	This module is compulsory for students on the MSc Demography and Health and a requirement for those wishing to take the Population Dynamics and Projections module (SU2429). Students on the MSc Epidemiology can take the first 5 weeks as an elective.			
Module Description	A module teaching the key techniques of demographic analysis relevant to the study of population and health.			
Duration	Part 1: 5 weeks (Thursday morning); Part 2: 5 weeks (Wednesday afternoon + Thursday morning)			
Timetabling slot	Term 1			
Last Revised (e.g. year changes approved)	Month/Year			

2. Programme(s) that this module is part of

Programme <i>(Lead programme first)</i>	Status <i>(Compulsory/Recommended Option)</i>
MSc Demography and Health	Compulsory
MSc Epidemiology	Recommended option (first 5 weeks)

3. Module Aim and Intended Learning Outcomes

Overall aim of the module
To enable students to understand and apply key techniques of demographic analysis relevant to the study of population and health.

Module Intended Learning Outcomes
<p>By the end of the first half of this module, students should be able to:</p> <ul style="list-style-type: none"> • Demonstrate an understanding of some key techniques used in demographic analysis for the measurement of fertility and mortality. This includes standardization techniques and the construction of life tables. • Identify the key steps in interpreting basic demographic data • Explain the usefulness of a demographic approach for the study of population and health issues <p>By the end of the entire module students should additionally be able to:</p> <ul style="list-style-type: none"> • Demonstrate a broader understanding of techniques used in demographic analysis for the measurement of fertility, mortality, migration, population structure and change • Appreciate how different types of demographic information may be collected and used



4. Indicative Syllabus

Session Content

The first half of the module comprises five half-day sessions on Thursday mornings. Each session consists of a lecture and a practical session. Most practical sessions are computer-based. To that end students can use either **Excel**, **Stata** or **R**. The second half of the module is taught on Wednesday afternoons and Thursday mornings and also uses a format of lectures mixed with practicals.

The module is expected to cover the following topics (subject to change):

Part 1 (weeks 1-5)

- **Population composition, basic rates and ratios:** Ratios, probabilities and rates, the balancing equation of population change, person-years, age and sex (population pyramids)
- **Measuring mortality and standardization:** Crude Death Rate (CDR), age-specific death rates, direct and indirect standardization, other mortality indices (IMR, U5MR, MMR)
- **Life tables:** Cohort and period life tables, life expectancy (e_0)
- **Life table extensions and applications.** The life table as a stationary population, survivorship ratios, Net Reproduction Rate (NRR)
- **Fertility:** concepts and definitions, child/woman ratio, Crude Birth Rate (CBR), General Fertility Rate (GFR), age-specific fertility rates, Total Fertility Rate (TFR), cohort fertility

Part 2 (weeks 7-11)

- **Cohort fertility and parity progression:** Period versus cohort fertility measures (tempo distortions), Completed Family Size (CFS), Parity Progression Ratio's (PPR)
- **Birth Intervals and the proximate determinants of fertility**
- **Demographic data sources (1):** censuses, vital registration, and surveys
- **Demographic data sources (2):** longitudinal studies, demographic surveillance, and causes of death
- **Measures of morbidity and mortality:** Health expectancies (Sullivan's active life expectancy and Disability Adjusted Life Expectancy), and health gap measures (Disability Adjusted Life-Years, DALY)
- **Migration:** definitions, migration as a component of population change, data sources, age patterns of migration rates, estimating net migration
- **Multiple decrements:** Multiple decrement life tables and cause-deleted life tables
- **Nuptiality:** Marriage rates (decremental versus non-decremental rates), Indirect median age at first marriage, Singulate Mean Age at Marriage (SMAM), nuptiality tables

5. Teaching and Learning

Notional Learning Hours		
Type of Learning Time	Number of Hours	Expressed as Percentage (%)
Contact time	45	30
Directed self-study	30	20
Self-directed learning	30	20
Assessment, review and revision	45	30
Total	150	100

Teaching and Learning Strategy	
<p>Each lecture is followed by a computer practical (a day or week later) that contains one or more applications of the material covered in class. The tutorial leaders discuss the solutions in group towards the end of each practical.</p> <p>During the tutorials, students can use a statistical package of their choice. Whenever this is relevant, the solutions are provided for Excel, Stata as well as R. Solutions and computing code are made available through Moodle after the practical session.</p>	
<p><u>Indicative Breakdown of Contact Time</u></p>	
Type of delivery	Total (hours)
Lecture	<u>23</u>
Seminar	
Tutorial	<u>2</u>
Computer Practical	<u>20</u>
Laboratory Practical	
Fieldwork	
Project Supervision	
Total	45

6. Assessment

Assessment Strategy
<p>A formative assessment (students can take this in class or as a take-home exam) with feedback will be organised in December. Formal examination is held in June.</p> <p>A formula 'cheat' sheet will accompany the exam questions. Students are, in other words, not expected to learn formulas by heart.</p> <p>Students are only examined on their understanding of demographic methods, not on their ability to implement these methods and techniques in a statistical software package.</p>



Summative assessment

Assessment Type	Assessment Length (i.e. Word Count, Length of presentation in minutes)	Weighting (%)	Intended Module Learning Outcomes Tested
<i>Coursework</i>			
<i>Exam (Papers 1 & 2)</i>	45mins	100	
<i>Group Presentation</i>			
<i>Group Work</i>			
<i>Peer Assessment</i>			
<i>Project</i>			
<i>Practical</i>			
<i>Timed Test (in-module test e.g. MCQ)</i>			
<i>Extended Project</i>			

Resitting assessment

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

Resit/deferred/new attempts will be by unseen written examination early/mid-June in the following academic year.

For individual students resitting a group assessment there will be an approved alternative assessment as detailed below.

Assessment being replaced	Approved Alternative Assessment Type	Approved Alternative Assessment Length (i.e. Word Count, Length of presentation in minutes)
n/a	n/a	n/a

7. Resources

Indicative reading list (if applicable)

Most of the topics in this course (and more) are covered by four online modules that LSHTM has developed for the International Union for the Scientific Study of Population. These are freely accessible via <http://papp.iussp.org/>, and are also referred to as the “PAPP sessions” (Population Analysis for Policies and Programs). The PAPP sessions do not require any prior knowledge of calculus and can be used as the lecture notes for this course (in combination with the slides used in class)

Student who prefer a different style of presentation may also consult one of the following three textbooks:

- (1) Palmore, J. A., & Gardner, R. W. (1994). *Measuring mortality, fertility, and natural increase: A self-teaching guide to elementary measures*. Honolulu: East-West Center, 169 p.

This is a basic textbook covering most topics from the first half of the term. Ideal for students without a strong maths background and more succinct than the PAPP sessions. A pdf of this book is available from <http://scholarspace.manoa.hawaii.edu/>

- (2) Rowland, Donald T. (2003). *Demographic methods and concepts*. Oxford: Oxford University Press, 546 p.

Another non-technical introduction to demography, including a discussion of migration measurement.

- (3) Preston, S., Guillot, M. & Heuveline, P. (2001). *Demography. Measuring and Modeling Population processes*. Oxford: Blackwell, 291 p.

Standard reference for graduate students with a stronger quantitative background (some expositions involve calculus). Also covers the topics taught in the second half of the term and is a good reference for those interested in extensions of the methods covered in class.

8. Teaching for Disabilities and Learning Differences

Lecture notes (including audio recordings), reading lists, and computer practical resources are made available through Moodle. Suggestions for background reading are tailored to the students prior training in statistics and/or mathematics. All of the material covered in the lectures is also available through an open access learning platform developed by LSHTM (<http://papp.iussp.org/>).

Supplementary exercises with solutions (including old exam questions) are made available through Moodle.