Diploma/MSc in Official Statistics
Professional Development Programme
Diploma/MSc in Demography
Diploma/MSc in Social Statistics

DEMO 6022 Demographic Methods 2

Programme and course outline

9-13 March 2015

Seminar Room
Social Statistics Research Centre
(Building 39)
University of Southampton
Highfield
Southampton

Campus map:
http://www.southampton.ac.uk/visitus/campuses/maps/highfield_3d_key.pdf

Building 39 is in the north-west corner of the Highfield campus, across the side road from the Murray Building (Building 58)


BURGESS ROAD
TO M3/M27
SOUTHAMPTON COMMON
SALISBURY ROAD
UNIVERSITY ROAD
BROADLANDS ROAD
CHAMBERLAIN ROAD
HAWTHORN ROAD
HARTLEY AVENUE
N
June 2009©Cartographic Unit
School of Geography
University of Southampton

PROGRAMME

MONDAY 9 MARCH 2015

9:30	Registration
10:00	L1: Introduction to the Course and Refresher Session. Group Exercise on Ethnic Group Fertility in the UK.
11:00	**Coffee/tea break**
11:15	L2: Multiple decrement life tables and other advanced life table methods.
12:15	*Class Exercise 1: Dependent multiple decrement life table.*
1:00	**Lunch break**
2:00	L3: Multiple decrement life tables and health expectancies.
3:45	**Coffee/tea break**
4:00	*Class Exercise 2: Independent multiple decrement life table and health expectancies.*
5:00	**Close**

TUESDAY 10 MARCH 2015

9:30	L4: Event history analysis and birth histories.
10:15	L5. Additional fertility measures: parity progression and birth interval measures. *Class Exercise 2: Handling event history data.* *Class Exercise 3: PPRs*
11:00	**Coffee/tea**
11:15	L6: Fertility and reproduction estimated from cross-sectional or longitudinal surveys.
1:00	**Lunch break**
2:00	*Class Exercise 4: Birth interval analysis.*
3:45	**Coffee/tea break**
4:00	*Class Exercise 4: Birth interval analysis (continued).* *Question and answer session on day 2.*
5:00	**Close**

WEDNESDAY 11 MARCH 2015

9:30	L7: Models age patterns and stable population theory.. Applications: historical data and populations lacking complete vital statistics.
11:00	**Coffee/tea**
11:15	*Class Exercise 5: Stable population calculation.*
12:45	**Lunch break**
2:00	L8: Models for measuring fertility changes.
2:45	*Class Exercise 6: Estimation of net migration using stable population models and empirical data.*
3:45	**Coffee/tea**
4:00	*Class Exercise 6: (continued).*
5:00	**Close**

Thursday 12 March 2015

9:30	Questions and answers on day 3.
10:00	L9: Stable population theory, variants and applications to data quality assessment.
11:00	**Coffee/tea**
11:15	L10: Models for demographic estimation when data are incomplete or inaccurate.
1:00	**Lunch break**
2:00	ONS speaker: Fern Leather from Titchfield
3:15	Discussion of ONS procedures and recommendations.
4:00	**Coffee/tea**
4:15	Review session: topics for final day
5:00	**Close**

Friday 14 March 2015

9:30	L 11: Modelling forecasts of fertility and mortality for projections.
11:00	**Coffee/tea**
11:15	*Class Exercise 7: Using MORTPAK, PAS Spreadsheets and Tools for Demographic Estimation and projection.*
1:00	**Lunch break**
2:00	Mock examination questions, solutions and advice on further reading and revision.
4:00	**Close**

Conduct of the course.

The slides for each lecture will be provided in printed booklets distributed at the outset. Additional explanatory slides and other teaching materials will be added to the course website. For the class exercises, students may work in small groups. Calculators will be provided but students are welcome to use their own laptop computers if available. Some public-domain software for demographic analysis will be distributed to all students. Some key readings will be posted on the website and students are expected to have read the required papers before the class.

LECTURER

Professor Allan G. Hill is the course coordinator and will be available for consultation throughout the course. The course is based on the module taught over a number of years by Professor Máire Ní Bhrolcháin whose contributions to the development of the syllabus, the lectures and the exercises are gratefully acknowledged. The Teaching Assistant is Ben Pedley.

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PRE-REQUISITE

DEMO 6020 Demographic Methods 1 or equivalent course

AIMS AND OBJECTIVES

To introduce students to more advanced demographic methods and to illustrate their application to official statistical purposes and related demographic questions.

LEARNING OUTCOMES

On successful completion of this course, you will:

(a) Understand the concepts underlying stable population theory and ways in which birth rates, death rates and migration affect the age composition of a population;
(b) Be familiar with models of fertility and mortality and how these are used for forecasting and demographic estimation.
(c) Be clear about more complex applications of the life table –multiple decrement and increment-decrement applications.
(d) Understand the major approaches to the estimation of fertility and reproduction using parity-specific fertility measures and related statistics;
(e) Understand the principles and potential biases involved in analysing event history data.

KEY SKILLS

(a) Be able to construct a multiple decrement life table, and to re-calculate a life table with one cause of death deleted;
(b) To calculate parity progression ratios, measures of marriage change and other measures using event histories;
(c) To use models of fertility and mortality to produce estimates of future levels and trends.
(d) Problem solving. Using spreadsheets and open access demographic software for a range of demographic tasks.

CALCULATORS

Calculators will be provided for MOffStat students: you will be asked to sign on receipt and to return the calculator to the MOffStat Administrator (Room 2101 Murray Building) before you leave Southampton.

All other students: please bring a calculator with you.

TEACHING AND LEARNING METHODS

The course will be taught by lectures and extended small-group practical classes. Paper copies of the lecture slides and class exercises will be handed out at the beginning of the course. Some indicative reading is given at the end of this outline, and further sources will be mentioned in lectures.

BLACKBOARD SITE

When registered for the unit, you should be enrolled automatically on the Unit's Blackboard course and you can log on at: **14-15 – Demographic Methods 2 – 25620**. If you do not have access to the site please let us know so that we can enrol you.

ASSESSMENT METHODS

The course will be assessed 100% by a 2-hour examination. The paper is in three sections. Section A has one compulsory question, worth 33% of the total marks, in Section B you may choose one of two questions, worth 33% of the marks, and Section C has one compulsory question, worth 34% of the marks. In exam papers before 2010-11, the structure differed slightly, but the style of the corresponding questions remains the same.

Feedback on examination performance will be posted online at the time that results are made available.

RESIT ARRANGEMENTS

In case of resit, you will have to take a supplementary examination.

ACADEMIC INTEGRITY

The University places the highest importance on the maintenance of academic integrity in the conduct of its affairs, and has produced a guide to issues of academic integrity for students. This can be found in the University Calendar available online at http://www.calendar.soton.ac.uk/sectionIV/part8a.html, and this is reproduced in the (School's Part 1 handbook/School's Part 2 and 3 handbook/MSc booklet*) available on the School of Social Sciences intranet at http://www.soton.ac.uk/socscinet. Please familiarise yourself with what is expected of you in this regard by reading through this information. Your attention is drawn particularly to Appendix 1 of the Academic Integrity Statement, which outlines those things which you must seek to avoid, including cheating and plagiarism.

If academic integrity is deemed to have been breached, there are a range of penalties that may be applied.

If you are unsure about what is and is not permitted, ask - we will be happy to explain and discuss

TROUBLESHOOTING

If you have any difficulties during the course, please approach the course co-ordinator who will be happy to help you, if she can. If this does not resolve the problem, you could discuss the issue with the programme co-ordinator, Dr Solange Correa-Onel (s.correa-onel@soton.ac.uk).

If you have a major difficulty during the course, such as a health problem that prevents you from attending lectures, or seriously interferes with your work, you should make sure to

obtain documentation of the difficulty—e.g. a medical certificate. You should then fill in a Special Considerations form and bring it with any documentation to your personal tutor for signature, and eventually to School Office for filing. The difficulty can then be taken into account when the final examination board meets.

READING

General demographic methods

Selected sections of each of these texts will be useful to you—you would not be expected to work through all of them, or even any one of them, from start to finish. Further reading will be given for each topic area.

Useful refresher texts:

Newell, C. (1988) Methods and Models in Demography. London: Belhaven. HB 881 NEW
Good, introductory text, with exercises and answers. Strong on model life tables and fertility measures. £3 or so used on Amazon.com

Hinde, A (1998) Demographic methods. Arnold, London. (with Internet site for exercises). HB 881 HIN. 12 copies in Library. From £8 used on Amazon.com. *Available electronically through the Library.*

The best single text which is worth purchasing if intending to go further is:

Preston, S.H., Heuveline, P. and Guillot, M. (2001). Demography: Measuring and Modelling Population Processes. Oxford: Blackwell. HB849.4PRE
Excellent text; more advanced than those above.

Other texts arranged from easy to more difficult:

Palmore, JA and RW Gardner (1994) Measuring mortality, fertility and natural increase. East-West Center, Honolulu.

Weeks, J.R. (2004) Population: An Introduction to Concepts and Issues. Wadsworth Publishing Company: New York. Ninth Edition. HB 871 WEE.

Siegel, JS & DA Swanson (eds.) (2004) The Methods and materials of demography. 2nd edition. San Diego, CA: Elsevier Academic Press. HB 881 SIE

Siegel, J.S. (2002) Applied Demography: Applications to business, government, law and public policy. London: Academic Press. HB 849.4 SIE
Excellent on applied aspects, though with American focus and examples. See selected sections of Chapters 1, 3 and 4 on measurement, life tables and data sources, and Chapter 9 on population estimates.

Pollard, A.H., Yusuf, F., and Pollard, G.N. (1990) Demographic Techniques. 3rd edition. Oxford: Pergamon Press. HB 881 POL
A very straightforward and useful text, though not comprehensive.

Rowland, D. (2003) Demographic methods and Concepts. Oxford: OUP.
A good recent general text on methods. HB849.4 ROW

Poston, D and L Bouvier (2010) Population and society: an introduction to demography. Oxford. HB 849.4 POS
Excellent text, more advanced than others in this list

Pollard, A.H., Yusuf, F., and Pollard, G.N. (1990) Demographic Techniques. 3rd edition. Oxford: Pergamon Press. HB 881 POL
A straightforward and useful introductory text, though not comprehensive.

Rowland, D. (2003) Demographic Methods and Concepts. Oxford: OUP
A good recent general text on methods HB849.4 ROW

Smith, David P. (1992) Formal Demography. New York : Plenum Press.

Wachter, K. (2014) Essential Demographic Methods. Harvard.

Further demographic measurement

Ní Bhrolcháin, M. (2001) Demographic measurement: general issues and measures of fertility. *International Encyclopaedia of the Social and Behavioural Sciences*, Elsevier.
Reserve Collection DEMO6022

Ní Bhrolcháin, M. (2001) Demographic measurement: nuptiality, mortality, migration, and growth. *International Encyclopaedia of the Social and Behavioural Sciences*, Elsevier.
Reserve Collection DEMO6022

* Ní Bhrolcháin, M. (2011) Tempo and the TFR. *Demography* vol. 48*:* 841-861. (optional)

Handling event histories

Ní Bhrolcháin, M. (1993) Describing time-trends in fertility using maternity history information. Chapter 3 in M. Ní Bhrolcháin (ed) *New Perspectives on Fertility in Britain.* London: HMSO (Studies in Medical and Population Subjects No. 55), pp. 33-50.
quarto HB 891 NIB

Population projections

Office for National Statistics (2011) National Population Projections, 2010-Based Statistical Bulletin. http://www.ons.gov.uk/ons/dcp171778_235886.pdf

Keilman, N. (2007) National population projections in perspective: How successful compared to those in other European countries? *Population Trends* 129*: 20-30*

Keilman, N. (2008) European demographic forecasts have not become more accurate over the past 25 years. *Population and Development Review* 34: 137-153.

Siegel, J.S. (2002) *Applied Demography: Applications to business, government, law, and public policy.* London: Academic Press, Chapter 10.

Allan G. Hill
16 January 2015.