

## Research Methods Short Course Programme

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To book a place on any of these courses, please email Magdalen Meade ([m.meade@ioe.ac.uk](mailto:m.meade@ioe.ac.uk)) saying which course you are interested in and giving the name and address of the person we should invoice, plus a Purchase Order number if your organisation requires this. Bookings without this information will be provisional only.

Your booking will be acknowledged and joining instructions sent to you about two weeks before the start of the course.

You may cancel your booking up to four weeks before the start of the course with no penalty. If you cancel later than that, we may have to charge you the whole fee. If we cancel a course, we will tell you as soon as it is known, and you will not be invoiced.

Most courses run from 09.30 to 17.00 each day; some may start at 09.45 or 10.00 on the first day.

All our courses are held at the main Institute of Education building, 20 Bedford Way, London WC1H 0AL.

For further information or any queries/suggestions, please contact [m.meade@ioe.ac.uk](mailto:m.meade@ioe.ac.uk).

**Please note:** cost of all courses covers an individual pack of materials, and refreshments *but not lunch* during the days of the course.

			Provisional dates 2011-12	Cost	
<b>Introductory statistics course</b>	Review of statistical concepts and methods	2 days	<u>27 Sept 2011</u> 28 Sept 2011	£525	
<b>Statistical analysis</b>	Methods of data analysis	2 days	<u>12 Oct 2011</u> 13 Oct 2011	£525	fee for any two of these courses: £900
	Multivariate analysis	2 days	<u>8 Nov 2011</u> 9 Nov 2011	£525	
	Data reduction and latent variable models	2 days	<u>13 Dec 2011</u> 14 Dec 2011	£525	
<b>Experimental &amp; quasi-experimental design</b>		2 days	<u>22 Nov 2011</u> 23 Nov 2011	£525	
<b>Qualitative research and analysis</b>	Policy analysis and evaluation from a qualitative perspective	3 days	<u>10 Jan 2012</u> 11 Jan 2012 12 Jan 2012	£700	
<b>Longitudinal research and analysis</b>	Longitudinal analysis	2 days	<u>8 Feb 2012</u> 9 Feb 2012	£525	fee for both courses: £900
	Longitudinal modelling	2 days	<u>29 Feb 2012</u> 1 March 2012	£525	
<b>Research synthesis for policy and practice</b>		4 days	<u>20-21 Mar 2012</u> 11-12 April 2012	£900	
<b>Research for policy</b>		2 days	<u>24 April 2012</u> 25 April 2012	£525	
<b>Evaluation methods and economic appraisal</b>		4 days	<u>2-3 May 2012</u> 16-17 May 2012	£900	
<b>Sampling design</b>		2 days	<u>20 June 2012</u> 21 June 2012	£525	
<b>Data collection survey methods</b>		2 days	Not running in 2011-12, next offered in 2012-13. Alternates with Sampling design		

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## Introductory Statistics: Review of statistical concepts and methods

**Tutor:** Dr Kirstine Hansen

This two day course is for social researchers and analysts who want to learn about, or review, how to use basic statistical concepts and methods. It is advisable that students attend this course before attending any of the other statistics courses run by IOE.

The aim of the course is to allow participants to familiarise themselves with the principles underlying statistical thinking and practice, without focusing extensively on the technical or mathematical detail and gain familiarity with basic statistical procedures in SPSS software.

The course will cover

- The most commonly-used descriptive statistics for summarising survey data: arithmetic mean, proportion/percentage, median, mode, percentile, range, variance, standard deviation
- The normal distribution and understand its importance in survey data analysis
- Simple tables
- Sampling distribution, sampling error, standard error, margin of error, variance, bias, levels of measurement
- Random and non-random methods of selecting a sample
- Confidence intervals when generalising data from the sample to the population
- Review of basic algebra
- PASW/SPSS basics

### Expected learning outcomes

After successful completion of this module students will be comfortable with the following concepts:

- survey process and levels of measurement
- basic descriptive statistics
- normal distribution
- estimation based on random (probability) samples
- sampling distribution, sampling error and bias
- margin of error and standard error
- confidence intervals for means/proportions and differences
- basic algebra
- use of PASW/SPSS statistical analysis package.

### What previous students have said about this course:

'Good refresher course for stats'

'Good stuff.'

'Overall the course was very good'

'Pace of the course was excellent. Exercises were interesting and relevant to my work'

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## Methods of data analysis

**Tutor:** Dr Kirstine Hansen

This two day course is for people who want to develop their skills in data analysis. The course aims to familiarise students with: basic descriptive statistics; hypothesis testing and statistical significance; correlation and regression analyses. In the workshops the objective will be to put the analytical techniques introduced in the lectures to use. Students will learn how to analyse a large dataset using a statistical computer package (SPSS) and will be encouraged to develop good practice in presenting and interpreting the statistics they produce. By the end of the course, students should be able to analyse critically the use of statistics in social policy research and to feel comfortable with handling a large scale dataset and with producing and interpreting some basic statistics of their own.

The course is a follow-on from the introductory statistics course so a basic level of statistical awareness is expected.

The course will cover:

- Descriptive statistics (measures of central tendency and dispersion)
- Sampling and sampling distributions
- The normal distribution
- Standard errors and confidence intervals
- Hypothesis testing, statistical significance and p-values
- T-test
- ANOVA F-test, and chi-square test
- Analysing bivariate relationships. Scatterplots, correlation and regression.

### **Expected learning outcomes**

The aim of this course is to promote basic quantitative literacy, so that you will be able to carry out analyses for yourselves and are better able to read, understand and think critically about the research literature.

By the end of the course you should be able to:

- understand the role of quantitative techniques in policy
- produce descriptive statistics and perform statistical tests
- interpret tables, graphs and test statistics

### **What previous students said about this course:**

'Very coherent and well-explained course. Catered for different abilities well'

'A difficult topic but very well explained'

'Really enjoyed the course'

'This is a really good and useful course... SPSS guide is really useful'

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## **Multivariate analyses**

**Tutor:** Dr Erzsebet Bukodi

This two day course aims to familiarise students with regression methods for survey data. The course will first focus on simple and multiple regression – where the dependent variable is a continuous one, and will then focus on binomial and multinomial logistic regression – where the dependent variable is binary or categorical. The course is aimed at people who wish to develop their skills in analysing survey data. The course has a strong practical emphasis, with sessions on computers to enable participants to work through examples that are based on real social survey data.

The course will cover:

- linear regression function,
- multiple regression function,
- testing collective influence of explanatory variables,
- inferences for regression coefficients,
- dealing with categorical variables in regression equation,
- regression with continuous and categorical variables,
- interactions between explanatory variables,
- model selection,
- limitation of automatic selection procedures,
- nested models,
- odds, odds ratios,
- logistic regression models for binary responses,
- inference for logistic regression models,
- logistic regression for nominal responses,
- significance testing in multinomial regression.

## Expected learning outcomes

The aim of this course is to promote quantitative literacy, so participants will be able to analyse survey data using multivariate statistical methods, and will be able to read, understand and think critically about quantitative social research.

By the end of the course participants are expected:

- to understand methods of modelling associations between variables with focus on linear and logistic regression,
- to employ appropriate methods in analysing their own data,
- to carry out linear and logistic regression using SPSS,
- to interpret findings of multivariate statistical analysis correctly and to be able to defend the interpretation.

## Pre-requisites

This course is designed to follow on from the Methods of data analysis course, so participants are expected to be familiar with basic descriptive statistics, hypothesis testing and standard errors and statistical significance.

## What previous students said about this course:

'A fantastic introduction to multivariate analyses pitched at a good level.'

Excellent explanation and documents - made something complex very clear.'

'Very useful course, and very thorough... Have learned a lot though, which I hope to incorporate into some analysis I am doing.'

'Important to attend the Methods of data analysis course as does assume prior knowledge and understanding.'

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## Data reduction and latent variable models

**Tutor:** Professor Dick Wiggins

This two-day course combines an introduction to data reduction using principal components analysis and factor analysis to explore the measurement properties of multi-item scales typically used to assess social attitudes and metrics e.g. quality of life, well-being and life satisfaction. The second day introduces students to the principles underlying structural equation modelling starting with measurement models and latent predictors using AMOS software.

This course covers

- The use of data reduction techniques and non-regression based analysis methods such as Principal Component Analysis and Factor Analysis
- Methods of modelling relationships between latent variables and introduce the basics of structural equation modelling using AMOS.

## Expected learning outcomes

- On completion of the module participants will be able to:
- select methods of data analysis appropriate to their data and research questions
- carry out a range of data reduction analyses using SPSS
- carry out a range of latent variable analyses using the SPSS AMOS module
- diagnose whether the assumptions have been adhered to in the analyses covered, and discuss the potential impact on the results and propose solutions to any problems that may have arisen
- critically evaluate the data analysis methods proposed or undertaken in a given study
- ensure interpretation of data analysis findings is done correctly and be able to defend the interpretation.

## Prerequisites

Students need to be familiar with the content of the courses Methods of data analysis and Multivariate analyses.

### What previous students said about this course:

'I really enjoyed the course. The pace was just right and the combination of lecture and workshop allowed for a change of focus. It was great to have so much support during the workshops.'

'Teaching was excellent, lots of materials and examples provided.'

'The exercises really helped reinforce the content of the presentations and the right level of guidance was provided while still leaving room to think through them independently.'

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## Experimental and quasi-experimental design

**Tutor:** Professor John Micklewright

This two day course is for researchers and analysts who want to know the basics of experimental and quasi-experimental methods of evaluation of economic and social policies, how to use these methods effectively, and how to understand and appraise other researchers' uses of them. It complements the course on 'Evaluation methods and economic appraisal', which is at a more advanced level.

The course will cover:

- the evaluation problem: the counterfactual, confounding, and validity
- randomised control trials ('field experiments')
- 'before and after' designs, matching methods, difference-in-differences
- case studies of experimental and quasi-experimental policy evaluation
- practical issues surrounding choice of method

### Expected learning outcomes

By the end of the course you should understand both the principles and practical issues guiding the choice between alternative methods of experimental and quasi-experimental design. You should be able to interpret the results of research using either type of method, be able to judge its quality, and be able to design a broad strategy for the evaluation of a specific programme or policy. You will also have a firm foundation that can be built on in the Evaluation Methods and Economic Appraisal course.

### What previous students said about this course:

'Very engaging and informative tutor. Made the learning fun and thought provoking.'

'At just the right level.'

'A very good course. One of the best I have done.'

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## Policy analysis and evaluation from a qualitative perspective

**Tutor:** Professor Gemma Moss

This three day course is for researchers who want to develop their understanding of qualitative methods of social research and how they can be used effectively for policy-related research and evaluation. Qualitative research methods and designs provide an important means of understanding the social world and of evaluating the consequences of policies that have been designed to impact upon social life. This course aims to familiarise students with the principles and practices of a range of approaches to qualitative research and evaluation; their strengths and limitations; and their application to government and policy-related research questions.

The course will help students develop the skills and understandings required to conduct, design and evaluate research involving qualitative data; appreciate key ethical and political issues in the conduct and dissemination of qualitative research; and understand the value of qualitative evaluation.

The course is suitable for students with differing levels of experience in using qualitative approaches, including those with primarily quantitative backgrounds. It would benefit anyone who wants to strengthen their understanding of the application of qualitative methods to policy-based research.

This course will cover:

- The theory and practice of conducting qualitative research in policy settings;
- Knowledge, values and methods in qualitative research;
- Qualitative research methods for policy evaluation;
- Issues in qualitative research design;
- Qualitative data analysis and generalisability in qualitative research.

### **Expected learning outcomes**

By the end of the course you should be able to:

- understand and know how to formulate and apply a range of qualitative research designs and methods to policy research questions;
- understand the contribution qualitative approaches can make to research and evaluation for policy
- assess when to use qualitative as opposed to quantitative methods, and when to combine approaches
- critically evaluate qualitative research

### **What previous students have said about this course:**

'Should be compulsory. My all-round research skills are richer for having attended this course.'

'Excellent that there were exercises for each element and could relate them to actual practices back at work.'

'Good range of topics, all linked, good pace.'

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## **Longitudinal analysis**

**Tutor:** Professors John Micklewright and Ingrid Schoon

This two day introductory course is for students who want to know more about longitudinal data and research design, and how longitudinal data and research can be used to answer key policy questions. It forms the first two days of the four day MSc module on 'Longitudinal Research and Analysis', but can be taken as a stand-alone course.

A basic level of statistical awareness is expected for this course.

The course will cover:

- Longitudinal data
- Cohort data
- Panel data
- Attrition
- Recall bias
- Causality
- First difference models

### **Expected outcomes of this course:**

This course provides an introduction to longitudinal research methods and longitudinal data. By the end of the course students will have:

- developed a better understanding of how longitudinal research can answer key policy questions;
- understood the strengths and limitations of longitudinal data;
- understood the strengths and weaknesses of longitudinal research designs.

**What previous students said about this course:**

'Very well organised'

'This is exactly what I needed. The content was perfect.'

'I liked the interactive points and discussions.'

'A big topic but a good intro.'

## Longitudinal modelling

**Tutor:** Professors John Micklewright and Ingrid Schoon

This two day advanced course aims to provide the methodological and technical skills required to understand the role that longitudinal data can play in the analysis and evaluation of other policy interventions. It is intended as a follow on from the [longitudinal analysis](#) course.

The course will cover:

- Longitudinal research design
- Panel data methods
- First difference models
- Fixed effect models
- Causality

**Expected outcomes of this course:**

This course will apply different methods of longitudinal analysis to the problem of policy evaluation. By the end of the course students will:

- gain experience of undertaking statistical analyses of longitudinal models using specified data and software packages (e.g. SPSS/STATA);
- be able to critically evaluate others' use of these methods;
- understand the different ways of designing a longitudinal survey and which are appropriate to particular data collection needs;
- critically analyse research studies and policy evaluations that have used longitudinal data;
- be able to design an evaluation using longitudinal data.

**What previous students said about this course:**

'I really enjoyed the course and it worked really well as a follow up to the first two days.'

'Very interesting and well focused presentations.'

'Excellent to have all content given in slides collated into bound guide.'

'All questions answered- lecturers open to give help at every opportunity.'

## Research synthesis for policy and practice

**Tutor:** Rebecca Rees

This course teaches students to evaluate the role played by systematic reviews of research literature within evidence-informed decision-making in policy and practice. Students will examine a wide-range of different review approaches in terms of both theory and practice, including meta-analysis, meta-ethnography and other kinds of 'qualitative' synthesis, and systematic mapping. They will also evaluate the role of stakeholders in enabling evidence to be relevant for policy and practice and appraise

actual examples of reviews from a variety of policy areas. The course provides hands-on experience of applying recognised methods at key review stages.

This course will cover:

- What are systematic approaches to reviewing and why do we need them?
- Common stages of a systematic review
- Perspectives and participation in systematic reviews: making reviews relevant and useful
- Setting the scope: review questions, conceptual frameworks and inclusion criteria
- Different types of systematic review
- Searching for studies
- Systems for planning and managing reviews
- Screening studies: identifying relevant research
- Describing and appraising the quality and relevance of studies
- Synthesis of study findings
- Designing a review
- Using reviews: communication, interpretation, application
- Critically appraising systematic reviews
- Systematic reviews: challenges and critiques

### **Expected learning outcomes**

After successful completion of this course students will:

- have a critical understanding of the purpose of systematic research synthesis and its relevance to evidence informed policy and practice;
- be able to identify a diversity of approaches to synthesis along with principles and decision points central to all;
- be able to develop a protocol for a systematic review to include a review question, conceptual framework, methods for searching, screening, describing, appraising and synthesizing studies, and a strategy for communication and implementation;
- be able to draft a plan for accessing tools and other resources for managing a systematic review;
- have explored the potential for systematic approaches for their work.

### **Pre-requisites**

Second-class degree in health, education or another area of social science or social policy, or other professional qualification e.g. for teaching, police force, health care, social work.

### **What previous students said about this course:**

'Very helpful course - I feel I can apply what I learnt.'

'I feel like I would be much more confident in commissioning a review.'

'If you want to carry out a successful systematic review, this is the course for you.'

'Excellent training. It could be a prototype of a part of obligatory training of civil servants at the ministry level who have policy forming tasks.'

'Overall for me, I not only learned more about the technical process of systematic reviews but felt I also benefited from the discussions regarding both general systematic review issues.'

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## **Research for policy**

**Tutor:** Professor Gemma Moss

This two day course is for those wanting to explore the role of research evidence in public policy. The course will familiarise students with key concepts in the research and policy literature on evidence-based and evidence-informed policy. Students will

explore the main characteristics of the contemporary policy environment and critically reflect on its use of research to shape and inform policy and government decision-making. Approaches to research utilisation which can improve uptake of high quality research in policy settings will be considered. The course will be useful to those who already operate in a wide range of policy contexts including working inside government or its agencies, those outside government who undertake government-funded research, or have a general interest in this topic.

The course will cover

- Evidence based and evidence informed policy
- Characteristics of the policy environment that shape decision-making
- Models of policy making and research utilisation
- Influencing policy: the quality of the evidence
- Influencing the research agenda: mobilisation, adaptation and impact of research on policy

### **Expected learning outcomes**

By the end of the course you will be able to:

- understand the range of roles and responsibilities that shape policy formation and delivery in government
- appreciate the difference between evidence-based and evidence-informed policy making
- identify strategies that encourage usage of high quality research.
- apply a critical understanding of the theory and practice of using research evidence in policy to your own working context

### **What previous students have said about this course:**

'Built my knowledge of the political/policy link to research and gave me a good opportunity to appreciate different perspectives.'

'Good to have recent examples.'

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## **Evaluation methods and economic appraisal**

**Tutor:** Professors Lorraine Dearden and John Micklewright

This four day course is for researchers and analysts who want to know how to carry out non-experimental policy evaluation of economic and social policies, how to choose the most appropriate method for a particular problem, and how to understand and appraise other researchers' evaluations of economic and social policies including the cost and benefits of those policies. It builds on the material covered in Experimental and Quasi-experimental design, but at a more advanced level. It will also include optional hands-on computer sessions (non-assessable) which show people how to actually estimate the effects of policies using all the methods discussed in class.

This course will cover:

- Overview of the evaluation problem: the counterfactual, confounding, and validity including randomised control trials ('field experiments')
- Assumptions, strengths and weaknesses of using different evaluation methods including regression methods, difference-in-difference methods, propensity score matching and instrumental variable methods
- Case studies of different uses of these methods including
- Cost Benefit Analysis

### **Expected learning outcomes:**

By the end of the course you should be able to critically appraise research and papers that use different non experimental evaluation techniques and recognise the strengths and limitations of different studies and approaches. You should be able to have a clear

understanding of how to assess the costs and benefits of a policy initiative and assess the strength and weaknesses of published Cost Benefit Analysis (CBA) studies. You should be able to robustly design an evaluation strategy for a specific programme or policy. You will also be able to undertake analysis that estimates the impact of a policy programme or initiative.

### **Prerequisites**

Students need to be familiar with the content of the courses Methods of data analysis and Multivariate analyses

### **What previous students said about this course:**

'The tutor was very clear, concise and open, welcoming discussion and questions.'

'The group discussions where we planned how to evaluate a policy were good.'

'Really useful in pulling together the other elements I have studied on the MSc programme.'

'Particularly liked the examples from real research papers and the way all content was linked to further evidence for this, which helps in breaking down the reading list.'

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## **Sampling design**

**Tutor:** Dr Lisa Calderwood

This two day course is for social researchers and analysts who want to learn the principles of survey sampling and acquire an in-depth understanding of the practical considerations regarding different sampling and weighting methods.

This course will cover:

- The importance of probability sample designs in terms of both practical and statistical considerations
- Stratification, oversampling, clustering and multistage sampling
- Survey design affects on accuracy of estimation
- Basic calculations for sample size determination
- Weighting for differential selection probabilities as well as non-response

### **Expected learning outcomes**

After successful completion of this module students will be able to:

- critically evaluate the sampling methods proposed or undertaken for a given survey
- comment on the appropriate sample size needed for a particular survey
- understand weighting, its rationale, application and implications in survey analysis and reporting
- design probability samples including stratified, boost, clustered and multi-stage samples
- choose appropriate software to estimate standard errors for complex survey designs including the analysis of weighted survey data.

### **Prerequisites**

Participants are expected to have a basic knowledge of simple statistical concepts covered during the Introductory statistics course.

### **What previous students said about this course:**

'Really good balance between talking and exercises.'

'This is a very useful course for me at work. Managed and conducted very professionally.'

'Interesting and good course but hard work at times!'

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## Survey data collection (not being run in 2011-12)

**Tutor:** Dr Kirstine Hansen

This course provides an overview to survey data collection – for those interested in commissioning a survey, conducting one, using data from a survey or even reading a journal article which uses survey data – this course will improve your ability to do all of these things better. It provides participants with an understanding of the different types and modes of survey data collection that can be used to answer key policy questions and gives them an understanding of devising high quality survey instruments.

The course will cover:

- Introduction to survey data collection - different information requires different approaches.
- Different types of surveys (incl. Cross sectional, repeated cross section and longitudinal data).
- Different modes of data collection (incl. CASI, CAPI, PAPI, CATI, postal, online).
- Question design.
- Evaluating survey questions.
- Maximising response rates and responsive design.
- Minimising measurement error.
- Recall bias.
- Additional survey instruments ( diaries, observations, measurements, assessments).
- The linking of data (e.g. survey data with management data).

### **Expected outcomes of this course:**

After successful completion of this module participants will:

- understand the type of survey data appropriate for different research questions.
- be aware of different types of surveys and the strengths and weaknesses.
- develop a better understanding of the differences between qualitative, quantitative and mixed methods data, and their relative advantages and disadvantages.
- know the different costs and benefits of using different survey modes. To introduce computer-assisted methods of data collection (including CASI, CAPI, CATI, online data collection), as well as more traditional postal-data collection, telephone and paper and pencil techniques;
- develop an understanding of survey questionnaire design;
- understand how to obtain high quality data, high response rates, low measurement errors.
- understand the issues around data linking, whereby data from a number of different sources are linked to provide a more comprehensive picture.

### **What previous students said about this course:**

'Covered a great deal.'

'All useful content.'

'The content was well balanced and not *too* much information was provided. In this regard, I felt informed without being overloaded.'