

Quantitative Methods I

MSc and MPhil in Economic and Social History
University of Oxford
2019-20

Lecturer: Mattia Bertazzini *mattia.bertazzini@economics.ox.ac.uk*
Class Teacher: Hannah Zillessen *hannah.zillessen@st-annes.ox.ac.uk*

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1 Course description

The course provides an introduction to applied statistical methods and it is specifically targeted to economic and social history students. By the end of the course, the students should have a good understanding of the main statistical concepts discussed in the course, as well as the practical skills to carry out simple statistical analysis. The course will be organized around lectures (1 hour per week) and computer practicals (2 hours per week) and will run in Michaelmas term only with the final take-home exam due in week 1 of Hilary term.

- *Lectures* will be taught by Mattia Bertazzini and will take place on **Mondays 10.30-11.30 AM** in the Colin Matthew Room at the History Faculty on George Street. Lectures will run in Michaelmas Terms **weeks 1 to 8**.

Lectures will provide students with the necessary theoretical background to apply statistical methods soundly. No mathematical or statistical background is necessary.

- *Computer practicals* will be taught by Hannah Zillessen and will take place on **Wednesdays 9.30-11.30 AM** in the Skills (Computer) Lab of the Economics Department in Manor Road. Computer practicals will run in Michaelmas Terms **weeks 1 to 8**.

Computer practicals are central to the course as they are aimed at introducing students to the use of Stata (a popular software for statistical analysis). During the computer practicals, students will also

have the opportunity to go through the problem sets with the class teacher and to gain the necessary practical skills to implement original econometric analysis.

- Office hours will run weekly and **by appointment only**. Send an email to either Mattia or Hannah to book a slot.
 - *Mattia*: Department of Economics, Manor Road Building, Office 225 **Mondays 1-2 PM**.
 - *Hannah*: Department of Economics, Manor Road Building, Office 225 **Mondays 2-3 PM**.

2 What we expect from students

The course does not feature a final written exam and students will be assessed through a take-home exam due in Hilary Term. To pass the course, students should do the following:

- Attend all classes and lectures. If you are unwell or you cannot attend due to unforeseen circumstances, please send an email to both *mattia.bertazzini@economics.ox.ac.uk* and *hannah.zillessen@st-annes.ox.ac.uk* to let us know.
- Submit the problem sets on time. Problem sets will be circulated on Mondays after the lectures and are due the next Monday. The complete problem sets must be emailed to Hannah at *hannah.zillessen@st-annes.ox.ac.uk* on **Mondays by 8 PM**.

Problem sets should be submitted in .pdf format and should use the convention below for naming:

QMI_SURNAME_NAME_WeekNumber

If the problem set involves the use of STATA, please attach the .do file as well.

If the problem set involves calculations that you prefer to solve by hand, you should send a scanned copy.

Try to go through the problem sets as soon as possible after the lecture. This will allow you to apply the new concepts while they are still fresh in your mind and will allow you to ask questions at the computer practical on Wednesday.

*Note that the problem set of week 1 will be discussed in week 2, week 2 in week 3 and so on. There will be no problem set in week 8.

- Submit a 2000-words formative essay by **noon on Monday of Week 7 (MT)**. Complete essays (including bibliography), should be emailed in .pdf format to *hannah.zillessen@st-annes.ox.ac.uk*. The word count includes footnotes but excludes bibliography and tables. This assignment is intended to prepare you for the final exam and will entail employing the statistical techniques learnt in weeks 1 to 6 to analyse a dataset.

Precise instructions for this assignment will be circulated by **Monday of week 5** so to allow enough time for submission.

- Submit the final take-home exam by **noon of Monday week 1 (HT)**. Complete exams should be uploaded on Weblearn.

Students will be allowed to take the exam at home and will have access to the course materials, but are not allowed to collaborate with each other, nor to seek external help. Each student must take the exam on her/his own, and joint work will not be considered valid for the fulfillment of the requirements for passing the course.

The exam will be composed of two distinct parts. In the first part, students will have to answer open questions related to the topics discussed in lectures and classes. The first part has no specific word limit.

The second part will be a 2000-words essay (similar format as the previous formative essay) and will require the students to apply all available econometric tools to analyse a dataset originally.

Further details will be provided throughout the course, and the exam will be circulated in week 8 of Michaelmas term.

3 Textbooks

The textbook is:

- Feinstein, Charles H., and Mark Thomas. *Making history count: A primer in quantitative methods for historians*. Cambridge University Press, 2002.

Additional readings:

- Wooldridge, Jeffrey M. *Introductory econometrics: A modern approach*. Nelson Education, 2016 (Chapters 1-9)
- Angrist, Joshua D., and Jörn-Steffen Pischke. *Mostly harmless econometrics: An empiricist's companion*. Princeton university press, 2008. (Chapters 1, 2, 3)

For help with STATA:

- Cameron, A. Colin, and Pravin K. Trivedi. *Microeconometrics using Stata, revised edition*. StataCorp LP, 2010.
- <https://www.statalist.org/>

4 IT

- The course requires the use of STATA software package. You can access STATA for free through Oxford University IT services. Their web address is: <http://www.oucs.ox.ac.uk/shop/>
- The course materials (datasets, slides, problem sets) will be available for download in a shared Dropbox folder. Details in week 1.

5 Structure of the course

The course is structured around 8 core topics that will be the focus of lectures and computer practicals over Michaelmas term.

Only readings marked with (*) are compulsory, while other references indicate additional materials for those students that feel comfortable with the concepts discussed in class and want to explore the topics further. These will not be included in the problem sets, nor in the final exam.

- Topic 1: Types of data and descriptive statistics
 - *Feinstein and Thomas, Chapters 1 and 2
 - Angrist and Pischke, Chapters 1 and 2
- Topic 2: Correlation
 - *Feinstein and Thomas, Chapter 3
- Topic 3: Dealing with samples
 - *Feinstein and Thomas, Chapter 5
- Topic 4: Hypothesis testing
 - *Feinstein and Thomas, Chapters 6 and 7
- Topic 5: Simple linear regression
 - *Feinstein and Thomas, Chapter 4
 - Wooldridge, Chapter 2

- Topic 6: Multiple linear regression I
*Feinstein and Thomas, Chapters 8 and 9
Wooldridge, Chapters 3 and 4
- Topic 7: Multiple linear regression II
*Feinstein and Thomas, Chapters 10 and 11
Wooldridge, Chapters 6 and 8
Angrist and Pischke, Chapter 3
- Topic 8: Binary outcome variables and time-series, an introduction
*Feinstein and Thomas, Chapters 12 and 13
Wooldridge, Chapters 7, 10, 11 and 12

* Compulsory readings

6 University policies and procedures

Information on History Prelims at the University of Oxford is available on Weblearn. Make sure you are aware of this site. It provides you with the First Year Handbook for the Preliminary Examination in History issued by the Board of the Faculty of History. It also contains important information, including:

- an overview of what is required during your prelim year
- examination regulations (the rules)
- access to past exam papers
- marking criteria
- IT resources
- information on an exchange programme, libraries, museums etc.
- guidelines for students with disabilities
- guidance on plagiarism
- grievance procedures and feedback

If you are in doubt about your understanding of any of the rules or regulations (especially plagiarism), ask a member of staff for guidance or clarification. You are expected to abide by these rules and academic practices in all your papers, so make sure you understand what your responsibilities and rights are.