Module Name: Introduction to Quantitative Research Methods
Module Code: PUBLG100A/B
Teaching: 2 hours of lecture, 1 hour of seminar
(Note: Seminars are not required for this course, but strongly recommended.)
Credits: 15
Assessment: Take home exam
Essay Deadline: 19 January 2015
Lecturers: Dr James Melton and Dr. Lucas Leemann
Office Hours: JM: Wednesday, 10.00-11.30 and by appt.
LL: ?? and by appt.

USEFUL LINKS
Lecture and Seminar Times:
Online Timetable at www.ucl.ac.uk/timetable

Extenuating Circumstances
http://www.ucl.ac.uk/spp/intranet/pg/assessment/extenuating-circumstances

Penalties for Late Submission and Overlength Essays
http://www.ucl.ac.uk/spp/intranet/pg/assessment/essays/#tabs-5

Essay Submission Information
http://www.ucl.ac.uk/spp/intranet/pg/assessment/essays/#tabs-1

Examinations
http://www.ucl.ac.uk/spp/intranet/pg/assessment/examinations

Plagiarism and TurnItIn
http://www.ucl.ac.uk/spp/intranet/pg/assessment/plagiarism-turnitin
PUBLG100 – Introduction to Quantitative Research Methods
Fall 2014

Course Tutors
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Teaching Assistants
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Introduction
This module (or the Advanced Quantitative Methods module) is required of all students pursuing an MSc from the School of Public Policy, including degrees in Democracy and Democratization, European Public Policy, Global Governance and Ethics, International Public Policy, Public Policy, and Security Studies. The course is designed with the goal of introducing students to different quantitative methodologies used by social scientists and policy researchers. By the end of the course, students should be well-equipped to understand the quantitative methodologies employed in political, social, and economic research; to perform data analysis and interpret output; to evaluate the use of these methods in answering questions of a political nature; and to use these methodologies (if appropriate) in their dissertation research and in subsequent careers.

Course Format
This course will be taught using a combination of lectures and lab sessions. Lectures are two-hours in length and are required of all students. The lectures are designed to introduce students to the topics outlined in the course syllabus and to detail topics covered in the assigned readings. Lab sessions are designed to provide students the opportunity to get ‘hands on’ experience with the material and the statistical software—Stata—and are capped at 15 students (depending on class size, etc.). Because the material in the course builds on previous weeks, students should plan on attending seminars from week 1 and attend consistently. Although seminar attendance is not required, it is strongly recommended, and students should be made aware that the seminars address the skills that will be examined on the take-home exam.

Course Meeting Information
The course is delivered in both lecture and seminar format. For the most up to date information, see the online timetable at: www.ucl.ac.uk/timetable
Lectures
There are two lectures for this module, one section taught by Dr Leemann (PUBLG100A) and the other by Dr Melton (PUBLG100B). The material presented in each of the sections is exactly the same. However, your work will be assessed by the tutor to which you have been assigned. Students MUST attend the lecture slots they have been assigned.

PUBLG100A (Dr Leemann): Gordon Street 25 – E28 Harrie Massey Lecture Theatre
PUBLG100B (Dr Melton): Birbeck Clore Management Centre – B01

Seminars
Seminars are optional for this module but HIGHLY recommended. Seminars will primarily be devoted to understanding how to estimate the statistics we discuss in class using Stata. Note that you will be required to use Stata to complete your final exam.

Unlike other modules in the Department of Political Science, you are able to choose your own seminars for this module. To attend, you will need to sign up for one of the slots below each week.

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<thead>
<tr>
<th>Seminar</th>
<th>Day</th>
<th>Time</th>
<th>Location</th>
<th>Tutor</th>
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<tr>
<td>1</td>
<td>Monday</td>
<td>13:00-14:00</td>
<td>Archaeology 501 – Public Cluster</td>
<td>Sajuria</td>
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<td>13:00-14:00</td>
<td>Bedford Way 316 – Public Cluster</td>
<td>Collignon/Simon</td>
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<td>Monday</td>
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<td>Chadwick 2.23 – Public Cluster</td>
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<td>7</td>
<td>Monday</td>
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<td>DMS Watson G15 – Public Cluster</td>
<td>Melton</td>
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<td>12</td>
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<td>9:00-10:00</td>
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Course Evaluation
Students must pass this course to successfully complete the MSc degree. The course has one marked component, a take-home examination, worth 100% of the course mark. The exam will require students to respond to a number of questions using datasets from the course; in other words, you will have to produce statistical output using Stata and submit the output and your responses to the questions posed. The exam will be posted on Moodle on 1 December 2014 and the exam is due 19 January 2015. Please follow normal departmental procedures in submitting your exam. Students must achieve a minimum of 50 on the exam to pass the module.
Optional Assignments
At the end of each lecture section, an optional assignment will be available to students. These assignments DO NOT count toward the course mark! They are optional and intended to provide students formative feedback on the material presented. The optional assignments are available via the course’s Moodle webpage. Assignments are due at the end of lecture one week after they are distributed. For example, the assignment distributed after the first lecture is due at the end of the second lecture. Assignments received after the due date will not be reviewed. The course tutors/TAs will provide feedback and comments.

Group work is encouraged for optional assignments but please keep in mind that group work will not be permitted on the final exam. Only one submission is necessary for optional assignments completed by a group, just be sure that it is clear to whom the marked assignment should be returned.

Course Resources

Readings
Students are required to obtain the following book for the module.


Kellstedt & Whitten is the main text for the course. The majority of the assigned reading will be given from this text. Several copies of the Kellstedt & Whitten book are available in the UCL library. However, given the large class size, we strongly recommend that students purchase personal copies of these texts. In addition to the main texts for the course, additional reading materials are required for some weeks. These are available online through the course’s electronic reading list (http://readinglists.ucl.ac.uk/modules/publg100.html). It is expected that students will have read ALL the required reading prior to coming to lecture and seminar.

Items designated as ‘Further Reading’ are not required reading for the course. However, students often find these useful in the development of their dissertation proposals, or in providing some additional explanations on particularly difficult or relevant topics.

Moodle
We will make extensive use of UCL’s virtual learning platform, Moodle. Students will be automatically enrolled in Moodle for the course to which they have been assigned, either: 100A Dr Leemann (https://moodle.ucl.ac.uk/course/view.php?id=14165) or 100B Dr Melton (https://moodle.ucl.ac.uk/course/view.php?id=19248)

A separate page has been set up for registering for weekly seminars. Please note that seminars are capped and that you must sign up each week to attend seminar: registering once will not ensure your spot for the remainder of the term. We will open the register after lecture on Monday for the following week’s seminars. To register, click here:
https://moodle.ucl.ac.uk/course/view.php?id=19797 (Note: this is a separate page from your main course page). If you have any questions please contact your tutor or one of the TAs.

**Blikbook**

We are using a service called Blikbook to manage communications for this course. Blikbook can be accessed via a link in the “Discussion Forums” section of the course’s Moodle page. This is a much more efficient mode of communication than e-mail because it allows you to answer each other’s questions, which will be much faster than waiting for a response from us, and for the entire class to see our responses, ensuring that we do not answer the same question multiple times over e-mail. Note that we expect you to use Blikbook for both student-to-student and student-to-tutor communication, meaning that you should be attempting to answer each other’s questions. To encourage student-to-student communication, we will only be answering questions on Blikbook twice per week, on Tuesdays and Fridays.

Note that we will *not* be answering substantive questions over e-mail. If you ask us a substantive question via e-mail, we will simply ask you to post it on Blikbook. All questions that are of administrative or technical nature should be addressed to us before or after lecture or during our office hours.

**Socrative**

We will be using the student response system called Socrative to ask you questions during lecture. Since this is a web-based system, we ask you to bring either a laptop, tablet or smart phone to class with you. Please make sure you are logged in at the start of lecture, so when the time comes, you are ready to answer our questions.

**Socrative Login Procedure:**
2. Click the “Student Login” button
3. Enter the room name in the box and click “Join Room”. The room name is simply the course code of the lecture that you are in – “PUBLG100A” for Dr. Leemann or “PUBLG100B” for Dr. Melton

**Stata**

Every quantitative social scientist needs to know how to operate at least one piece of statistical software. In this course, we will be teaching you how to use Stata. Stata is statistical software that allows one to manipulate data and estimate a wide variety of statistics. It is primarily used by economists and political scientists. In addition to the exercises that you will be asked to complete in seminar, you may also find the following tutorials helpful:

- [http://data.princeton.edu/stata/](http://data.princeton.edu/stata/)
- [http://www.lse.ac.uk/methodology/tutorials/Stata/home.aspx](http://www.lse.ac.uk/methodology/tutorials/Stata/home.aspx)
- [http://www.ats.ucla.edu/stat/stata/modules/](http://www.ats.ucla.edu/stat/stata/modules/)
There several ways to access Stata. The most expensive option is to buy the software. However, since Stata is available to all UCL students, this is unnecessary. Instead, you should access the software via either a UCL computer lab, if on-campus, or Desktop@UCL, of off-campus. More information about Desktop@UCL is available at http://www.ucl.ac.uk/isd/common/ucldesktop/anywhere-user-guide. If you are having trouble accessing Desktop@UCL or Stata, please contact ISD at servicedesk@ucl.ac.uk.
Course Outline

Week 1 – Introduction to Quantitative Analysis
Introduction to Quantitative Methodology; Causality; Research Questions; Hypotheses

Required Reading
- Kellstedt and Whitten (chs 1-4)
- One of the online Stata tutorials

Further Reading
- Baum, Christopher F. 2006. An Introduction to Modern Econometrics Using Stata. College Station, Texas: Stata Press.

Week 2 – Descriptive Statistics
Levels of Data; Measures of Central Tendency; Measures of Variability

Required Reading
- Kellstedt and Whitten (ch 5)
- One of the online Stata tutorials

Further Reading
Week 3 – Probability and the Normal Curve
Introduction to Probability; Probability Distributions; the Normal Curve; Sampling Distributions; Sampling Distribution of Means

Required Reading
- Kellstedt and Whitten (ch 6)

Further Reading

Week 4 – Statistical Inference
Point and Interval Estimation; Confidence Intervals of the Mean; Confidence Intervals for Proportions; Significance Tests; Types of Errors; P-values

Required Reading
- Kellstedt and Whitten (ch 7.1-7.3)

Further Reading

Week 5 – Measures of Difference and Association
Contingency tables and Chi-squared tests; t-tests; Pearson’s r

Required Reading
- Kellstedt and Whitten (ch 7.4-7.5)

Further Reading
Week 6 – Introduction to Linear Regression
Coefficient estimates; standard error; model fit

Required Reading
- Kellstedt and Whitten (ch 8-9)

Further Reading

Week 7 – Testing Complex Hypotheses with Linear Regression
Qualitative data; interaction terms; F-tests; outliers

Required Reading
- Kellstedt and Whitten (ch 10.1-10.4)

Further Reading

Week 8 – Regression Assumptions
Assumptions of linear regression; endogeneity; multicollinearity; heteroskedasticity

Required Reading
- Kellstedt and Whitten (ch 10.5)
- Another reading here.

Further Reading
**Week 9 – Introduction to Probit and Logit**
Introduction to Discrete and Limited Dependent Variables; Maximum Likelihood Estimation

*Required Reading*
- Kellstedt and Whitten (ch 11.1-11.2)
- Another reading here.

*Further Reading*

**Week 10 – Probit and Logit Models in Practice**
Interpretation of Probit and Logit Models; Model Quality Measures; Extensions

*Required Reading*
- Another reading here.

*Further Reading*
- Kellstedt and Whitten (ch 12)