# Quantitative Methods of International Relations

**Syllabus**
Module "Methods of International Relations I"
University of Mannheim, Spring 2019

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| *Course Details*: | Fridays, 15.30 – 17.00<br>Room C -108 in A5, 6 |
| *Instructor*: | David Weyrauch<br>dweyrauc@mail.uni-mannheim.de |
| *Office*: | A 351 in A 5, 6 |
| *Office Hours*: | Fridays, 14.00 – 15.00 and by appointment (please register via e-mail) |

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## 1 Course Description

This course introduces undergraduate students to quantitative methods used for research in the field of international relations and European integration. The goal is to equip students with the skills necessary to write a successful BA thesis and to train them to do so using the statistical package STATA. The course emphasizes data management, descriptive statistics, data visualization, techniques for dealing with continuous, binary and count dependent variables, time-series cross-sectional data as well as regression diagnostics. A good working knowledge of statistics is a prerequisite for successful participation in the class.

## 2 Course Objectives

Based on the course contents, students will be able to identify the correct statistical model for different types of data and research questions and to justify their decision. They are able to correctly specify such a model as well as test the model's assumptions and implement this in STATA. Lastly, students are able to describe and visualize the results as well as evaluate and interpret them in light of the research question and transfer the acquired skills to their own research interests after this course.

## 3 Organizational information

### 3.1 General Information

The class is taught in English language. You will be awarded six ECTS credits for the successful completion of three assignments. Even though attendance in lectures and seminars is not mandatory anymore, I strongly advise you to regularly attend the course and participate in class since we will

discuss and practice the material that is necessary to successfully complete the assignments. Note that I will not re-explain course contents in my office hour if you have been absent from class at an above-average rate without cause.

### 3.2 Course Requirements

**Assigned Literature:** I ask you to read the assigned literature. The reading(s) listed as compulsory in the course outline below are mandatory. All reading materials are provided through ILIAS in the respective session folders.

**Assignments:** During the semester, students will receive three assignments, which they must complete on their own. These assignments deal with topics covered in our sessions and will be graded. You will be given two weeks time to solve each assignment. The deadlines for the submission of the respective assignments are: **Friday, March 29, 2019 at 11am for Assignment I**; **Monday, April 29, 2019 at 11am for Assignment II** and **Friday, May 24, 2019 at 11am for Assignment III**. You have to submit both an electronic copy as well as a hard copy of your completed assignment. Submission of the electronic copy (do-file and pdf-upload) takes place via upload on ILIAS. Make sure that your entire do-file runs without error messages, otherwise points will be deducted. Additionally, please hand in the hard copy (printed do-file and pdf) by depositing it in the mailbox by the deadline. You can find the mailbox in the C part of A5 (close to the entrance facing the old observatory). The number of the mailbox is 46261, it also indicates the name of our course. Failure to upload the (complete) electronic copy on time will result in zero points for the respective assignment; failure to deposit the (complete) hard copy on time will result in a one grade point deduction of your final grade each time.

**Grades:** The grade is based on the sum of points obtained in the three assignments. Students receive up to two points for their solution to each problem within the assignments. One point is awarded if the solution provided by the student has minor mistakes. The student receives zero points for a single problem if there are major flaws. Half points are possible.
Note that students who receive less than 50% of the total number of achievable points fail the course and will not be awarded six ECTS credits. Students who failed the course will have to retake this (or another suitable) course in the next semester.

### 3.3 Course Materials and Preparation

**Laptop:** Since the course takes place in the computer lab where STATA is installed on every computer, you do not need to bring your own laptop. If you wish to work with your own laptop and own a copy of STATA, feel free to bring it to class. An advantage of this approach is that you can set up your own computer and learn how to use it for empirical analyses.

**STATA:** STATA is a software package for statistical computing and data analysis. We will make use of STATA extensively in our class. If you decide to use your own laptop for class, please make sure to have a version of STATA installed by the second session.

### 3.4 Internet Resources

There are two excellent internet sources to get started with STATA.

- Stata Tutorial by Germán Rodríguez (`http://data.princeton.edu/stata/`)

- UCLA Institute for Digital Research and Education (`https://stats.idre.ucla.edu/stata/`)

In addition, there is a great probability course taught by Joe Blitzstein (Harvard) that is available free of cost on iTunes (`https://itunes.apple.com/us/course/statistics-110-probability/id502492375`). We would recommend you to listen to all or selected lectures if you need to brush up on your statistics/probability knowledge. Several hundred exercises with detailed solutions are also provided.

# 4 Course Outline

### Session 1 (15.02.2019): Introduction

*No readings*

### Session 2 (22.02.2019): Data Preparation

**Compulsory literature:**

- Kohler, Ulrich/Frauke Kreuter. 2009. *Data Analysis Using Stata.* 2nd Edition. College Station: Stata Press. Chapters 2, 5, 8.6, 10.

**Further literature:**

- Long, J. Scott. 2009. *The Workflow of Data Analysis.* College Station: Stata Press. Chapters 3, 5, 6.
- Pollok, Philip H. 2010. *A Stata Companion to Political Analysis.* 2nd Edition. Thousand Oaks: CQ Press. Chapter 3.

### Session 3 (01.03.2019): Linear Regression I

**Compulsory literature:**

- Kohler, Ulrich/Frauke Kreuter. 2009. *Data Analysis Using Stata.* 2nd Edition. College Station: Stata Press. Chapter 8.1 - 8.2.

**Further literature:**

- Kono, Daniel. 2006. "Optimal Obfuscation: Democracy and Trade Policy Transparency." *American Political Science Review* 100(3): 369-384.
- Pollok, Philip H. 2011. *The Essentials of Political Analysis.* 4th Edition. Thousand Oaks: CQ Press. Chapters 7, 8.

### Session 4 (08.03.2019): Linear Regression II

**Compulsory literature:**

- Brambor, Thomas/William Roberts Clark/Matt Golder. 2006. "Understanding Interaction Models: Improving Empirical Analyses." *Political Analysis* 14(1): 63-82.

**Further literature:**

- Kono, Daniel. 2006. "Optimal Obfuscation: Democracy and Trade Policy Transparency." *American Political Science Review* 100(3): 369-384.

**Session 5 (15.03.2019): Linear Regression III**

**Compulsory literature:**

– Kohler, Ulrich/Frauke Kreuter. 2009. *Data Analysis Using Stata.* 2nd Edition. College Station: Stata Press. Chapter 8.3 - 8.6.

**Further literature:**

– Kono, Daniel. 2006. "Optimal Obfuscation: Democracy and Trade Policy Transparency." *American Political Science Review* 100(3): 369-384.

– Fox, John. 2008. *Applied Regression Analysis and Generalized Linear Models.* 2nd Edition. Thousand Oaks: SAGE Publications. Chapters 11 - 13.

– Wooldridge, Jeffrey M. 2009. *Introductory Econometrics: A Modern Approach.* 4th Edition. Mason: Thomson/South-Western. Chapters 6.4, 8.1 - 8.3.

**Session 6 (22.03.2019): Logistic Regression I**

**Compulsory literature:**

– Kohler, Ulrich/Frauke Kreuter. 2009. *Data Analysis Using Stata.* 2nd Edition. College Station: Stata Press. Chapter 9.

**Further literature:**

– Huth, Paul K./Sarah E. Croco/Benjamin J. Appel. 2013. "Bringing Law to the Table: Legal Claims, Focal Points, and the Settlement of Territorial Disputes Since 1945." *American Journal of Political Science* 57(1): 90-103.

– Long, J. Scott/Jeremy Freese. 2006. *Regression Models for Categorical Dependent Variables Using STATA.* 2nd Edition. College Station: STATA Press. Chapter 4.1 - 4.6.

**Session 7 (29.03.2019): Logistic Regression II**

**Compulsory literature:**

– Kohler, Ulrich/Frauke Kreuter. 2009. *Data Analysis Using Stata.* 2nd Edition. College Station: Stata Press. Chapter 9.

– Long, J. Scott/Jeremy Freese. 2006. *Regression Models for Categorical Dependent Variables Using STATA.* 2nd Edition. College Station: STATA Press. Chapter 4.1 - 4.6.

**Further literature:**

– Huth, Paul K./Sarah E. Croco/Benjamin J. Appel. 2013. "Bringing Law to the Table: Legal Claims, Focal Points, and the Settlement of Territorial Disputes Since 1945." *American Journal of Political Science* 57(1): 90-103.

**Session 8 (05.04.2019): Regression Models for Count Variables**

**Compulsory literature:**

- Long, J. Scott/Jeremy Freese. 2014. *Regression Models for Categorical Dependent Variables Using STATA.* 3rd Edition. College Station: STATA Press. Chapter 9.1 - 9.3.

**Further literature:**

- Long, J. Scott/Jeremy Freese. 2014. *Regression Models for Categorical Dependent Variables Using STATA.* 3rd Edition. College Station: STATA Press. Chapter 9.6 - 9.7.
- Slapin, Jonathan B.,/Sven-Oliver Proksch. 2010. "Look who's talking: Parliamentary debate in the European Union." *European Union Politics* 11(3): 333-357.
- Wilson, Matthew C/James A. Piazza. 2013. "Autocracies and Terrorism: Conditioning Effects of Authoritarian Regime Type on Terrorist Attacs." *American Journal of Political Science* 57(4): 941-955.

**Session 9 (12.04.2019): Time-Series Cross-Sectional Data Analysis I**

**Compulsory literature:**

- Beck, Nathaniel. 2001. "Time-series-cross-section data: What have we learned in the past few years?" *Annual Review of Political Science* 4(1): 271-293.
- PlÃ$\frac{1}{4}$mper, Thomas/Vera E. Troeger/Philip Manow. 2005. "Panel data analysis in comparative politics: Linking method to theory." *European Journal of Political Research* 44(2): 327-354.

**Further literature:**

- Baum, Christopher F. 2006. *An Introduction to Modern Econometrics using Stata.* Colllege Station: Stata Press. Chapter 9.
- Beck, Nathaniel, and Jonathan N. Katz. 1995. "What to do (and not to do) with time-series cross-section data." *American Political Science Review* 89(3): 634-647.
- Drukker, David M. 2003. "Testing for serial correlation in linear panel-data models." *Stata Journal* 3(2): 168-177.
- Kohler, Ulrich/Frauke Kreuter. 2009. *Data Analysis Using Stata.* 2nd Edition. College Station: Stata Press. Chapter 8.6.2.
- Wooldridge, Jeffrey M. 2002. *Econometric Analysis of Cross Section and Panel Data.* Cambridge, Massachussetts/London: The MIT Press. Chapter 10.

**Session 10 (03.05.2019): Time-Series Cross-Sectional Data Analysis II**

**Compulsory literature:**

- Treiman, Donald J. 2009. *Quantitative Data Analysis. Doing Social Research to Test Ideas.* San Francisco: Wiley. Chapter 15.

**Further literature:**

- Baum, Christopher F. 2006. *An Introduction to Modern Econometrics using Stata.* Colllege Station: Stata Press. Chapter 9.
- Beck, Nathaniel. 2001. "Time-series-cross-section data: What have we learned in the past few years?." *Annual Review of Political Science* 4(1): 271-293.
- Drukker, David M. 2003. "Testing for serial correlation in linear panel-data models." *Stata Journal* 3(2): 168-177.
- Keele, Luke/Nathan J. Kelly. 2005. "Dynamic models for dynamic theories: The ins and outs of lagged dependent variables." *Political Analysis* 14(2): 186-205.
- Kohler, Ulrich/Frauke Kreuter. 2009. *Data Analysis Using Stata.* 2nd Edition. College Station: Stata Press. Chapter 8.6.2.
- PlÃ$\frac{1}{4}$mper, Thomas/Vera E. Troeger/Philip Manow. 2005. "Panel data analysis in comparative politics: Linking method to theory." *European Journal of Political Research* 44(2): 327-354.
- STATA `xtreg`-documentation. 2018. `https://www.stata.com/manuals13/xtxtreg.pdf`
- Wooldridge, Jeffrey M. 2002. *Econometric Analysis of Cross Section and Panel Data.* Cambridge, Massachussetts/London: The MIT Press. Chapter 10.

**Session 11 (10.05.2019): Time-Series Cross-Sectional Data Analysis III**

**Compulsory literature:**

- Beck, Nathaniel/Jonathan N. Katz/Richard Tucker. 1998. "Taking Time Seriously: Time-Series-Cross-Section Analysis with a Binary Dependent Variable." *American Journal of Political Science* 42(4): 1260-1288.
- Treiman, Donald J. 2009. *Quantitative Data Analysis. Doing Social Research to Test Ideas.* San Francisco: Wiley. Chapter 15.

**Further literature:**

- Beck, Nathaniel. 2001. "Time-series-cross-section data: What have we learned in the past few years?." *Annual Review of Political Science* 4(1): 271-293.
- Greene, William H. 2012. *Econometric Analysis.* 7th Edition. Boston: Pearson. Chapter 18.

**Session 12 (17.05.2019): Datathon**

- Repetition and application of selected topics from previous sessions

**Session 13 (24.05.2019): Datathon and Wrap-Up**

- Repetition and application of selected topics from previous sessions
- Discussion of remaining questions

**Session 14 (31.05.2019): TBA**