Programming, Data Management and Visualization Introduction (Organization, grading, and schedule)

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Purpose of the class

All relevant material can be found on my website: www.alexander-ahammer.com/teaching

- In this class you will learn advanced concepts in programming and data management using Stata.
- Should serve as basis for other econometrics courses in the JKU curriculum, but also for work in the private sector.
- Will prepare you to write an empirical master thesis.
- A specific emphasis is placed on econometrics and big data.

Prerequisites

- Standard KS worth 4 ECTS.
- Ideally taken by first year MSc students, interested BSc and PhD students are highly welcome as well.
- Prior knowledge of econometrics and statistics at the level of *Intermediate Econometrics* is a must. It's also required to know Stata at the same level (≈ *Intermediate Econometrics IK*), although by investing time before the course you may catch up any non-existing knowledge (Stata has a steep learning curve).
 - A 6-month student license for Stata costs \$35.
- Curriculum change For all students who took at least one course in the module '*Methods in Economics*' before October 1, 2018 this course is **not** compulsory. For all others it is.

Topics

- Module A: Elementary concepts and data organization
 - How to set up and organize a project, replicability, data types, memory, importing and exporting data.
- Module B: Programming preliminaries
 - Writing do-files efficiently using lists, logical qualifiers, strings, observation numbering; functions, macros, scalars, and matrices; loops.

• Module C: Data management

 Data validation; reorganizing and combining datasets, useful data management commands.

• Module D: Reporting results

 Store, save, and reuse computed results; automate graphs and tables, producing publication-ready tables with Stata.

• Module E: Data analysis and visualization

Summary statistics, cross-tabulations, graphs, geographical maps.

What this course is not

- A general course in programming
 - We don't have time to cover basics in algorithms, execution and iterative solutions, arrays and matrices, and so on
 - Focus on statistical programming, application-centered
- A course in R or Python
 - All subsequent courses use Stata, so the course is tailored to that
 - Most concepts apply also to other languages
 - Stata is not object-based, but rather procedural or function-based
 - > Stata is user-friendly, that's why we don't need many basics from the point above

Organization and grading

- Weekly lectures, please go through slides before each lecture (try exercises and google concepts that may be unclear to optimally prepare for the course).
- **Bi-weekly problem sets** (5 à 6 points = 30 points)
 - > Typically very short exercises aimed at applying methods we covered in class.
 - Published after our meeting, link in syllabus.
 - Send commented do-file in via mail to me, observe file name and mail subject.
 - Following week we go through the PS in class.
- Take-home exam (30 points)
 - To be solved during semester holidays, based on all the contents we learned during the semester.
 - More information in the syllabus.
- Check the Syllabus (to be updated regularly)

Grading scheme

from	to	Grade
0	30	5 (Nicht Genügend)
31	37	4 (Genügend)
38	45	3 (Befriedigend)
46	53	2 (Gut)
54	60	1 (Sehr Gut)

Literature

- Main material is my slide set.
- Structure is loosely based on Baum (2009)
 - Christopher F. Baum (2009), 'An Introduction to Stata Programming,' first or second edition, Stata Press, College Station, Texas.

• Great Stata tutorials:

 Germán Rodríguez (Princeton) 	[Link]
 Social Science Computer Cooperative (SSCC) 	[Link]
► IDRE (UCLA)	[Link]
Stata blog: Programming an estimation command	[Link]

• Learn to use Google and the built-in Stata help for problem solving!

Contact

- I don't offer regular office hours, please email me if you require an appointment:
 - alexander.ahammer@jku.at