**Syllabus for the course: "Data Analysis <u>2</u>"**

1. Course Title: Data Analysis 2

2. Lecturer: Gábor Békés

3. No. of Credits. 2 credits (ECTS 4 credits)

4. Semester timing of the course: Winter 2016

5. Relationship with other courses: Prerequisite: Statistics for Economic Policy pre-session

6. Course Level : MA / MSc first year

<u>7. Background and overall aim of the course.</u>
The core courses Data Analysis 1- 3 aim at teaching applied research methods by offering a range of simple statistics and econometric techniques. This course will enable students to carry out simple data analysis and evaluate other people's analyses in the context of economic policy. The emphasis is on acquiring simple but credible methods and learning the tools of convincing presentation. We shall also pay attention to details of measurement issues and data structure. In particular, Data Analysis 2 will cover data time series econometrics.

<u>8. The learning outcomes of the course.</u>
By successfully completing the course the students will be able to:
- Successfully formulate research questions that are answerable by empirical analysis;
- Identify, gather and obtain appropriate data for analysis;
- Clean and structure data for analysis;
- Produce meaningful descriptive statistics and informative graphs;
- Carry out simple regression analysis;
- Discuss and interpret results, understand validity and constraints.
- Present empirical analysis and write short reports with data;
- Evaluate the merits of presentations and reports that use data.

<u>9. Textbook(s) /tentative/</u>
Handouts provided by the instructor

<u>10. Software</u>
**R** (as well as Excel and Stata). There will be tutorials.

<u>11. Grading</u>
Quizzes 15%
Assignments 10%
Term Project: 25%
Exam: 50%

12. More detailed presentation of course contents /tentative/

Week   Topic

1.  Time series intro (Stationarity, Trends, Seasonality, Unit roots, Serial correlation, Correlogram: fitting structore on ~: AR, ARMA models)

2.  Time series regression (short and long run effects, policy analysis)

3.  Lags in the LHS variable (Indirect effects, feedback and VAR)

4.  Prediction with time series data

5.  Long panel

6.  Instability (Regime change, model uncertainty)