



STUDY PROGRAMME

ECO; ECO-ELEA; ECO-EPPA; ECO-EEIB

ACADEMIC YEAR

2020 - 2021

SEMESTER

1st

COURSE TITLE

APPLIED ECONOMETRICS I

COURSE PROFESSOR

SUNČICA VUJIĆ

COURSE ASSISTANT

TONY O'CONNOR

NATURE OF COURSE

COMPULSORY

LANGUAGE OF INSTRUCTION

ENGLISH

ECTS CREDITS

4.5

1. **COURSE OBJECTIVE**

The purpose of this course is to introduce you to the theory and practice of estimation and inference in single equation regression models in economics. The emphasis is on the analysis of economic data by means of statistical models. Statistical software (Stata) will be used in handling data.

2. **LEARNING OUTCOMES**

On completion of this course, you should be able to:

- design single equation empirical models of the kind listed in the course contents below;
- estimate single equation models, check the models for mis-specification and undertake statistical inference in their framework;
- undertake empirical economic modelling involving single equations;
- critically evaluate the econometric analyses of such models by others;
- learn to use Stata to these ends.

The learning outcomes for this course tie in with the following learning outcomes for the European Economic Studies programme

- Independently transform a complex problem into research questions, prepare and carry out a research plan, formulate a scientifically-sound position and assess critically their research findings.
- Recognise the importance of empirical foundation for knowledge acquisition and evidence-based policies and use quantitative techniques and other empirical methods to evaluate theoretical knowledge
- Find, select, critically evaluate and use references, data and other sources of



- information within a short amount of time.
- iv) Be autonomous in their preparation and review of materials for the courses as well as in their completion of assignments bearing different requirements in terms of methodology, workload and evaluation of the final work.
 - v) Work together in groups to solve problems, share tasks, prepare assignments, go through case studies and make presentations.

3. COURSE CONTENTS

The following is an indicative list of contents:

CHAPTER 1. Introduction: Economic Questions and Economic Data

CHAPTER 2. Review of Probability (Review at Home)

CHAPTER 3. Review of Statistics (Review at Home)

CHAPTER 4. Linear Regression with One Regressor

CHAPTER 5. Regression with a Single Regressor: Hypothesis Tests and Confidence Intervals

CHAPTER 6. Linear Regression with Multiple Regressors

CHAPTER 7. Hypothesis Tests and Confidence Intervals in Multiple Regression

CHAPTER 8. Nonlinear Regression Functions

CHAPTER 9. Assessing Studies Based on Multiple Regression

CHAPTER 10. Regression with Panel Data

CHAPTER 11. Regression with a Binary Dependent Variable

CHAPTER 12. Instrumental Variables Regression

CHAPTER 13. Experiments and Quasi-Experiments

CHAPTER 14. Prediction with Many Regressors and Big Data

CHAPTER 15. Introduction to Time Series Regression and Forecasting

4. TEACHING METHOD(S)

Lectures (30 hours), assignments, and tutorials when needed.

The lectures will be accompanied by slides which will contain the theory and empirical illustrations required to understand the econometric methods introduced.

Several compulsory assignments (sets of exercises) will have to be handed in. These assignments will further develop the understanding, and facilitate the practice, of the econometric methods. They will involve the use of the Stata statistical package.

5. COURSE MATERIAL

Lecture notes in the form of detailed slides.

Recommended but not required reading: Stock, J. and M. W. Watson (2020). *Introduction to Econometrics*. 4th Edition. Essex: Pearson Education Ltd.



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ECTS CARD

6. EVALUATION

The assignments count for 20% of the final mark.

A mid-term test is organised after Chapter 9. It counts for 30% of the final mark.

A final test is organised at the end of the course. It counts for 50% of the final mark.

For the tests, you are allowed to bring your printed (and annotated) lecture notes, a dictionary and a calculator. No other handwritten, typed, printed or electronic material is permitted. The assignments may not be brought to the test. The material you bring will be checked after the exam.

Rules concerning the second examination session are laid out in the Study Rules.