



STUDY PROGRAMME

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

ACADEMIC YEAR

2019 - 2020

SEMESTER

1st & 2nd

COURSE TITLE

ECONOMETRICS I

COURSE PROFESSOR

ERIC DE SOUZA

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

CHAPTER ONE. Introduction: Econometric Models and Economic Data

CHAPTER TWO. The Simple Linear Regression Model: Estimation

CHAPTER THREE. The Simple Linear Regression Model: Inference

CHAPTER FOUR. The Multiple Linear Regression Model: Estimation

CHAPTER FIVE. The Multiple Linear Regression Model: Inference

CHAPTER SIX. Qualitative Variables

CHAPTER SEVEN. Large Sample Properties or OLS Asymptotics

CHAPTER EIGHT. Mis-Specification Problems and Tests for Mis-specification

CHAPTER NINE. Endogeneity and Instrumental Variable Estimation

CHAPTER TEN. Introduction to Regression Models With Time Series Data

CHAPTER ELEVEN. Regression Models with Time Series: Further Topics

CHAPTER TWELVE. Panel Data Models.

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.

The course is completed by an empirical project which allows the student to put his learning into practice.

5. COURSE MATERIAL

Lecture notes in the form of detailed slides.

Recommended but not required reading: Wooldridge, J., *Introductory Econometrics: A Modern Approach*, 7th edition, 2019

6. EVALUATION

The assignments are not graded, but have to be handed in. They count for 10% of the final mark.

A mid-term test is organised after Chapter 6 (around the end of October). It counts for 30% of the final mark.



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ECTS CARD

A final test is organised at the end of the course. It counts for 40% of the final mark.

An empirical work has to be realised and handed around 21st February 2020. The exact date and time will depend on the global class schedule for the second semester. It counts for 20% of the final mark. Details concerning the project will be provided towards the end of the first semester.

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.