College of Europe
Collège d'Europe
Brugge
Natolin

ECTS CARD

STUDY PROGRAMME	ACADEMIC YEAR	SEMESTER
ECO + ECO-EPPA + EEIB + ECO-ELEA	**2023 - 2024**	**1**

COURSE TITLE

APPLIED ECONOMETRICS

COURSE PROFESSOR	COURSE ASSISTANT
BRAM DE ROCK	**SHANAWAR RANA**

NATURE OF COURSE (COMPULSORY, OPTIONAL)	LANGUAGE OF INSTRUCTION
COMPULSORY	**ENGLISH**

ECTS CREDITS

4,5

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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. The statistical software Stata will be used for handling data.

2. LEARNING OUTCOMES

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

- Understand the (statistical) challenges to learn something from the (economic) data
- Master the working of basic econometric tools: both in theory and in practice
- Be capable of critically interpreting econometric results

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.
- 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.

- Work together in groups to solve problems, share tasks, prepare assignments, go through case studies and make presentations.

3. COURSE CONTENTS

We will study selected topics from the book *Introduction to Econometrics, Global Edition (fourth edition)* written by J. Stock and M. Watson. These topics come from the following chapters

- Chapter 1: Economic questions and data
- Chapter 2 and 3: Review of probability and statistics
- Chapter 4 and 5: Regression with one regressor
- Chapter 6 and 7: Regression with multiple regressors
- Chapter 8: Nonlinear regression
- Chapter 10: Panel data
- Chapter 11: Binary dependent variables
- Chapter 12: Instrumental variables
- Chapter 13: Experiments and Quasi-experiments

4. TEACHING METHOD(S)

There will be lectures (30 hours), several compulsory assignments, an empirical project and (if needed) tutorials.

- The lectures will be based on custom made slides that form the basis for the exam. In the lectures an overview will be given of the relevant econometric tools and how to interpret the corresponding results. Both methods and empirical illustrations will be discussed.
- Several compulsory assignments (sets of exercises on a concrete topic) will have to be handed in. These assignments will allow the students to apply the material of the lectures on concrete data sets. It will also make them work with the statistical software Stata.
- Part of the evaluation will be based on an empirical project with a handwritten report. This will help the students to combine all insights of the course to answer concrete questions. It will also form a preparation for their master thesis.
- The academic assistant will organise on an ad-hoc basis tutorials on Stata or specific topics.

5. COURSE MATERIAL

- Custom made slides on selected topics based on the handbook *Introduction to Econometrics, Global Edition (fourth edition)* written by J. Stock and M. Watson.
- Assignments on specific parts of the course. Solutions to these assignments will be provided.
- The handbook is recommended but not required.

6. EVALUATION

The evaluation is in English and is based on three components: several small assignments (10%), an empirical project (30%) and a written exam (60%).

- The assignments during the semester focus on specific parts of the lectures. They will not be corrected (but solutions will be provided). The grade will be based on the fact if the assignments are timely and decently executed.
- The empirical project has to be handed in after the course (the specific date will be announced). The grade will be based on a report of (maximum) five pages in which the students must demonstrate that the can use the course to answer concrete empirical

questions.

- The written exam is organised at the end of the semester (the specific date will be announced). Students can bring their annotated slides, a dictionary and a calculator. No other material (including the solutions of the assignments) is allowed. The material that students bring will be checked after the exam.
- The grade will be based on the understanding of the studied topics.

Rules concerning the second examination session are laid out in the Study Rules. For students who have to do the resit exam in September/October, the written exam accounts for 100% of the grade.