Econometría II / Econometrics II

Grado en Economía y Negocios Internacionales



UNIVERSIDAD NEBRIJA

SYLLABUS

Course: Econometría II / Econometrics II

Degree: Grado en Economía y Negocios Internacionales

Type: Mandatory

Languages: Spanish and English

Modality: In-Person and Online

Credits: 6

Year: 3rd

Semester: 2nd

Professors and contact information: María Cristina Aguirre, Paula Alba.

1. COMPETENCIES AND LEARNING OUTCOMES

1.1. Competencies

Basic competencies

CB1, CB2, CB3, CB4, CB5

General competencies

CG6, CG8, CG9

Specific competencies

CE9 CE17 CE18

1.2 Learning outcomes

On completion of this course, the student will:

- Know the techniques of data collection, compilation and analysis.
- Organise the information.
- Use quantitative techniques for data analysis and economic variables.

2. CONTENTS

2.1. Prerequisities

None.

2.2. Description

This course extends the methods and techniques employed in Econometrics I. The course focus on causal inference and prediction in a larger variety of data sets. In particular, the course covers: Data with binary dependent variables, Time series data forecasting, Clustering and Cointegration.

2.3. Covered Topics

Unit 1. The logistic regression model
1.1. Binary or dichotomous choice models – binary choice models as regression models.
1.2. Logit model - coding of variables - specification and interpretation – parameter estimation – interpretation of parameters.
1.3. Assesing binary choice models – significance level of the estimated parameters - measures of fit.
1.4. Gretl exercise.

Unit 2. Introduction to time series
2.1. Times series examples
2.2. Gretl exercise

Unit 3. Descriptive analysis of a time series
3.1. Deterministic processes analysis
3.2. Smoothing methods
3.3. Time series decomposition methods
3.4. Gretl exercise

Unit 4. Times series and stochastic processes
4.1. The concept of stochastic process
4.2. Stationary processes
4.3. White noise process
4.4. Estimation of moments in stationary processes
4.5. Gretl exercise

Unit 5. Autoregressive models
5.1. Autoregressive model of order 1
5.2. Autoregressive model of order 2
5.3. General autoregressive model
5.4. Partial autocorrelation function
5.5. Gretl exercise

Unit 6. Regression with non-stationary processes
6.1. Unit root test
6.2. Spurious regression
6.3. Stationarity and Cointegration
6.4. Error correction model
6.5. Gretl exercise

2.4. Individual/ Group assignments

During the course, the following activities may be carried out:

- Group activities using real data from a market or country

2.5. Learning Activities

In-Person Learning	Hours	Attendance %
AF1 Lecture / Theoretical Foundations	45	100%
AF2 Case Studies	9	100%
AF3 Tutorial	9	100%
AF4 Individual / Group Assignments	18	0%
AF5 Online Assignments	6	50%

AF6 Extracurricular Materials	6	0%
AF7 Self Study	57	0%

Online Learning	Hours	Attendance %
AF8 Online Lecture	12	50%
AF9 Online Case Studies	12	0%
AF5 Online Assignments	48	0%
AF6 Extracurricular Materials	18	0%
AF7 Self Study	24	0%
AF10 Online Tutorial	12	100%
AF11 Individual / Group Assignments	24	50%

Methodologies:

In-Person and Online:

MD1	Expository method / Lecture
MD2	Resolution of exercises and problems
MD3	Case method
MD4	Carrying out assignments

3. GRADING RUBRICS

3.1. Grades

Grades are calculated as follows:

0 - 4.9 Fail (SS)

5.0 - 6.9 Pass (AP)

7.0 - 8.9 Notable (NT)

9.0 - 10 Outstanding (SB)

The mention of "Matrícula de Honor" may be awarded to students who have obtained a grade equal to or greater than 9.0.

3.2. Evaluation criteria

Ordinary Session

Modality: In-Person

Evaluation Criteria	Percentage
S1 Attendance and Participation	10%
S2 Individual / Group Assignments	30%
S3 Midterm Exam (On-Site)	10%
S4 Final Exam (On-Site)	50%

Modality: Online

Evaluation Criteria	Percentage
S10 Participation (Forums and Supervised Activities)	10%
S2 Individual / Group Assignments	30%
S4 Final Exam (On-Site)	60%

Extraordinary Session

Modality: In-Person

Evaluation Criteria	Percentage
S2 Individual / Group Assignments	30%
S4 Final Exam (On-Site)	70%

Modality: Online

Evaluation Criteria	Percentage
S2 Individual / Group Assignments	30%
S4 Final Exam (On-Site)	70%

3.3. Restrictions

Minimum Grade

To be able to qualify for inclusion of the above evaluation criteria percentages in the calculation of the final grade, it is necessary to obtain at least a grade of 5.0 in the final test.

Attendance

Student who have missed more than 25% class meetings (unexcused) may be denied the right to take the final exam in the ordinary session.

Writing Standards

Special attention will be given to written assignments, as well as to exams, regarding both presentation and content in terms of grammatical and spelling aspects. Failure to meet the minimum acceptable standards may result in point deduction.

3.4. Plagiarism Warning

Nebrija University will not tolerate plagiarism under any circumstances. Reproducing content from sources other than a student's own work (the internet, books, articles, and peers' work, among others) without proper citation will be considered plagiarism.

If these practices are detected, they will be considered a serious offense, and the sanctions provided for in the Student Regulations may be applied.

4. BIBLIOGRAPHY

Brockwell, P.J., and Davis, R.A. (2002). *Introduction to time series and forecasting*. Springer.

Diebold, F.X. (2007). *Elements of Forecasting* (4th ed.). Thomson South-Western.

Enders, W. (2004). *Applied Econometric Time Series*. Willey.

George Box, E.P., Gwilym, M.J. and Reinsel, G.C. (1994). *Time series analysis. Forecasting and control*. Prentice Hall.

González Rivera, G. (2013). *Forecasting for Economics and Business*. Pearson.

Gnu Regression, Econometrics and Time-series Library (GRETL) (2025). Gretl command Reference and Gretl Functions Reference. https://gretl.sourceforge.net/es.html.

Stock, J.H., and Watson, M.M. (2012). *Introduction to econometrics* (3rd ed.). Pearson.