VNIVERSITAT ID VALÈNCIA

COURSE DATA

Data Subject	
Code	35942
Name	Econometrics
Cycle	Grade
ECTS Credits	4.5
Academic year	2021 - 2022

Study (s)			
Degree	Center	Acad. year	Period
1315 - Degree in Finance and Accounting	Faculty of Economics	2	Second term

Subject-matter		
Degree	Subject-matter	Character
1315 - Degree in Finance and Accounting	13 - Econometrics	Obligatory

Coordination	
Name	Department
BELAIRE FRANCH, JORGE	10 - Economic Analysis

SUMMARY

Econometrics is taught in the second term of the second year of the degree in Finance and Accounting, in the set of subjects that students must study in the Quantitative Methods module. It is compulsory and semester-long, with a total of 4.5 credits (1.5 theoretical and 3 computer / practical).

The objective of the subject is to provide students with the basic knowledge of an academic discipline such as *Econometrics*, which combines concepts from Economic Theory, Mathematics and Statistics and whose purpose will be to provide students with analytical tools and adequate quantitatives to address the analysis of the economic (financial and corporate) reality. The formulation and testing of hypotheses about the functioning of that reality, as well as the making of predictions about its immediate future will be the object of study in this matter.

As a mathematical and statistical discipline, students must use the previous knowledge of calculus and statistics they already have from other subjects. Therefore, it is a training subject with a broad spectrum of theoretical / practical content that is based on the students previous skills and which, with the support of certain computer tools, allows them to obtain a comprehensive view of the quantitative analysis instruments used in the study and prediction of economic and business reality.

The essential content of the subject is mainly focused on the development of the linear regression model, its hypotheses and associated problems. However, the program also includes an essential topic in the field of finance, such as the study of time series, its concept and estimation, albeit as an introduction. Therefore, the program of the subject is divided into three main blocks: linear regression model, non-compliance with the basic hypotheses in said model and introduction to time series.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

No previous requisites. It is recommended to have studied Mathematics I and II and Statistics I of the first year, as well as Statistics II of the second year, in the first semester.

COMPETENCES (RD 1393/2007) // LEARNING OUTCOMES (RD 822/2021)

1315 - Degree in Finance and Accounting

- CM3FYC 1 Conocer el lenguaje estadístico y las capacidades y límites del modelo estadístico para describir una situación financiera y empresarial.

- CM3FYC 2 Conocer y comprender las herramientas estadísticas y econométricas básicas para la presentación, análisis, diagnóstico y prospección de resultados financieros y empresariales.

LEARNING OUTCOMES (RD 1393/2007) // NO CONTENT (RD 822/2021)

The results that the student is expected to acquire in *Econometrics* are the following:

- To complete the knowledge in quantitative methods (*Mathematics I* and *II* and *Statistics I*) provided in the Basic Training.

- To know the basic statistical concepts, techniques and tools associated with the statistical model: the descriptive and exploratory analysis of initial data, the construction of the probabilistic model, the estimation of its parameters by means of a sample, the analysis of the adaptation of the model to the studied reality and the testing of hypotheses.

- To know estimation, diagnosis and contrast procedures of basic regression models and time series.

DESCRIPTION OF CONTENTS

1. BLOCK I. THE LINEAR REGRESSION MODEL

In this first block, the concept of econometrics is introduced and the basic reference of this program is analysed in detail: the linear regression model. In this sense, the basic hypotheses and properties of this model are analysed, as well as all the stages of the analysis from the perspective of econometric modelling, that is, estimation, validation and prediction. Likewise, all the implications derived from it are analysed when we incorporate qualitative information into the model.

Unit 1. Econometric models and economic data.
1.1. What is Econometrics.
1.2. Stages in econometric modelling.
1.3. Economic data.
Unit 2. The linear regression model.
2.1. simple regression model.
2.2. The multiple linear regression model.
2.3. Interpretation of coefficients: the ceteris paribus clause.
2.4. Units of measure and functional forms.
Unit 3. Test hypothesis.
3.1. Properties of the regression model.
3.2. Measures of goodness of fit.
3.3. Hypothesis testing.
3.4. Prediction.
Unit 4. Multiple regression analysis with qualitative information.
4.1. The dummy variables.
4.2. Interpretation of dummy variable coefficients.
4.3. Multiple categories.
4.4. Interaction effects.

2. BLOCK II. EXTENSION OF THE BASIC LINEAR MODEL

This block reviews the problems and solutions of the linear regression model when some of its basic hypotheses are broken.

Unit 5. Violation of the basic hypotheses.
5.1. Multicollinearity and specification errors.
5.2. Normality.
5.3. Heteroskedasticity.
5.4. Autocorrelation.

3. BLOCK III. INTRODUCTION TO TIME SERIES

This block focuses on the prediction framework in contexts of uncertainty, with a type of data specific to financial analysis, such as data from time series. An introductory analysis of its components, as well as their estimation, will be the subject of this topic.

Unit 6. Time Series.
6.1. Introduction to the analysis of time series.
6.2. Non-observable components of a time series.

WORKLOAD

ACTIVITY	Hours	% To be attended
Computer classroom practice	30,00	100
Theory classes	15,00	100
Development of group work	6,00	0
Development of individual work	7,50	0
Study and independent work	10,00	0
Preparation of evaluation activities	12,00	0
Preparing lectures	15,00	0
Preparation of practical classes and problem	8,00	0
Resolution of case studies	9,00	0
TOTAL	112,50	

TEACHING METHODOLOGY

The methodology to teach *Econometrics*, both in the theoretical and practical classes, will be oriented to combine a theoretical vision
of the subject, based on the presentation, development and knowledge of certain basic concepts, with a very practical learning,
 based on the use of empirical instruments that allow the analysis of different real and practical cases under different scenarios.
More precisely, we describe this double typology of the methodology below. In the theoretical sessions the master class design will be combined with the active participation of the student
in class (questions raised by the teacher and / or classmates, resolution of brief questions raised by the teacher, group
discussion of the aspects that have attracted more interest and even small proofs of review). The aim is for the student to
develop both their ability to work independently, their ability to defend ideas and their ability to communicate orally
 and in writing (raising doubts about the topic in public and / or resolving in writing the issues that have been addressed to them). A good follow-up of the theoretical classes will require the student to prepare in advance the readings that serve as the basis

for the theoretical explanation, as well as the main doubts that arise from said readings. In this context, the student will have

a basic bibliography recommended according to the level of the course, as well as certain complementary readings that will allow

him to follow without problems the different contents of the course. Likewise, you will have access to certain additional

material (transparencies, theoretical problems, solved exercises and practical cases) in the virtual classroom of the University. The practical classes will follow diverse strategies, based on the resolution of problems and practical cases (real / fictitious),

using, in its case, for it some computer software. These practical cases will be designed so that the student applies the knowledge

and skills acquired in the theory class to real / fictitious data, so that they complete their training process in the knowledge of an

analytical instrument with its subsequent application to the development of econometric models. It will also be assessed, in this regard,

the active participation of the student in class and the exercises done prior to the classes, as well as the public exhibition of works,

if it were the case and it was deemed appropriate by the teacher to accompany the written format of it with an oral presentation.

EVALUATION

The assessment of student learning in this subject will be made through a triple procedure: a synthesis test at the end

of the semester, which will assess the level of understanding of the subject, both in its content and application, certain practical

activities developed by the student throughout the course, as well as the monitoring of their participation and involvement in the

teaching-learning process. Being more precise we can indicate that said evaluation process will consist of:1.- A written final exam (synthesis test) of a theoretical-practical nature of evaluation of the learning results and its adaptation

to the competences of the subject, with an assessment 70% of the final grade. An approved in said written test, regardless of

the grade obtained in the other evaluation procedures, will be required to pass the subject. 2.- 30% of the remaining grade will be obtained through the delivery of papers, presentations in class, exams, etc.

In the case of exams, these will be a surprise and will include the subject taught up to the time of each test. By its nature,

the activities of the continuous evaluation will have a NON-RECOVERABLE character. The final grade of the course will be the sum of both grades, although as already mentioned before the final exam is mandatory

and overcome it is an essential condition to pass the course. The subject will be considered approved if the student obtains 5 points out

of 10, for which it can combine continuous evaluation and synthesis test. However, in case the synthesis test is not passed,

the score in the minutes will be obtained starting from the scores reached at through the different procedures (synthesis test and continuous evaluation) but without exceeding a maximum of 4.5 points. If you do not choose to perform continuous assessment, the student can only obtain a maximum of 7 points

in the final evaluation,

needing to obtain a 5 out of 7 in said final exam in order to pass the subject. In summary, the distribution of the student's final grade will be as follows. EVALUATION of the different activities developed throughout the course and active student participation Realization of works, theoretical-practical exercises, test type tests, as well as participation in class. 3.0 points.

Written exam at the end of the semester (7.0 points synthesis test). It will be an essential condition for the passing of the subject to pass the written exam.

REFERENCES

Basic

- Wooldridge,J.M.(2010): Introducción a la Econometría.Un enfoque moderno.4ª edición. CENGAGE Learning.

  Wooldridge, J.M. (2006): Introducción a la Econometría. Un enfoque moderno.2ª edición.Thomson-Paraninfo.

  Gujarati,D.N. y Porter, D.C. (2010): Econometría. 5ª edición. McGraw-Hill.

  Stock,J.H y Watson,M.M (2012):Introducción a la Econometría. 3ª edición.Pearson Educación.

  Carter Hill, R.; Griffiths, W. E. & Lim G.C. (2012):Principles of Econometrics. Fourth Edition.John Wiley & Sons. Inc.Asia

  Se añade el siguiente recurso en línea, de libre acceso:

  Enlace del manual en valenciano

  https://www.uv.es/uriel/valenciano/Introducci%C3%B3%20a%20l'econometria%2011-09-2019.pdf

  Enlace del manual en castellano

  https://www.uv.es/uriel/manual/Introducci%C3%B3n%20a%20la%20econometr%C3%ADa%2012-09-2019%20B.pdf

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Additional

- Contreras,D. y Belaire,J. (2000): Introducció a l'Econometria. Educació.Materials 36.Universitat de València.

  Dougherti, C (2011): Introduction to Econometrics. 4th edition. Oxford University Press. Material adicional y complementario del libro puede ser encontrado en la website del curso del profesor

Dougherty en la London School of Economics.

Johnston, J. y Dinardo, J. (2001): Métodos de Econometría. Vicens Vives.

Uriel, E. y Gea, I. (1997): Econometría Aplicada, Editorial AC.

ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

1. Contents

All content initially programmed in the teaching guide for all groups is maintained.

However, each topic will adapt the contents initially contained in the teaching guide given the situation exceptional of this course due to the Covid-19, prevailing the concepts necessary to acquire the competencies of the course.

2. Working load

ACTIVITIES	HOURS
Practices	30.00
Theory classes	15.00
Study	16.75
Preparation of evaluation activities	18.75
Preparation of theory classes	15.00

Preparation of practice classes	8.00
Practical cases resolution	9.00
	112.5

3. Methodology

The modality of classes for students will depend on the social and health conditions and the restrictions established by the competent authorities. In the case of online teaching, classes will be given by videoconference, preferably synchronous, using Blackboard Collaborate, Teams, Skype or the tool that the lecturer considers appropriate to optimize the student's teaching-learning process during the scheduled program sessions, which remain the same days and times.In the case of blended teaching, the students will have to access the classroom in alternate weeks according to the initial of their last name (A-M or L-Z). The classes will be broadcast so that the students will have face-to-face teaching one week, and the next week they will follow the classes in streaming.

4. Evaluation

Given the characteristics of the subject and the situation of exceptionality, the weight of the synthesis test is reassigned, which will be 80% of the total qualification obtained by the student. With regard to the continuous non-recoverable evaluation of the three deliveries contained in the original teaching guide, which represents the remaining 30% of the final grade, this course, and exceptionally, is replaced by a face-to-face or online test, as appropriate, non-recoverable, announced well in advance, which accounts for 20% of the final grade, provided that an approved in the synthesis test is obtained (4 points out of 8 possible).

Synthesis test: In general, the final tests will be performed in person. However it should be noted that this type of review may change, depending on the evolution of the Covid-19 pandemic and the indications of the competent authorities, in which case, we will inform students of the exam modality.

5. References

No changes.