BASIC DETAILS:

Subject:	BUSINESS WORKSHOP II		
Id.:	32270		
Programme:	GRADUADO EN ADMINISTRACIÓN Y DIRECCIÓN DE EMPRESAS (CA)		
Module:	MÓDULO TRANSVERSAL		
Subject type:	OBLIGATORIA		
Year:	3	**Teaching period:**	Primer Cuatrimestre
Credits:	6	**Total hours:**	150
Classroom activities:	58	**Individual study:**	92
Main teaching language:	Inglés	**Secondary teaching language:**	Inglés
Lecturer:	OZCELIK, NADIN (T)	**Email:**	nozcelik@usj.es

PRESENTATION:

The aim of this course is to introduce demand forecasting and sales planning techniques to predict future outcomes using past data, big data and AI. Students will learn qualitative and quantitative models, analyze patterns, and apply forecasting to real-world business decisions, gaining skills to foresee trends, manage risks, and support strategic planning.

PROFESSIONAL COMPETENCES ACQUIRED IN THE SUBJECT:

General programme competences	G01	Ability to analyse and summarise information from several sources.
	G02	Creative and efficient resolution of problems that arise in day-to-day, in order to ensure the highest levels of quality of professional work.
	G03	Ability to organise and plan the work in the context of continuous improvement.
	G04	Use of information and communication technologies.
	G05	Ability to work effectively in interdisciplinary teams, integrating and participating in scientific and professional teamwork, contributing ideas and respecting and valuing the diversity of views of other team members.
	G06	Ability to incorporate ethical principles into the professional culture, giving priority to ethical commitment to customers and society.
	G07	Ability to work in an international context and innovate and adopt new approaches used in other national contexts.
	G09	Oral and written communication in English in academic and professional contexts.
	G10	Ability to apply the acquired knowledge, adapting it to the needs and special features of each situation and person.
	G11	Ability to come up with new ideas (creativity).
	G12	Ability to incorporate scientific research and evidence-based practice as a professional culture, updating knowledge and skills continuously.
	G13	Ability to develop learning strategies throughout life to be able to acquire new knowledge, by developing their own academic and professional path.
	G14	Oral and written communication in native language and in English, according to the needs of their field of study and the demands of their academic and professional environment.
	G15	Ability to establish and meet the most appropriate quality criteria and apply methodologies and work strategies geared towards continuous improvement.
	G16	Ability to assimilate concepts of a social and humanistic nature into a comprehensive university education to enable the development of ethical values such as solidarity, multiculturalism, equality, commitment, respect, diversity, integrity, etc.
Specific programme competences	E01	Understand the specific aspects of the operation, management and control of the different functional areas of the company.
	E02	Know and understand the local, national and international socio-economic context in which the companies operate and be able to interpret its impact on them.

	E03	Ability to apply the acquired knowledge of the functional areas of the company and the socio-economic environment.
	E04	Ability to identify related variables and understand their impact on business organisations.
	E13	Know the decision making processes in terms of policy and business strategy.
	E14	Understand the principles of business ethics and be able to design scenarios in which these principles can be put into business practice.
	E15	Propose, plan and lead business innovation projects that ensure the competitiveness of the company.
Learning outcomes	R01	Knowledge and familiarity with the problems
	R02	Development of analytical skills
	R03	Improved decision-making
	R04	Rationality in decision-making.
	R05	Development of communication and interpersonal skills.

PRE-REQUISITES:

Strong knowledge of Mathematics, Statistics and Econometrics.

SUBJECT PROGRAMME:

Subject contents:

1 - The essentials of forecasting
1.1 - Introductory issues
1.2 - Key Concepts
1.3 - Basic steps
1.4 - Sources of problems
1.5 - Types of forecasts
2 - Business Forecasting
2.1 - Types and sources of data
2.2 - Introduction to graphics analysis
2.3 - Components
2.4 - Autocorrelation
2.5 - Forecast Error
3 - Time Series
3.1 - Time-series decomposition
3.2 - Non-parametric forecasting
3.3 - Quarterly forecasts
4 - Forecasting with linear regressions (structural models)
4.1 - Forecasting with simple regression
4.2 - Forecasting with multiple regression
5 - Forecasting with ARIMA models
5.1 - Introduction to the Box-Jenkins Models (non-structural models)
5.2 - Forecasting with Autoregressive Models (AR)
5.3 - Forecasting with Moving average (MA)
5.4 - Forecasting with Autoregressive-Moving Average (ARMA) models
5.5 - Forecasting seasonal time series
6 - Data mining
6.1 - Data Mining and techniques
7 - Logit model
7.1 - Logit model

Subject planning could be modified due unforeseen circumstances (group performance, availability of resources,

changes to academic calendar etc.) and should not, therefore, be considered to be definitive.

TEACHING AND LEARNING METHODOLOGIES AND ACTIVITIES:

Teaching and learning methodologies and activities applied:

Many class activities are carried out in pairs and groups through problem solving exercises with (or without) software, presentations, debates, project preparation, etc. Students should check the PDU every week. During theoretical classes, where the lecturer explains concepts orally with technological support, students are also expected to participate with questions. After theoretical classes, the student must study individually with the exercises and tasks to apply. During these sessions, students can ask questions, clarify concepts and ask for additional bibliography.The main methodologies used in this course will be:

- **Theoretical classes:** Main concepts are presented. Besides, there might be slides with questions and/ or problems which are solved during the class discussions.

- **Practical exercises:** Those exercises aim to reinforce the knowledge. Active participation of students is encouraged.

- **Group assignment:** Students carry out group assignment using GRETL. Late submissions of assignments won't be accepted.

- **Quiz and Written tests:** To ensure understanding of business forecasting essentials and methods, written tests are conducted on each topic.

- **Independent study:** Students are expected to complete all independent study tasks and devote time to reviewing concepts and exercises.

- **Tutorial hours:** Students are encouraged to attend tutorial sessions, since, tutorial sessions provide an opportunity to students to address their questions and ask for additional bibliography, etc. It is worth mentioning that students must contact with the lecturer via email and ask for an appointment beforehand.

IMPORTANT: Tutorials are sessions intended to address specific questions or doubts, not to provide private lessons or to explain the entire topic from the beginning.

Student work load:

Teaching mode	Teaching methods	Estimated hours
Classroom activities	Master classes	20
	Other theory activities	6
	Practical exercises	10
	Practical work, exercises, problem-solving etc.	8
	Debates	2
	Coursework presentations	8
	Assessment activities	4
Individual study	Tutorials	8
	Individual study	42
	Individual coursework preparation	14
	Group cousework preparation	14
	Project work	6
	Research work	2

	Compulsory reading	6
	Total hours:	150

ASSESSMENT SCHEME:

Calculation of final mark:

Otros (Others (Group and individual assignment, quiz, written tests):	100	%
TOTAL	100	%

*Las observaciones específicas sobre el sistema de evaluación serán comunicadas por escrito a los alumnos al inicio de la materia.

BIBLIOGRAPHY AND DOCUMENTATION:

Basic bibliography:

Aaron D. Smith J. Edward Taylor Essentials of Applied Econometrics. Oakland, California : University of California Press. Disponible a través de la plataforma Ebook Collection Ebsco de la Universidad San Jorge

Aslanidis, Nektarios. Applied macroeconometrics. Publicacions Universitat Rovira i Virgili. Disponible a través de la plataforma Ebook de la Universidad San Jorge

BOLVIKEN, Erik. Computation and modelling in Insurance and Finance. Institute and Faculty of Actuaries. Cambridge, 2014

CFA (2012). Level 2. Book 1-Ethical and professional standards and quantitative methods. Kaplan

EVANS, Michael K. Practical business forecasting. Blackwell Publishers, 2003

GUJARATI, Damodar. Econometrics by example. Palgrave Macmillan, 2012

Hanke, J and Wichern, D (2009): Business Forecasting. Pearson Education

Hyndman, R.J and Athanasopoulos, G. (2018) Forecasting: principles and practice, 2nd edition, OTexts: Melbourne, Australia. OTexts.com/ fpp2

MILLS, Terence. Palgrave handbook of econometrics. Volume 2: Applied Econometrics. Palgrave Macmillan, 2011

STOCK, James. Introduction to econometrics. Pearson, 2015

Recommended bibliography:

CAMPBELL, Michael. Statistics at square one. John Wiley. 2009

CHASE, Charles. Demand-Driven Forecasting: A Structured Approach to Forecasting, 2nd Edition. Wiley, 2013

DORNBUSCH, Rudiger. Macroeconomía. McGraw Hill, 2009

ELLET,William. The Case Study Handbook. Harvard Business School Press, 2007

GREENE, William. Análisis econométrico (3a edición). Prentince Hall, 2008

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HAIR, Joseph F. Análisis Multivariante. Pearson, 2007

HAIR, Joseph F. Essentials of Marketing Research. McGraw Hill, 2013

HANKE, John. Business Forecasting. Pearson, 2008.

HITCHNER, James. Financial valuation : applications and models. Wiley, 2011

MAKRIDAKIS, Spyros. Forecasting: Methods and Applications.Wiley, 1998.

PEÑA, Daniel. Fundamentos de estadística. Alianza editorial, 2008

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PÉREZ, César. Econometría básica : aplicaciones con EVIEWS, STATA, SAS y SPSS. Ibergaceta, 2012

PÉREZ, César. Estadística aplicada a través de Excel. Pearson, 2002

PILBEAM, Keith. International Finance. Palgrave Macmillan, 2013

RENDER, B. Quantitative Analysis for Management. Pearson, 2015

SOLLIS, Robert. Empirical Finance for Finance and Banking. Wiley,2012

SPIEGEL, Murray. Probabilidad y estadística. McGraw Hill, 2010

SYDSAETER, Knut. Matemáticas para el análisis económico. Pearson, 2011.

URIEL, Ezequiel. Introducción al análisis de series temporales. Editorial AC, 2005
VARIAN, Hal. Microeconomía intermedia. Antoni Bosch Editorial, 2011.
WILSON,J.Holton. Business Forecasting with ForecastX. McGraw Hill, 2009
WOOLDRIDGE, Jeffrey. Econometric analysis of cross section and panel data. Massachusetts Institute of Technology, 2010.
WOOLDRIDGE, Jeffrey. Introducción a la econometría. Paraninfo, 2008

Recommended websites:

Eurostat (statistical office of the European Union)	epp.eurostat.ec.europa.eu
GRETL	https://gretl.sourceforge.net/
Instituto Aragonés de Estadística	www.aragon.es/Temas/Estadistica
Instituto Nacional de Estadística	www.ine.es
International Monetary Fund	www.imf.org/external/index.htm
Ministerio de Industria, Energia y Turismo	www.minetur.gob.es/
The World Bank	data.worldbank.org
World Trade Organization	www.wto.org/index.htm