Universitat de les Illes Balears

Syllabus

Subject

Name	11494 - Causal Analysis and Prediction
Credits	0.72 in-class (18 hours) 2.28 distance (57 hours) 3 total (75 hours).
Group	Group 1, 2S (Campus Extens)
Period	Second semester
Language	English

Lecturers

Lecturers	Office hours for students					
	Starting time	Finishing time	Day	Start date	End date	Office
Lucia Mangiavacchi - lucia.mangiavacchi@uib.es	12:00	13:00	Wednesday	04/09/2017	01/06/2018	DB220
Jaume Rosselló Nadal jrossello@uib.es	10:00	12:00	Monday	01/09/2017	30/06/2018	DB242 "cita prèvia per e-mail"

Context

This course deals with the causal relationships between variables that can be established in the field of tourism in order to explain relevant variables behavior. The course has an initial introduction topic and two main blocks. In the first one, linear causal models will be introduced including its estimation, validation and interpretation and going further extending them with the possibility to introduce qualitative factor as explanatory variables in it. In the second one, forecasting principles and methodologies are reported and analyzed, with special focus on tourism demand data and seasonality

Requirements

Recommended

There are no formal requirements but it is advisable that the student has previously studied Statistical Inference and regression analysis.

Skills

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Specific

* CE7 – To be able to collect, generate, process and analyse statistical data to support monitoring and evaluation activities..
* CE8- To know and understand the diverse impact that different tourism development alternatives can have on social wellbeing (environment, health, equality of opportunities, etc.)..
* CE10 – To develop skills that facilitate integration into labour markets related to the tourism industry and, especially, to the companies and institutions that monitor and evaluate projects and programmes in the tourism environment..

Generic

* CG2 – To develop an innovative capacity by applying the acquired knowledge to the resolution of problems in new environments related to the tourism sector.
* CG7 – To acquire specialized knowledge about the tourism system to make it possible to face challenges and provide solutions..
* CG8 – To know how to apply information and communications technology (ICT) in the context of tourism projects..

Basic

* You may consult the basic competencies students will have to achieve by the end of the Master's degree at the following address: http://estudis.uib.cat/master/comp_basiques/

Content

Theme content

Topic 1. Explaining causal relationships
1. Correlation and causality. Causal relationships models.
2. Forecasting and simulation.

Topic 2. Linear causal models in tourism
1. Relating two variables.
2. Adding explanatory variables.
3. Validating and interpreting results
4. Tourism applied examples and practice with GRETL

Topic 3. Measuring the effects of qualitative factors in tourism causal models
1. Incorporating qualitative explanatory variables
2. Measuring differences between groups
3. Introducing interactions
4. Tourism applied examples and practice with GRETL

Topic 4. Identifiying time series patterns in tourism demand
1. Seasonality in tourist time series
2. Seasonality measurement
3. Time series decomposition
4. The use of growth taxes and moving averages

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Topic 5. Forecasting

    1. Reference Models

    2. Evaluating prediction adjustment

    3. ARIMA

    4. Forecasting with casual models

Teaching methodology

In-class work activities

Modality	Name	Typ. Grp.	Description	Hours
Theory classes	Theory classes	Large group (G)	To set the theoretical foundations underlying the different units of the course	10
Practical classes	Practical classes	Large group (G)	To set and solve examples and practical exercises related to the contents developed in each unit	6
Assessment	Exam 1	Large group (G)	Exam of Topics 1, 2 and 3	1
Assessment	Exam 2	Large group (G)	Exam of Topics 4 and 5	1

At the beginning of the semester a schedule of the subject will be made available to students through the UIBdigital platform. The schedule shall at least include the dates when the continuing assessment tests will be conducted and the hand-in dates for the assignments. In addition, the lecturer shall inform students as to whether the subject work plan will be carried out through the schedule or through another way included in the Campus Extens platform.

Distance education work activities

Modality	Name	Description	Hours
Individual self-study	Individual self-study / Homework	Different sets of practical exercises will be provided to students to work on different issues related to Causal Analysis and Forecasting in tourism. Students should be able to organize a database, to apply the suitable statistical techniques and to interpret correctly the outputs of the statistical analysis.	40
Group or individual self-study	Individual and/or group study	Students are expected to work on the notes and slides related to the issues explained throughout the course as well as with the different resources included in the bibliography section	17

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Specific risks and protective measures

The learning activities of this course do not entail specific health or safety risks for the students and therefore no special protective measures are needed.

Student learning assessment

Exam 1

Modality	Assessment
Technique	Objective tests **(retrievable)**
Description	Exam of Topics 1, 2 and 3
Assessment criteria	To be able to implement the concepts of the theoretical and practical sessions

Final grade percentage: 40%

Exam 2

Modality	Assessment
Technique	Objective tests **(retrievable)**
Description	Exam of Topics 4 and 5
Assessment criteria	To be able to implement the concepts of the theoretical and practical sessions

Final grade percentage: 40%

Individual self-study / Homework

Modality	Individual self-study
Technique	Papers and projects **(non-retrievable)**
Description	Different sets of practical exercises will be provided to students to work on different issues related to Causal Analysis and Forecasting in tourism. Students should be able to organize a database, to apply the suitable statistical techniques and to interpret correctly the outputs of the statistical analysis.
Assessment criteria	To relate the theoretical concepts with case studies.

Final grade percentage: 20%

Resources, bibliography and additional documentation

Basic bibliography

Ashenfelter, O.; Levine, Ph. B. and Zimmerman , D.J. (2003). *Statistics and Econometrics. Methods and Applications*. Jhon Wiley and Sons, Inc.
Baggio, R. and Klobas, J. (2011) *Quantitative Methods in Tourism. A Handbook*. Channel Wiew Publications.
Kennedy, P. (2003). *A Guide to Econometrics*. The MIT Press, 5th edition.
Maddala, G. S. (2001). *Introduction to Econometrics*. Wiley.
Newbold, P. (2007). *Statistics for business and economics*. Prentice-Hall International.

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Frechtling, D. (2012). *Forecasting Tourism Demand: Methods and Strategies*. Elsevier
Song, H, Witt, S. and Li, G (2009) *The Advanced Econometrics of Tourism Demand*. Routledge.

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