Universidad Rey Juan Carlos

TEACHING GUIDE

QUANTITATIVE METHODS FOR DECISION MAKING IN TOURISM

MÁSTER U. EN INTERNATIONAL TOURISM MANAGEMENT (INGLÉS) (Plan antiguo)

ACADEMIC YEAR 2026-27

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I.-Subject Identification	
Type	OBLIGATORIA
Teaching period	1 course, 1S semester
Nº of credits	3
Language in wich the subject is taught	English

II.-Presentation

The general objective of the course is to teach the student the most appropriate methods and techniques for both obtaining and processing statistical information, so that after their interpretation it is possible to make decisions based on objective reasons. Therefore, the student is introduced to the principles and methods of statistical knowledge, referring to descriptive and inferential processes, as well as multivariate statistical analysis techniques.

From this practical approach, the subject is not conceived as a subject independent of the rest of the degree but as a solid instrument for data collection, analysis and extraction of conclusions that can be applied in the direction and management of tourist companies in order to obtain information on a topic of interest from a dataset. The future director of tourism companies is immersed in a constantly changing socio-economic reality, where certain responses and decision-making are intermingled with uncertain aspects, making it impossible to establish fixed rules of behavior that regulate their relationships. If, in addition, we take into account that empirical evidence cannot be obtained and repeated in any laboratory controlling the starting conditions for decision-making in tourism business management, we come to the use of statistical methods is essential.

Previous knowledge: Basic knowledge of Statistics, Mathematics and Spreadsheets.

III.-Learning outcomes

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CB10 Have the necessary skills to continue studying in a self-directed and autonomous manner.
CB6 Have and understand knowledge that provides a basis or opportunity to be original in the development and/or implementation of ideas, often in a research context.
CB7 Know how to apply the acquired knowledge and problem-solving abilities in new or unfamiliar environments, within broader or multidisciplinary contexts related to the area of study.
CB8 Ability to integrate knowledge and face the complexity of making judgements based on information, whether incomplete or limited, that include considerations on social and ethical responsibilities.
CB9 Know how to communicate conclusions, and provide the knowledge and reasons to support them, to specialised and non-specialised audiences in a clear manner and without ambiguities.
CG01 Acquire advanced training, specialised and multidisciplinary, in the field of tourism.
CG02 Ability to work, as part of a team and autonomously, in a multicultural and multidisciplinary context.
CG04 Ability to apply acquired knowledge and problem-solving abilities to new, broader and multidisciplinary environments.
CG05 Continuous learning, self-directed and autonomous.
CG07 Ability to present and argue results, to both specialised audiences and the general public.
CG09 Ability to use ICTs as a communication tool, access sources of information, data files and documents.
CG11 Ability to organise information and acquire knowledge from different documentary sources.
CG12 Ability to analyse the social reality and make decisions in changing environments such as tourism.
CG14 Promote research and the progress of knowledge in the field of tourism.
CE02 Interpretation of the internal information of a business for effective strategic planning.
CE05 Application of the fundamentals of innovation management, efficiency and competitiveness to the management of tourism organisations (public and private).
CE07 Apply the specialised techniques of economic and financial management to tourism organisations.
CE08 Implementation of management and control systems in tourism organisations.
CE09 Critical analysis of tourism activities and their international context for the identification of threats and development of opportunities.
CE10 Knowledge of planning and regional planning tools as well as of the mechanisms that regulate tourism activities, and development of a planning proposal for a given destination.
CE15 Analysis of new trends, prospectives and the dynamics of international tourism markets.
CE16 Ability to create new tourism products, as well as the strategies to develop and promote them, based on a set of resources and predefined demand sector.
CE20 Simulate the effects on profitability of making price and product decisions in tourism companies.

- Key for degrees not adapted to RD 822/21: **CB** - basic competences, **CG** - generic competences, **CE** - specific competences, **CT** - transversal competences.
- Key for degrees adapted to RD 822/21: **CON** - knowledge, **COM** - competences, **HAB** - skills.

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IV.-Contents

IV.A.-Syllabus

I. Statistical analysis of two variables.

1.1. Two-dimensional distributions.

1.2. The link between statistical variables: simple regression and correlation

II.- Attribute Analysis

2.1. Study of qualitative variables.

2. 2. Regression analysis with qualitative variables: probit and logit models

III.- Statistical Analysis of several variables

3.1. Multiple Regression Analysis

3.2. Analysis of variance and covariance (ANCOVA and ANOVA)

IV.- Multivariate Statistical Methods

4.1. Reduction Dimension Techniques. Principal Components and Factor Analysis

4.2. New trends

IV.B.-Training activities

Type	Title
Prácticas / Resolución de ejercicios	Practices with Statistical Software (Excel, SPSS, R or others)
Other activities	Discussion of practical cases, approach and validation of these cases
Lectures	Elaboration of methodological contents from real cases

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V.-Student workload	
Theoretical sessions	10
Resolution of exercises, problems, case studies, etc.	10
Practical sessions in experimental, technological and clinical laboratories, fieldwork, etc.	0
Tests and/or exams	4
Academic tutorials	6
Related activities: conferences, seminars, etc.	0
Preparation of theoretical sessions and self-study	15
Preparation of practical tasks, exercises, case studies, projects, etc.	15
Preparation for tests and/or exams	15
Total student workload	75

VI.-Methodology and academic programme

Type	Period	Content
Week 1 to Week 16	After the resolution of the practical exercises in the classroom, the implications that may be derived from them will be discussed, as well as the way in which they may affect decision-making.	Theoretical sessions
Week 1 to Week 16	Theoretical-practical classes synchronously in the course schedule. In addition, this part may be reinforced with asynchronous master classes, video tutorials and support of audiovisual resources for a correct learning of the subject.	Practical sessions

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VII.-Assessment methods

The general assessment method is continuous as established in the *Regulation for the Assessment of Learning Outcomes* of Rey Juan Carlos University.
All the assessment systems established in the degree report must be employed, except for those that have a minimum weight of 0%, which can be used by professors in the academic years they consider relevant. Each assessment system may be applied through one or more assessment activities, consistent with the system. No assessment activity can exceed individually 60% of the overall grade for the subject.
The sum of non re-evaluable activities cannot exceed 40% of the overall grade for the subject and, in general, should not have an established minimum grade (except for practical activities in which, strictly speaking, the conditions of the ordinary call cannot be reproduced in the extraordinary call).
Those students who do not manage to pass the subject in the ordinary call, or do not attend this first call, may attend the extraordinary call only for failed re-evaluable assessment activities.
The distribution and characteristics of the assessment activities are described below.

VII.A.-Description and weight of the assessment activities

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Asignatura QMDMT en inglés

Evaluation System	Re-evaluable in extraordinary period	Weighting	Evaluation activity	Minimum grade	Contents	Dates
E02- Tests exercises, and process problems	Yes. It will follow the same format as in the ordinary evaluation period.	35%	Submission of an analysis following the information provided on practical exercises.	5	Topics I, II and III	Deadline to be determined, within the class period.
E05- Written final tests	Yes. It will follow the same format as in the ordinary evaluation period.	50%	Test with open and/or multiple-choice questions.	4	Complete syllabus	Last session of the class period.
E08-Presentation of group work	No	10%	Group presentation of a data analysis.	0	Topics I, II and III	Deadline to be determined, within the class period.
E09- Classroom participation	No	5%	Oral responses to questions posed by the teacher in the classroom.	0	Complete syllabus	Throughout the class period.

Calculation of the final grade

- The **final grade** is calculated as the **weighted average** of the grades from the evaluable tests according to the indicated percentages, provided that the minimum grade indicated for each test has been passed.
- If any of the evaluable tests have not been passed with the minimum grade required, the final grade for the subject will be the highest grade of the evaluable tests not passed.
- If the student has not taken any of the evaluable activities in the call, the final grade for these activities will be 0.
- If the student has not taken any evaluable test, the final grade will be **"Not Presented".**

Convocatoria extraordinaria

In the extraordinary evaluation period, students will only be required to re-evaluate the activities they failed. Therefore, the grades for the activities passed in the ordinary evaluation period and the grades obtained on the re-evaluated activities will be used to calculate the final grade for this extraordinary period. The final grade is calculated as indicated in the previous section.

The re-evaluation of the written tests will take place on the date indicated for the extraordinary evaluation period.

For the re-evaluation of exercises and reports, deadlines will be determined within the evaluation dates of the extraordinary period.

Academic conduct

In the event of **academic fraud** in any evaluation activity, a grade of zero points will be awarded for that activity. If these activities have a minimum grade greater than zero, this will result in failure of the subject in the corresponding evaluation period.

Please also remember that, pursuant to Article 8.g) of the Coexistence Regulations of Universidad Rey Juan Carlos (https://www.urjc.es/images/Universidad/Presentacion/normativa/normativa%20convivencia%20universitaria.pdf), **academic fraud** in any evaluation activity is considered a **very serious fault**. The corresponding sanctions for very serious faults, according to Article 11 of the aforementioned regulations, are temporary expulsion from the University and, where applicable, the loss of tuition fees.

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VII.B. Assessment of students with academic exemption from class attendance

Having Academic Exemption from Class Attendance (DAAC) does not imply that students are automatically exempt from participating in the continuous assessment activities or in the training activities of compulsory attendance as established in the teaching guide. Once the exemption has been granted, students must contact the subject's teaching staff, who will propose the adaptations he/she may consider relevant, as long as they guarantee the acquisition and adequate assessment of the learning goals established. Students must maintain adequate communication with the teaching staff so that they may provide information on the dates for training and assessment activities, if these are not established in the programme and available for students at the time of achieving the exemption.
Subject with possibility of academic exemption: Yes.

VII.C. Review of assessment activities

In accordance with the Regulation for the Assessment of Learning Outcomes of Rey Juan Carlos University.

VII.D.-Students with a disability or special educational needs

In order to guarantee equal opportunities, non-discrimination, universal accessibility and academic success, students with disabilities or especial education needs may request curricular adaptations to follow their studies. These adaptations will be provided by the Unit of Attention to People with Disabilities of Rey Juan Carlos University, in accordance with the regulation which regulates the service for the Attention of People with Disabilities at the University. This Unit will issue a report for curricular adaptations, so that students with disabilities or special education needs must contact the service (at e-mail discapacidad.programa@urjc.es) in order to provide relevant information for different educational alternatives.

VII.E.-Academic behaviour, academic integrity and honesty

Rey Juan Carlos University is fully committed to the highest standards of academic integrity and honesty, so studying at the URJC means assuming and subscribing to the values of integrity and academic honesty set out in the University's Ethical Code. To support this process, the University has Rey Juan Carlos University's Academic Conduct Regulation as well as different tools (anti-plagiarism, supervision...) that offer a collective guarantee for the full development of these essential values.

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VIII.-Teaching resources and materials

Basic bibliography

Härdle, W. and Simar, L. (2019). *Applied Multivariate Statistical Analysis*. New York (NY): Springer. https://www.springer.com/gp/book/9783030260057 and http://www.leg.ufpr.br/lib/exe/fetch.php/wiki:internas:biblioteca:applied_multivariate_statistics.pdf

Newbold, P., Carlson, W., and Thorne, B. (2013). *Statistics for Bussiness and Economics*. London: Pearson (8th edition).

Rumsey, D.J. (2016). *Statistics for Dummies*. Hoboken (NJ): Wiley and Sons (2nd edition)

Smith, S.L.J. (2017). *Practical Tourism Research*. Wallingford: CABI.

Baggio, R. and Klobas, J. (2017). *Quantitative Methods in Tourism: A Handbook*. Bristol: Channel View Publications

Dwyer, L., Gill, A., and Seetaram, N. (eds.) (2012). *Handbook of Research Methods in Tourism: Quantitative and Qualitative Approaches*. Cheltenham (MA): Edward Elgar Publishing.

Hair, J.F., Black, B., Babin, B., and Anderson, R.E. (2014). *Multivariate Data Analysis*. Harlow. Pearson (7th edition).

Consultation bibliography

Ho, R. (2014). *Handbook of Univariate and Multivariate Data Analysis and Interpretation with SPSS*. London: Chapman and Hall (2nd edition).

Salkind, N.J. (2010). *Excel Statistics: A Quick Guide*. London. Sage.

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IX.-Professors

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