

**Applied Statistics**

Code: 103746  
ECTS Credits: 6

Degree	Type	Year	Semester
2502904 Hotel Management	FB	1	2

**Contact**

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**Use of Languages**

Principal working language: spanish (spa)  
Some groups entirely in English: Yes  
Some groups entirely in Catalan: No  
Some groups entirely in Spanish: Yes

**Prerequisites**

There are no prerequisites

**Objectives and Contextualisation**

At the end of the course, students will be able to:

1. Identify what types of variables are appropriate for quantitative analysis in hospitality and tourism.
2. Collect, analyze and represent quantitative and qualitative information in the hotel and tourism industries
3. Consider the importance of collecting, analyzing and representing statistical data considering gender and sustainability perspectives in the sector.
4. Analyze data, populations and samples, as well as the association between variables to assess the economic dimension of the sector.
5. Interpret the results of statistics from a critical perspective, taking into account aspects of gender inequality and sustainability in the sector.
6. Know the main concepts and parameters of descriptive statistics and establish criteria for presenting data at the analytical and graphical level.
7. Identify variables related to hospitality and tourism characterized by randomness and analyze them using basic probabilistic techniques.
8. Implement statistical inference using test and estimation hypotheses.
9. Perform time series analysis and forecast key tourism variables.
10. Establish the advantages and disadvantages of different statistical methods for a given type of observations.
11. Identify key sources of quantitative data in the sector (for example: publications, surveys, databases, etc.) and know how to use them.

**Competences**

- Adapt to changes in technology as they occur.
- Analyse, diagnose and support and take decisions on the organisational structure in the hotel and catering sector.
- Be able to self-evaluate knowledge acquired.

- Demonstrate broad knowledge of the organisation and management of company operations, with emphasis on applied management models and the application of quantitative and qualitative techniques.
- Develop a capacity for independent learning.
- Manage and organise time.
- Manage communication techniques at all levels.
- Work in teams.

## Learning Outcomes

1. Adapt to changes in technology as they occur.
2. Analyse and qualitative and interpret quantitative information regarding management models in the tourism sector.
3. Analyse, data, populations and samples, tables and graphs, and the association between variables, to be able to value the economic dimension of tourism.
4. Be able to self-evaluate knowledge acquired.
5. Collect, present and analyse qualitative and quantitative information referring to the tourist sector.
6. Develop a capacity for independent learning.
7. Identify referential situations in the tourist sector characterised by randomness and analyse them using basic probability tools.
8. Manage and organise time.
9. Manage communication techniques at all levels.
10. Work in teams.

## Content

### Topic 1: Preliminary Concepts

Basic concepts in statistics. Organization and presentation of data: tables and distribution of frequencies. Obtaining data through questionnaires and tabulation. Bar charts, histograms and other graphical representations.

### Topic 2: Measures of central tendency

Concepts of mean, median, mode, and quintiles. Relationship between measures.

### Topic 3: Dispersion and concentration measures

Range, interquartile range, variance, standard deviation, coefficient of variation, Lorenz curve and Gini coefficient, use of the Gini in tourism.

### Topic 4: Measurements of form

Asymmetry and kurtosis measurements. Box plot.

### Topic 5: Series of two variables

Definition and graphic representation. center tendency. Statistical dispersion. covariance

### Topic 6: Statistical dependency

Correlation: concept, procedure and application. Pearson's correlation coefficient. Linear regression fit between two variables. Least squares approach.

### Topic 7: Probability

Operations with probabilities. Assignment of probabilities: random variables and their distributions.

### Topic 8: Time series

Definition and graphic representation. Time series components. Seasonal variation. Seasonal indices. Seasonal adjustment.

## Methodology

The course has three teaching and learning methods:

1. Theoretical sessions

During the classes, the concepts will be explained theoretically and exemplified with practical applications. Some sessions will require student participation to solve problems.

3. practice sessions.

During these sessions, the topics covered in the theoretical sessions will be reviewed through exercises, group projects and individual tests that will be carried out throughout the course. Case studies related to tourism will be presented and variables specific to this industry will be analyzed.

Students will receive guidance from the teacher to carry out a project that involves the use of statistical and computer skills. Specialized software will be used as much as possible during the sessions.

5. Self-learning

The Virtual Campus will be used as a complement and as an alternative means of communication between students and teachers. All relevant course material, examples and exercises will be attached online.

Each student must manage their time to study and solve the proposed problems, in addition to working on a research project using statistical data in the tourism sector that will be presented at the end of the course.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

## Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Master Classes	50	2	1, 3, 2, 6, 9, 8, 7, 5, 4, 10
Type: Supervised			
Tutorships	45	1.8	1, 3, 2, 6, 9, 8, 7, 5, 4, 10
Type: Autonomous			
Practical works	25	1	1, 3, 2, 6, 9, 8, 7, 5, 4, 10
Study	22	0.88	1, 3, 2, 6, 9, 8, 7, 5, 4, 10

## Assessment

Students can choose between continuous assessment or direct access to the final exam (a single final assessment).

### A) CONTINUOUS ASSESSMENT

The continuous assessment system involves the periodic presentation of individual and group work and activities, in addition to the completion of two partial exams to consolidate the concepts and topics developed

in class with a value for each of 20% of the grade. end of the subject. In order to average the results obtained in these two partial exams, the student must achieve a minimum score equal to or greater than 4 points in both exams.

The Virtual Campus will detail the delivery dates of the work and the completion of the two partial exams.

Students who do not pass the subject through continuous evaluation will be evaluated by the single evaluation system, not taking into account the grades obtained previously.

B) SINGLE EVALUATION: Final exam (all subject).

Date and time established, according to the academic calendar, in the Official Program of the Center.

There will be a single type of final exam, without differentiation between students who have passed the continuous assessment and those who have not.

C) RE-ASSESSMENT:

Day and time established, according to the academic calendar, to the Official Program of the Center.

Students who have obtained a grade equal to or greater than 3.5 and less than 5 in the final evaluation may take the re-evaluation.

## Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Midterm exam 1	20%	2	0.08	1, 3, 2, 6, 9, 8, 5, 4, 10
Midterm exam 2	20%	2	0.08	1, 3, 2, 6, 9, 8, 7, 5, 4, 10
Practical exercises - Individual and group	40%	0	0	1, 3, 2, 6, 9, 8, 7, 5, 4
Project and presentation	20%	4	0.16	1, 3, 2, 6, 9, 8, 7, 5, 4, 10

## Bibliography

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- Good, P. I., & Hardin, J. W. (2012). *Common errors in statistics (and how to avoid them)*. [Hoboken, N.J.]: John Wiley.
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- UNWTO (2010) *International Recommendations for Tourism Statistics 2008, Statistics and Tourism Satellite Account*, World Tourism Organization, New York. Available [online](#)

World Tourism Organization (2020), Methodological Notes to the Tourism Statistics Database, 2020 Edition, UNWTO, Madrid, DOI: <https://doi.org/10.18111/9789284421473>. Available [online](#)

Yearbook of Tourism Statistics, Data 2014 - 2018, 2020 Edition. (2020). Available [online](#)

## **Software**

Microsoft Office (Excel, Word, PowerPoint)