

Course Unit	Methods and Research Methodologies		Field of study	Mathematics	
Bachelor in	Tourism		School	School of Public Management, Communication and Tourism	
Academic Year	2022/2023	Year of study	1	Level	1-1
Type	Semestral	Semester	1	ECTS credits	6.0
Code	9254-532-1103-00-22				
Workload (hours)	162	Contact hours	T -	TP 60	PL -
			TC -	S -	E -
			OT -	O -	

T - Lectures; TP - Lectures and problem-solving; PL - Problem-solving, project or laboratory; TC - Fieldwork; S - Seminar; E - Placement; OT - Tutorial; O - Other

Name(s) of lecturer(s) Maria de la Salette Dias Esteves

### Learning outcomes and competences

At the end of the course unit the learner is expected to be able to:

1. Make references.
2. Learn how to make a research design.
3. Apply processes of descriptive statistics in the collection, reduction and classification of tourism data.
4. Compare values of the same tourism variable at different moments in time or space.
5. Establish relationships between variables based on regression models.
6. Understand the existence of time series.
7. Analyze and characterize time series applied to tourism problems.

### Prerequisites

Before the course unit the learner is expected to be able to:  
Use basic knowledge of mathematics.

### Course contents

Methodologies. Univariate analysis of Tourism. Index numbers. Bivariate descriptive statistics applied to Tourism. Analysis of the Tourism situation.

### Course contents (extended version)

1. Methodologies
  - The importance of research in Tourism.
  - Procedures methodological research.
  - Paper writing and presentation methodology.
  - References.
2. Univariate analysis of Tourism
  - Concepts and classifications for tourism statistics.
  - Key Statistics sources in the tourism sector.
  - Use descriptive statistics in tourism research.
  - Graphical representation of Tourism series.
  - Descriptive measures of Tourism series.
  - Preliminary analysis of statistical data in Excel.
3. Index numbers
  - Simple indices.
  - Synthetic Indices.
  - Laspeyres and Paasche indices.
  - Chained vs non-chained calculations.
  - Change base. conciliation.
  - Price index of Tourism.
  - Deflation of the series in Tourism.
  - Rates of change
  - Seasonal behavior of the series in Tourism
4. Bivariate descriptive statistics applied to Tourism
  - Types of regression models.
  - Relationship between variables in Tourism.
  - Fitting a linear relationship using the method of least squares.
  - Covariance, Correlation Coefficient and Coefficient of Determination.
  - Estimation and prediction.
5. Analysis of the Tourism situation
  - Components of the tourism series
  - Study the trend
  - Seasonal movements
  - Expected time series
  - Time Series Analysis and forecasting with Excel.

### Recommended reading

1. Barroso, M. , Sampaio, E. , & Ramos, M. (2010). Exercícios de Estatística Descritiva para as Ciências Sociais (2. ºEd. ). Edições Sílabo. ISBN: 978-972-618-567-3.
2. Fortin, M. (2009). Fundamentos e etapas do processo de Investigação. Lusodidacta. ISBN: 9789898075185.
3. Pedrosa, A. C. & Gama, S. (2016). Introdução Computacional à Probabilidade e Estatística (3. º Ed. ). Porto Editora. ISBN: 9789720019905.
4. Raya, J. (2004). Estadística Aplicada al Turismo. Pearson Prentice Hall.
5. Rocha, H. , Martins, R. , & Pascoal, R. (2021). Estatística Descritiva para as Ciências Sociais. Edições Sílabo. ISBN: 9789895611690.

### Teaching and learning methods

For each theme, work modules with an explanation of the contents and exercises to be resolved with or without oriented solution, will be proposed. The subject's content will be exposed using audiovisual resources and, when possible, with the use of real cases. The classes will be oriented to overcome work difficulties and will be supported by appropriate informatics resources.

**Assessment methods**

1. Distributed evaluation I - (Regular, Student Worker) (Final)
  - Practical Work - 30%
  - Practical Work - 10%
  - Intermediate Written Test - 30%
  - Final Written Exam - 30%
2. Distributed evaluation II - (Regular, Student Worker) (Final)
  - Practical Work - 30%
  - Intermediate Written Test - 35%
  - Final Written Exam - 35%
3. Distributed evaluation III - (Regular, Student Worker) (Final, Supplementary)
  - Practical Work - 10%
  - Practical Work - 30%
  - Final Written Exam - 60%
4. Distributed evaluation IV - (Regular, Student Worker) (Final, Supplementary, Special)
  - Practical Work - 30%
  - Final Written Exam - 70%
5. Evaluation by final exam - (Regular, Student Worker) (Final, Supplementary, Special)
  - Final Written Exam - 100%
6. Incoming and outgoing students - (Regular, Student Worker) (Final, Supplementary, Special)
  - Practical Work - 50%
  - Final Written Exam - 50%

**Language of instruction**

Portuguese, with additional English support for foreign students.

**Electronic validation**

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11-10-2022	11-10-2022	11-10-2022	16-10-2022