1. OVERVIEW

Subject Area	Business Mathematics
Degree	Bachelor's Degree in International Management of Tourism and Leisure Companies
School/Faculty	Social Sciences
Year	First
ECTS	6
Type	Core
Language(s)	English
Delivery Mode	On-campus
Semester	First semester

2. INTRODUCTION

Business Mathematics is a compulsory subject area taught in the first year of International Management of Tourism and Leisure Companies and forms part of the basic training of the students of this degree. Knowledge of this subject area will be necessary to take other subjects areas.

The aim of the subject area is for students to acquire knowledge of the analysis of functions applied to the business and tourism world, the use of differential and integral calculus to solve problems, the understanding of concepts related to matrix analysis and the resolution of systems of equations, as well as the resolution of optimisation problems.

The subject area objectives are summarised as follows:

- The aim is for students to be able to analyse mathematical functions of one and several variables and interpret the results within their context.
- Skills will be developed to apply differential and integral calculus in problem solving.
- Understanding of concepts related to matrix analysis and solving systems of equations will be fostered.
- Other techniques for solving optimisation problems will be developed.

3. SKILLS AND LEARNING OUTCOMES

Basic skills (CB, by their acronym in Spanish):

- CB1: Students have shown their knowledge and understanding of a study area that builds on general secondary school education, and are usually at the level where, with the support of more advanced textbooks, they may also demonstrate awareness of the latest developments in their field of study.

- CB2: Students can apply their knowledge to their work or vocation in a professional manner and possess the skills which are usually evident through the forming and defending of opinions and resolving problems within their study area.
- CB3: Students have the ability to gather and interpret relevant data (usually within their study area) to form opinions which include reflecting on relevant social, scientific or ethical matters.
- CB4: Students can communicate information, ideas, problems and solutions to both expert and non-expert audiences.
- CB5: Students have developed the learning skills necessary to undertake further study in a much more independent manner.

Cross-curricular skills (CT, by their acronym in Spanish)

- CT04: Ability to analyse and synthesise: be able to break down complex problems into manageable blocks; evaluate other options and perspectives to find the ideal solution. Synthesising serves to reduce the complexity and better understand the situation and/or solve problems.
- CT07: Awareness of ethical values: Ability to think and act in line with universal principles based on the value of a person, contributing to their development and involving commitment to certain social values.
- CT11: Planning and time management: Ability to set objectives and choose the right means to fulfil them through efficient use of time and resources.
- CT13: Problem solving: Ability to resolve an unclear or complex issue or situation which has no established solution and requires skill to reach a conclusion.

Specific skills (CE, by their acronym in Spanish):

- CE7: CE7 - Ability to identify and apply innovation, as a fundamental asset for the management and administration of tourist companies: identify trends, lead projects, manage knowledge and quality, encourage internationality, understand and apply social responsibility and environmental concepts etc.

Learning outcomes (RA, by their acronym in Spanish):

- RA1: To carry out analysis of different mathematical functions.
- RA2: To understand concepts related to solving systems of equations.
- RA3: To understand concepts related to matrix analysis.
- RA4: To understand concepts related to solving optimisation problems.
- RA5: To solve optimisation problems.

The following table shows how the skills developed in the subject area match up with the intended learning outcomes:

Skills	Learning outcomes
CB1, CB5, CT4, CT11, CE7	RA1: To carry out analysis of different mathematical functions.
CB1, CB2, CB3, CB4, CB5, CT4, CT11, CT13, CE7	RA2: To understand concepts related to solving systems of equations.
CB1, CB2, CB5, CT11	RA3: To understand concepts related to matrix analysis.

CB1, CB2, CB3, CB4, CT11, CT13	RA4: To understand concepts related to solving optimisation problems.
CB1, CB2, CB3, CB4, CB5, CT4, CT7, CT11, CT13, CE7	RA5: To solve optimisation problems.

4. CONTENTS

The content of the subject area are listed below:

- Functions of a variable.
- Functions of several variables.
- Integral Calculus
- Matrices - systems of linear equations.
- Linear optimisation.

5. TEACHING/LEARNING METHODS

The types of teaching/learning methods are as follows:

- Lectures
- Collaborative learning.

6. LEARNING ACTIVITIES

The types of learning activities, plus the amount of time spent on each activity, are as follows:

On-campus:

Learning activity	Number of hours
Attendance and active participation in class	62.5
Guided work (tutorials, monitoring of learning)	12.5
Independent working	37.5
Group work	37.5
TOTAL	**150**

7. ASSESSMENT

The assessment systems, plus their weighting in the final grade for the subject area, are as follows:

On-campus:

Assessment system	Weighting

Assignments and reports	20%
Presentations	10%
Practical exercises	20%
Knowledge tests	50%

On the Virtual Campus, when you open the subject area, you can see all the details of your assessment tasks, including deadlines and assessment procedures.