1. OVERVIEW

Subject Area	Complex Problem Solving
Degree	Bachelors in Business Analytics
School/Faculty	Social Sciences and Communication
Ac. Year	3º
ECTS	3
Type	Compulsory
Language(s)	English
Delivery Mode	On site
Term	2nd (6th)
Academic Year	2024-25
Coordinating professor	ASAF LEVI

2. PRESENTATION

As part of the third-year course of Complex Problem Solving, students will explore various complex problems that a business will be hard-pressed to solve. In view of the multiple alternatives and the high degree of uncertainty inherent to each of those complex problems, students will study several tools and methodologies to evaluate diverse approaches to finding an adequate solution.

The subject will teach students how to identify a complex problem, identify the main factors that determine its uncertainty, understand potential outcomes, and recognise techniques that they can use to find adequate solutions with a view to mitigating the impact on the business, or helping to enhance positive outcomes.

3. SKILLS AND LEARNING OUTCOMES

Key skills:

- CB4 - Students will be able to present information, ideas, problems and solutions to both specialised and non-specialised audiences
- CB5 - Students will develop the learning capacity required to undertake subsequent study with a high degree of autonomy.

Transversal skills:

- CT5 - Analysis and problem solving: Be able to critically evaluate information, break down complex situations into their constituent parts, recognise patterns, and consider other alternatives, approaches and perspectives to find optimal solutions and efficient negotiations.

Specific skills:

- CE18 - Ability to solve complex problems in situations that require information from different functional departments of the business.
- CE19 - Capacity to make business decisions based on objective data.
- CE25 - Ability to explore new sources of information and the procedures for applying solutions in view of the situation and the sector in question.
- CE26 - Critical spirit and objectivity to challenge data or assumptions based on previous data.
- CE27 - Ability to adapt to an environment characterised by an information overload ("infoxication"), without losing sight of objectives
- CE29 - Ability to ask the right questions in relation to the anticipated objective of knowledge, with a view to formulating and adding suitable "queries" to the data storage system.
- CE31 - Ability to manage uncertainty caused by constant changes to information sources

Learning outcomes:

- LA1. Focus on complex problems correctly
- LA2. Apply analysis and problem solving methodologies.
- LA3. Address a problem based on an approach that considers different points of view.
- LA4. Evaluate the impact and consequences of decisions.

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

Skills	Learning outcomes:

4. CONTENT

Introduction: Complex Problem Solving

Problem Solving Methodologies

Impact of Decision Analysis

Division of the Problem and Analysis of Relationships Among Elements

Scenarios

Preview and Conflict Management

5. TEACHING-LEARNING METHODOLOGIES

The types of teaching-learning methodologies used are indicated below:

- Seminars and lectures
- Challenge-based learning
- Problem resolution

6. LEARNING ACTIVITIES

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

Learning activity	Number of hours
Seminars and lectures	16 h
Asynchronous Seminars and lectures	4 h
Problem resolution	15 h
Oral presentations	10 h
Preparation of reports and written work	10 h
Self-paced autonomous learning	20 h
TOTAL	**75 h**

7. ASSESSMENT

The assessment methods, plus their weighting in the final grade for the course, are as follows:

Assessment system	Weighting
Knowledge tests	40%
Written reports	25%
Oral presentations	10%

When you access the course on the Campus Virtual, you'll find a description of the assessment activities you have to complete, as well as the delivery deadline and assessment procedure for each one.

7.1. Ordinary examination period

To pass the course in the ordinary exam period, students will need a final course grade of at least 5 out of 10 (weighted average).

In any case, they will need to obtain a grade of at least 5.0 in the final examination, otherwise it will not count towards the final grade which includes all grades obtained as part of other projects and assignments.

7.2. Extraordinary examination period

To pass the course in the extraordinary examination period, students will need a final grade of at least 5 out of 10 (weighted average).

In any case, they will need to obtain a grade of at least 4.0 in the final examination, otherwise it will not count towards the final grade which includes all grades obtained as part of other projects and assignments.

Student are required to deliver any assignments not successfully completed in the ordinary examination period, once the teacher has issued the corresponding corrections, or any that were not delivered in the first period.

8. SCHEDULE

The course schedule and deadlines for assignments assessed as part of the course are outlined below:

Assessment activities	Deadline
Assignment 1	Week 3-4
Assignment 2	Week 7-8
Assignment 3	Week 11
Final Case Study	Week 13
Knowledge assessment	Week 17

This schedule may change in line with logistical considerations of activities. Students will be reliably and promptly informed of any changes to this schedule.

9. BIBLIOGRAPHY

- Angeli, C. (2013). Using educational data mining methods to assess field-dependent and field-dependent learners' complex problem solving. Educational Technology Research and Development.
- 61. 10.1007/s11423-013-9298-1.

- Ishikawa, K. (1985). What is total quality control. The Japanese way. Nueva York: Prentice Hall.

- Lahtinen, M.; Sanna, L. & Reijula, K. (2008). Multiprofessional teams resolving indoor-air problems - Emphasis on the psychosocial perspective. SJWEH Supplements. 34.

- Taguchi, C. (1986). Introduction to quality engineering. Productivity Organisation.

- Conn, C., & McLean, R. (2019). Bulletproof Problem Solving: The One Skill that Changes Everything. John Wiley & Sons.

- Hubbard, D. W. (2014). How to measure anything: Finding the value of intangibles in business. John Wiley & Sons.

• Mitchell, M. (2009). Complexity: A guided tour. Oxford university press

10. EDUCATIONAL GUIDANCE AND DIVERSITY UNIT

The Educational Guidance and Diversity Unit supports our students throughout their university life to help them reach their academic goals. It also promotes the inclusion of students with specific educational needs, universal accessibility across the different campuses of the university and equal opportunities.
Students can count on the unit to:

1. Meet their support and follow-up needs through counselling and personalised plans for students who need to improve their academic performance.
2. In terms of diversity, incorporate minor curricular adjustments in terms of methodology and assessment for those students with specific educational needs, with a view to guaranteeing equal opportunities for all students.
3. We offer various extracurricular resources so that students can develop different skills that will facilitate their personal and professional development.
4. Vocational guidance by making tools and counselling available to students who have doubts about their chosen path or believe they have made the wrong degree choice.

Students in need of educational support can write to us at:
orientacioneducativa@universidadeuropea.es

11. ONLINE SURVEYS

Your opinion matters!

Universidad Europea urges you to participate in several surveys which help us to identify the strengths and areas we need to improve in terms of professors, degree programs and the teaching-learning process.

The surveys will be made available in the “surveys” section in Virtual Campus or via e-mail.

We cannot improve without your help!

Thank you very much for your participation.