SUBJECT TEACHING GUIDE

337 - Intelligent Data Analysis and Decision-Taking

Master's Degree in Mathematics and Computing

Academic year 2026 - 2027

1. IDENTIFYING DATA					
Degree	Master's Degree in Mathematics and Computing			Type and Year	Optional. Year 1
Faculty	Faculty of Sciences				
Discipline					
Course unit title and code	337 - Intelligent Data Analysis and Decision-Taking				
Number of ECTS credits allocated	3	Term		Semester based (2)	
Web					
Language of instruction	Spanish	English Friendly	No	Mode of delivery	Face-to-face

Department	DPTO. MATEMATICA APLICADA Y CIENCIAS DE LA COMPUTACION
Name of lecturer	ANGEL COBO ORTEGA
E-mail	angel.cobo@unican.es
Office	E.T.S. de Ingenieros Industriales y de Telecomunicación. Planta: - 4. DESPACHO (S4045)
Other lecturers	DAVID LÁZARO URRUTIA

3.1 LEARNING OUTCOMES
Model decision-making problems by identifying decision variables, objective functions, and potential constraints
Identify the most suitable methodologies for addressing problems according to their specific characteristics
Demonstrate the ability to use scientific software tools to solve decision-making problems.

4. OBJECTIVES
Offer a comprehensive overview of data sources relevant to decision-making, including the management of both structured and unstructured information, as well as organizational decision-making processes
Introduce optimization techniques and decision-support tools for effective decision-making
Provide an introduction to the concepts of business analytics and data-driven decision making

6. COURSE ORGANIZATION	
CONTENTS	
1	Data analysis and decision-making in organizations
2	Classification of decision problems and operations research techniques
3	Tools and methodologies for optimization problems
4	Multicriteria optimization
5	Discrete multicriteria decision problems

7. ASSESSMENT METHODS AND CRITERIA				
Description	Type	Final Eval.	Reassessment	%
Practical exercises conducted in class	Work	No	Yes	60,00
Basic concepts tests	Activity evaluation with Virtual Media	No	No	20,00
Final project	Work	No	Yes	20,00
TOTAL				100,00
Observations				
Observations for part-time students				
Part-time students will be evaluated by means of a series of exercises and a practical project				

8. BIBLIOGRAPHY AND TEACHING MATERIALS
BASIC
Materiales proporcionados por el profesorado a través del curso virtual de la asignatura