

## SUBJECT TEACHING GUIDE

M1715 - Engineering of Model-driven languages

Master's Degree in computing engineering

Academic year 2022-2023

1. IDENTIFYING DATA					
Degree	Master's Degree in computing engineering			Type and Year	Optional. Year 1
Faculty	Faculty of Sciences				
Discipline	Optional Subjects				
Course unit title and code	M1715 - Engineering of Model-driven languages				
Number of ECTS credits allocated	3	Term	Semester based (2)		
Web	<a href="https://moodle.unican.es/">https://moodle.unican.es/</a>				
Language of instruction	Spanish	English Friendly	Yes	Mode of delivery	Face-to-face

Department	DPTO. INGENIERÍA INFORMÁTICA Y ELECTRÓNICA				
Name of lecturer	JUAN MARIA RIVAS CONCEPCION				
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Other lecturers					

3.1 LEARNING OUTCOMES
- Ability to model and describe abstract information about a domain of knowledge using meta-models and constraint languages.
- Ability to specify specific visual and textual languages to build models concerning a domain of knowledge.
- Ability to formulate the semantics of an abstract syntax.
- Ability to formulate transformations between models using specific languages.

#### 4. OBJECTIVES

To be able to model a knowledge domain based on an abstract syntax through meta-models and domain-specific languages.

To be able to formulate the information related to a system based on metamodels that model their domain and on the specification of restrictions.

To know the languages and tools to transform models from one domain to another based on their abstract syntax and the relationships between their semantics.

To know how to integrate domain-specific models and languages in the processes of developing computer systems.

#### 6. COURSE ORGANIZATION

##### CONTENTS

1	Introduction to models and model-driven engineering.
2	Abstract syntax and domain-specific languages.
3	Textual and graphical formulation of concrete syntaxes.
4	Model transformation languages and tools.
5	Practical project on the course subjects

#### 7. ASSESSMENT METHODS AND CRITERIA

Description	Type	Final Eval.	Reassessn	%
Continuous evaluation based on the work in the practical project.	Laboratory evaluation	Yes	Yes	50,00
Final oral evaluation based on the developed practical project	Oral Exam	Yes	Yes	50,00
TOTAL				100,00
Observations				
There is a unique annual evaluation. If the student does not pass the evaluation activities carried out during the regular class period, he/she will have a subsequent recovery evaluation. In any case, before september.				
Observations for part-time students				
The evaluation method is flexible enough so it can be used for part-time students.				

#### 8. BIBLIOGRAPHY AND TEACHING MATERIALS

##### BASIC

Anneke Kleppe : "Software Language Engineering: Creating Domain-Specific Languages Using Metamodels" Addison- Wesley, 2008.

Steven Kelly & Juha-Pekka Tolvanen : "Domain-Specific Modeling: Enabling Full Code Generation" Wiley-Intercscience, 2008.

Markus Voelter : "DSL Engineering: Designing, Implementing and Using Domain-Specific Languages" CreateSpace Independent Publishing Platform, 2013

