ACADEMIC PROGRAM

END-OF-DEGREE PROJECT

B.F.A. IN **COMPUTER SCIENCE**

MODALITY: ON CAMPUS

ACADEMIC YEAR: 2023-2024

Name of the course:	End-of-Degree project
Degree :	Computer Science
Location:	Centro Universitario de Tecnología y Arte Digital
Area:	Trabajo de Fin de Grado
Year:	4º
Teaching period:	Anual
Type:	Trabajo Fin de Grado / Máster
ECTS credits:	9
Teaching modality:	On campus
Language:	English
Lecturer / Email	Dr. Juan Luis Posadas Sanchez/juan.posadas@u-tad.com
Web page:	http://www.u-tad.com/

SUBJECT DESCRIPTION

Area description

The End-of-Degree project is a compulsory subject where the students demonstrate their maturity as software engineers through the integration of the

acquired knowledge, as well as through the reflectiveness used to rationalize the technical choices and decisions that are related to the degree when

facing a software project, whether of creation or research

Subject description

The Final Degree Project is an original project or report that combines all the basic skills and abilities of the Degree. It is oriented towards the search, management, organisation and relevant interpretation of the data necessary for the student's research, who will acquire the necessary methodology for the research and bibliographic documentation of the chosen topic.

This subject is essential to consolidate the competences acquired during the Bachelor's Degree as well as to acquire the necessary methodology for postgraduate studies and the doctoral thesis.

All designers of interactive products must know the study methodologies necessary to master the tools and means of the design process, especially recognising the problems associated with the technical needs and technological background that are at the basis of all innovation.

COMPETENCIES AND LEARNING OUTCOMES

Competencies

BASIC AND GENERAL SKILLS

CG1 - Ability to understand, schedule and solve problems trough software development

CG2 - To develop software that are environmental friendly, engaged with society and natural resources and law and ethics compliant

CG3 - Knowledge of the scientific fundamentals applicable to the resolution of computer problems

CG4 - Ability to simplify and optimize computer systems by understanding their complexity

CG7 - Knowledge of the creative foundations of ideation in software development projects.

CG8 - To know the resources of employability and the legal framework in this professional walk.

CG9 - Ability to learn, modify and develop new software solutions

CG10 - Use of creative techniques to carry out computer projects

CG11 - Ability to search, analyze and manage information for insights capture

CG12 - Ability of decision-making during development of a digital project, based on the analysis of its context and in accordance with its target audience and business model

CB1 - Que los estudiantes hayan demostrado poseer y comprender conocimientos en un área de estudio que parte de la base de la

educación secundaria general, y se suele encontrar a un nivel que, si bien se apoya en libros de texto avanzados, incluye también

algunos aspectos que implican conocimientos procedentes de la vanguardia de su campo de estudio

CB2 - Que los estudiantes sepan aplicar sus conocimientos a su trabajo o vocación de una forma profesional y posean las

competencias que suelen demostrarse por medio de la elaboración y defensa de argumentos y la resolución de problemas dentro de

su área de estudio

CB3 - Que los estudiantes tengan la capacidad de reunir e interpretar datos relevantes (normalmente dentro de su área de estudio)

para emitir juicios que incluyan una reflexión sobre temas relevantes de índole social, científica o ética

CB4 - Que los estudiantes puedan transmitir información, ideas, problemas y soluciones a un público tanto especializado como no

especializado

CB5 - Que los estudiantes hayan desarrollado aquellas habilidades de aprendizaje necesarias para emprender estudios posteriores

con un alto grado de autonomía

BC1: Students should demonstrate knowledge in an area of study that builds upon the foundation of general secondary education and goest beyond at a level that, while supported by advanced textbooks, also encompasses certain aspects derived from the cutting edge of their field of study.

BC2: Students should be able to apply their knowledge to their work or vocation in a professional manner, and they should possess the competencies typically demonstrated through the development and defence of arguments as well as problem-solving within their field of study.

BC3: Students must possess the ability to gather and interpret relevant data (usually within their field of study) in order to make judgments that involve reflection on socially, scientifically, or ethically significant issues.

BC4: Students should be capable of conveying information, ideas, problems, and solutions to both specialized and non-specialized audiences.

BC5: Students should have developed the learning skills necessary to pursue further studies with a high degree of autonomy.

TRANVERSALES SKILLS

CT1 - Knowledge of the definition, scope and implementation of the fundamentals of project management methodologies for technology projects

CT2 -Knowledge of the main sectorial players and the life cycle of a digital content development and commercialization project

CT4 -Ability to update the knowledge acquired in the management of digital tools and technologies according to the current state of affairs of the sector and the technological solution

SPECIFIC SKILLS

CE10 - Ability to work with a release manager and generate application documentation automatically.

CE18 - Ability to design the architecture of an object-oriented computing application using the most appropriate design patterns and integrating them into the entire architecture.

CE19 - Ability to conceive, design through graphic languages and implement a computer application using different development methodologies, from the conception of the product to its final development to the definition of its phases and iterations

CE20 - Ability to test the operation and functionality of a computer application, develop test plans and use test-oriented design and programming techniques

CE21 - Ability to assess the quality of a computer application by applying software quality measurement metrics, procedures, and standards

CE29 - Ability to operate in complex situations in the field of the development of complete software projects.

CE30 - Ability to synthesize a software project by reflecting ideas in a structured, orderly and understandable way as well as exposing and defending it

Learning outcomes

Upon completion of the degree, the graduate will be able to:

- To organize in a scholar way the information and presentation of an idea or project.

- Distinguishing the cultural context and the economic, technological and geographical factors that influence a software product

- Developing analytical and discursive skills to leverage the social, cultural and economical value of a digital product

CONTENTS

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SUBJECT SYLLABUS

- Topic 1. Development of the TFG

TRAINING ACTIVITIES AND TEACHING METHODOLOGIES

TRAINING ACTIVITIES

LEARNING ACTIVITIES	Total hours	Hours of presence
Theoretical / Expository classes	15	15
Tutorials	12	6
Evaluation Activities	2	2
Preparation and defense of the TFG	196	0
TOTAL	225	23

Teaching methodologies

Expository method or master lesson

Case learning

Learning based on problem solving

Project based learning

Cooperative or collaborative learning

inquiry learning

Flipped classroom methodology

Gamification

Just in time Teaching (JITT) or classroom on time

Expository method or master lesson

Case method

Learning based on problem solving

Project based learning

Cooperative or collaborative learning

inquiry learning

Flipped classroom methodology

Gamification

TEMPORAL DEVELOPMENT

Development of the TFG: Annual Subject

EVALUATION SYSTEM

ASSESSMENT SYSTEM	MINIMUM SCORE RESPECT TO THE FINAL ASSESSMENT (%)	MAXIMUM SCORE RESPECT TO THE FINAL ASSESSMENT (%)
Evaluation of the TFG report	100	100

GRADING CRITERIA

ASSESSMENT SYSTEM	ORDINARY EVALUATION	EXTRAORDINARY EVALUATION
Evaluation of the TFG report	40	40
Public defense of the TFG before the examining board	50	50
TFG tutor's report	10	10

General comments on the evaluations/assessments

The tutor evaluates the process of writing the dissertation, the student's attendance to tutorials and problem solving, as well as the deliveries made, and the final result of the TFG.

On the part of the examining board, the observations and grade of the tutor will be taken into account, but the report presented will be evaluated, both in its formal aspects and in the content and results of knowledge achieved, and, above all, the student's act of defense, in terms of the presentation of his/her work and the answers given to the questions posed by the members of the examining board.

LIST OF REFERENCES (BOOKS, PUBLICATIONS, WEBSITES):

Basic Bibliography

BLAXTER, Loraine; HUGHES, Christina; TIGHT, Malcolm. How to Research, McGraw-Hill Education (UK)

Recommended bibliography

The recommended bibliography will depend on the specificity of each Final Project.

REQUIRED MATERIALS, SOFTWARE AND TOOLS

Type of classroom

The classroom is virtual in order to include all the documentation necessary to carry out the TFG, but all the actions (tutorials and group training, individualised tutorials, examining boards, etc.) are face-to-face.

Materials:

Laptop computer

Software:

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