1. OVERVIEW

Subject area	Engineering Project
Degree	Bachelor's Degree in Computer Engineering
School/Faculty	Architecture, Engineering and Design
Year	First
ECTS	6 ECTS
Type	Core
Language(s)	Spanish
Delivery mode	On campus / Online
Semester	Second
Year	2022/2023
Coordinating professor	Carlos Moreno
Teacher	

2. INTRODUCTION

In this subject area, students will carry out a project where the knowledge acquired in the basic subjects from the branch of engineering will be applied, in particular those from computer science and/or physics.

The project will be designed by a coordinating professor of the subject with help from professors of related core subject areas, with the aim for the students to put into practice the knowledge from the rest of the core subject areas in the syllabus. It will have a common basic structure defined by the specific skills it develops.

An external company or organisation may take part in the definition of projects to provide support. Depending on the project's defining details, students participating in such projects may be required to sign a confidentiality agreement and/or commercial rights exploitation agreement.

The final assessment of the project will require the submission of a report, describing in detail the work carried out and, where appropriate, the prototype developed. Likewise, the oral defence of the project before, at least, the subject coordinator will be required. Professors of related core subjects and, where appropriate, the representative of the supporting external company or organisation may also be present.

3. SKILLS AND LEARNING OUTCOMES

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

- **CB05** - Students have developed the learning skills necessary to undertake further study in a much more independent manner.

Transversal skills (CT, by the acronym in Spanish):

- **CT01** - Independent learning: Ability to choose the most effective strategies, tools and opportunities for independent learning and implementation of what has been learnt.
- **CT02** - Self-confidence: Ability to evaluate one's own results, performance and skills with the self-determination necessary to complete tasks and meet any objectives.
- **CT05**– Problem analysis and solving. Be able to critically evaluate information, separate complex situations into their constituent parts, recognise patterns, and consider alternatives, different approaches and perspectives in order to find optimal solutions and negotiate efficiently.
- **CT06** - Oral or written communication**:** Ability to communicate and gather information, ideas, opinions and viewpoints to understand and be able to act, spoken through words and gestures and written through words and/or graphic elements.

- **CT7** - Awareness of ethical values: Ability to think and act in line with universal principles based on the individual's value, contributing to his/her full development and involving commitment to certain social values.
- **CT15** - Responsibility: Ability to fulfil commitments to themselves and others when undertaking a task and try to meet a range of objectives within the learning process. Ability to face and accept the consequences of actions taken freely.
- **CT17**– Teamwork: Ability to integrate and collaborate actively with other people, departments and/or organisations in order to reach common goals.

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

- **CE05** - Knowledge of the structure, organisation, operation and interconnection of computer systems, the fundamentals of their programming, and how they are used to solve engineering problems.

General skills of the profession (CG, by the acronym in Spanish):

- **CG8** – Knowledge of the basic subjects and technologies, which enable the students to learn and develop new methods and technologies, as well as give them the versatility to adapt to new situations.
- **CG10** - Knowledge to be able to carry out reports, measurements, calculations, valuations, appraisals, experts' reports, studies, task planning and other similar computer-related work.
- **CG11** - Ability to analyse and assess the social and environmental impact of technical solutions, understanding the ethical and professional responsibility of the role of a Technical Engineer in Computer Science.

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

- **RA1** - Apply knowledge of computer science, physics, mathematics and other core subjects to carry out an engineering project.
- **RA2** - Defend the procedures followed and the results obtained orally and/or in writing.
- **RA3** - Work in groups and independently to carry out medium-sized projects.
- **RA4** - Carry out individual tasks in the group work responsibly.
- **RA5** - Self-assess the results obtained and the performance provided, taking into account each person's abilities and demonstrating self-confidence.

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

Skills	Learning outcomes
CB05, CT01, CE05	7. ASSESSMENT
CT05, CT06, CG10	7. ASSESSMENT
7. ASSESSMENT	7. ASSESSMENT
CT07, CT15	7. ASSESSMENT
7. ASSESSMENT	7. ASSESSMENT

4. CONTENTS

A software development project will be carried out in which the knowledge acquired in the core subjects of the branch of engineering and architecture will be applied, with special emphasis on object-oriented programming, planning and project management.

The units will cover the following concepts:

- Project preparation and expectation management
- Scope definition and detailed planning
- Management of the ongoing project
- Current status estimation and defence
- Audits and risk management
- Submission validation
- Final project presentation

5. TEACHING/LEARNING METHODS

The types of teaching/learning methods are as follows:

- Lecture
- Case studies
- Collaborative learning
- Problem-based learning
- Project-based learning
- Professional Workshop simulation

6. LEARNING ACTIVITIES

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

On campus:

Learning activity (AF, by the acronym in Spanish)	Number of hours
Lectures, reading on main topics and complementary materials, implementation of activities carried out independently and collectively (including participation in collaborative learning forums).	25
Integrative group work, consisting of participation in debates and seminars, and group implementation of integrative activities, mainly in the classroom.	50
Independent working	50
Tutorials, academic monitoring and assessment, both in the classroom and on the Campus Virtual.	25
TOTAL	**150**

Online:

Learning activity (AF, by the acronym in Spanish)	Number of hours
Independent working	50
Independent reading on complementary topics and materials and implementation of activities carried out independently. Subsequently, asynchronous group discussion on the Campus Virtual forum, and online seminars with the synchronous e-learning tools on the Campus Virtual.	25
Integrative group work, consisting of participation in debates and seminars, and group implementation of integrative activities. Carried out with the support of the Campus Virtual (the debates are held via forums; the seminars are online). In addition, each group will have asynchronous communication tools to prepare the group work (mainly forums), as well as synchronous communication tools (mainly virtual meeting tools).	50
Tutorials, academic monitoring and assessment through the Campus Virtual. Some assessment tests (e.g. exams) will be carried out on-campus when necessary.	25
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
Knowledge tests, exams, test.	20%
Development of articles, reports or design briefs.	30%
Alternative assessment methods with mind maps, diaries, debates, portfolios, peer assessment, etc.	5%
Exercises, problems, case studies, designs, simulations and research will be used to assess the	15%

basic and general skills of the subject.	
Group presentation of the projects carried out in public.	30%
Knowledge tests, exams, test.	20%

Online:

Assessment system	Weighting
Knowledge tests, exams, test.	60%
Development of articles, reports or design briefs.	20%
Exercises, problems, case studies, designs, simulations and research will be used to assess the basic and general skills of the subject.	5%
Group presentation of the projects carried out in public.	15%

On the Campus Virtual, when you open the subject area, you will find all the details of your assessable tasks and the deadlines and assessment procedures for each task.

7.1. Ordinary exam period

To pass the subject area in the ordinary exam period, you must:

- Achieve a grade of at least 5.0 points out of 10 in the final grade
- Achieve an average grade of at least 5 out of 10 in the checkpoints and in the final submission.
- Minimum class attendance of 70% (or virtual sessions).

The grade in the ordinary exam period will appear as NP (No grade reported) if the student fails to submit any of the assessable tasks which count towards the weighted average, or does not take the corresponding knowledge test.

7.2. Extraordinary exam period (resits)

To pass the subject area in the extraordinary exam period, you will need a final grade (weighted average) of at least 5.0 out of 10.0 for the subject area. In any case, all assessable activities must have a grade of at least 5.0 out of 10.0.

All activities delivered in the extraordinary exam period will be carried out individually.

Activities that were not passed, and that were compulsory to pass in the ordinary exam, or those that were not submitted, must be submitted after having received the corresponding corrections from the teacher.

The grade in the extraordinary exam period will appear as NP (No grade reported) if the student fails to submit any pending activity with respect to what was presented in the ordinary exam period, or does not take the corresponding knowledge test.

8. TIMELINE

The timeline with submission dates for the assessable tasks in this subject area will be indicated in this section:

Assessable tasks	Date
Activity 1: Delivery and presentation of the project proposal and product	Week 5
Activity 2: Delivery of the project's agenda and minutes	Weeks 9–11
Activity 3: Simulation of the management committee and delivery of the project's control dashboards.	Weeks 12–13
Activity 4: Project audit simulation	Weeks 15–17
Activity 5: Definition and carrying out of the test plan	Week 18
Activity 6: Delivery and final explanation of the project's result	Week 20

The timeline may be subject to change for logistical reasons related to the activities. Students will be informed of any changes in due time and course.

9. BIBLIOGRAPHY

The reference and support material sources for the subject area will be published on the Campus Virtual.

10. DIVERSITY AWARENESS UNIT

Students with special educational needs:

To ensure equal opportunities, curricular adaptations or adjustments for students with special educational needs will be outlined by the Diversity Awareness Unit (UAD, Spanish acronym).

As an essential requirement, students with special educational needs must obtain a report about the curricular adaptations/adjustments from the Diversity Awareness Unit by contacting unidad.diversidad@universidadeuropea.es at the beginning of each semester.

11. STUDENT SATISFACTION SURVEYS

Your opinion matters!

Universidad Europea encourages you to complete our satisfaction surveys to identify strengths and areas for improvement for staff, degrees and the learning process.

These surveys will be available in the survey area of your campus virtual or by email.

Your opinion is essential to improve the quality of the degree.

Many thanks for taking part.