COURSE DATA

Data Subject	
Code	34663
Name	Project management
Cycle	Grade
ECTS Credits	6.0
Academic year	2024 - 2025

Study (s)

Degree	Center	Acad. year	Period
1400 - Degree in Computer Engineering	School of Engineering	3	Second term

Subject-matter

Degree	Subject-matter	Character
1400 - Degree in Computer Engineering	7 - Software engineering and project management	Obligatory

Coordination

Name	Department
ROMERO GOMEZ, VERONICA	240 - Computer Science

SUMMARY

This course "Project Management" is part of the subject "Software Engineering and Project Management". Its general objective is that students gain the ability to properly apply all previously acquired knowledge to the design, development and evaluation of projects and reports in the field of Computer Engineering, applying the methodology and the basic principles of economics, management, auditing and business organization. It is a compulsory subject that is taught quarterly basis in the third year of the degree of Computer Engineering in the second quarter. The curriculum consists of a total of 6 ECTS.

In general terms, the objectives of the course are:

- Primarily, to enable students to successfully face the real project management of any type within the computer industry and to a large extent, information technology and communications (ICT).

- Know the general theory of project management and the reasons against judicial management within an IT organization.

- Introduce the concept of Information Systems Plan, from the perspective of strategic plan computer within an organization and its relationship with project management.

- To know the different phases of the life cycle of a computer project.

- To understand the features that should have documentation of a project, technical report and the presentation and defense of a project.

- Know the technical feasibility ICT projects.

- Learn the techniques of economic evaluation of projects in the field of Computer Engineering.

- Learn the techniques of planning and project control.

- Understand the relationship between the technical aspects to be addressed in a draft plan and information systems of an organization.

- To present the basic elements of an audit of IT projects and their difference from the computer internal control methodologies

From the educational point of view, the subject has a practical approach and is primarily focused on the development of practical skills for the engineer who must use their professional development as a project manager, or as part of the project team. In achieving the above objectives, the student must have acquired a number of skills related to management of both material and human resources in the planning and implementation of any ICT project.

PREVIOUS KNOWLEDGE

Relationship to other subjects of the same degree

There are no specified enrollment restrictions with other subjects of the curriculum.

Other requirements

The course, given its general nature, does not need a specific background, although it is recommended to have attended the courses Engineering, Society, University and Business, in order to have an initial perception of the world of a Company. On the contrary, it does provide very direct connections in those subjects in which the work is embodied in a project such as Software Engineering I and Software Engineering II.

1400 - Degree in Computer Engineering

- G1 - Ability to design, write, organise, plan, develop and sign projects in the field of computer engineering aimed at the design, development or exploitation of computer systems, services and applications.
- G2 - Ability to lead project activities in the field of information technology, in accordance with both the knowledge and the specific skills acquired in the degree.
- G3 - Ability to design, develop, evaluate and ensure the accessibility, ergonomics, usability and security of computer systems, services and applications, and of the information that these manage.
- G4 - Ability to define, evaluate and select hardware and software platforms for the development and implementation of computer systems, services and applications, in accordance with both the knowledge and the specific skills acquired in the degree.
- G5 - Ability to design, develop and maintain computer systems, services and applications using software engineering methods as an instrument for quality assurance, in accordance with both the knowledge and the specific skills acquired in the degree.
- G6 - Ability to design and develop computer systems and centralised or distributed computer architectures which integrate hardware, software and networks, in accordance with both the knowledge and the specific skills acquired in the degree.
- G9 - Ability to solve problems with initiative, decision making, autonomy and creativity. Ability to communicate and transmit the knowledge, skills and abilities of a computer engineer.
- G10 - Knowledge to perform measurements, calculations, assessments, appraisals, surveys, studies, reports, scheduling and other similar work in the field of computer engineering, in accordance with both the knowledge and the specific skills acquired in the degree.
- G12 - Knowledge and application of the basic principles of economics and human resource management, project organisation and planning, and legislation, regulation and standardisation in the field of computer projects, in accordance with both the knowledge and the specific skills acquired in the degree.
- R1 - Ability to design, develop, select and evaluate computer applications and systems while ensuring their reliability, safety and quality, according to ethical principles and current legislation and regulations.
- R2 - Ability to plan, design, implement and manage computer projects, services and systems in all areas, leading their implementation and continuous improvement by assessing their economic and social impact.
- R3 - Ability to understand the importance of negotiation, effective work habits, leadership and communication skills in all software development environments.
- R4 - Ability to draw up the technical specifications of a computer system, according to standards and regulations.

- TI2 - Ability to select, design, implement, integrate, evaluate, build, manage, exploit and maintain hardware, software and network technologies, within adequate cost and quality thresholds.
- TI3 - Ability to use user-centred and organisation-centred methodologies for the development, assessment and management of IT-based applications and systems, to ensure accessibility, ergonomics and usability.
- TI6 - Ability to design systems, applications and services based on network technologies, including the Internet, the web, e-commerce, multimedia, interactive services and mobile computing.
- SI3 - Ability to actively participate in the specification, design, implementation and maintenance of information and communication systems.

The content of this subject aims to achieve the following learning outcomes:

-To apply methodologies for the development, implementation and maintenance of information systems.

-Plan and execute iterative software development processes correctly

- Knowing to apply software design patterns in each situation depending on the needs of the software development project

-Define validation testing and requirements verification

-Get user and software requirements

-To understand the improvements that a business-based management and of production based on projects against a methodology of continuous type

-Know, differentiate and write the different documents that are usually handled during the management and life of a project

- Analyze the basics of project management

-Develop basic skills (techniques and tools) in the planning and execution of projects

-Estimate costs, times and resources in a project

-Develop and present technical documentation of projects in English

DESCRIPTION OF CONTENTS

1. An introduction to the Project Management

1.1 Introduction to the theory of project
1.2 Phases of a project and areas of expertise
1.3 Management of scope
1.4 Time management
1.5 Cost Management
1.6 Risk Management

1.7 Management of resources

2. Agile methodologies: SCRUM

2.1 Introduction
2.2 SCRUM methodology
2.3 Agile Project Management
2.4 Case Study

3. Scope management

3.1. Introduction to project scope
3.2. Phases of a project:
3.2.1. Home Project
3.2.2. Project definition
3.2.3. Project Planning
3.2.4. Verification of project
3.2.5. Control of project changes

4. Time management

4.1. The context of the Planning Projects
4.2. Time Management in Projects
4.2.1. Defining Activities
4.2.2. Sequencing of Activities
4.2.3. Estimated length of Activities
4.2.4. Development Management Plan Temporary
4.2.5. Temporal Control Management Plan

5. Cost management

5.1. Introduction
5.2. Cost Planning
5.3. Cost Estimating
5.4. Budget Estimating
5.5. Control of costs

6. Risk management

6.1. Certainty, risk and uncertainty
6.2. The risk throughout the life cycle of a project
6.3. Phases of Risk Management
6.4. Quantification of risk

7. Resource Management

7.1. Introduction to Resource Management
7.2. Activities of Resource Management:
7.2.1. Human Resource Plan
7.2.2. Acquisition of the project team
7.2.3. Development of the project team
7.2.4. Address of the project team
7.3. Human Resource Management

8. Control and monitoring of the project

8.1. The control processes
8.2. procedures involved
8.2.1. Control and status reports
8.2.2. Management changes and problems

9. Economic aspects of a project

9.1. The economic engineering. Definition
9.2. Financial criteria for evaluating: Analysis in the preliminary stages of the project
9.3. Financial criteria for evaluating: Analysis in advanced stages of the project (VAN & TIR)

10. Degree Project Documentation

10.1. Introduction.
10.2. Types of projects.
10.3. Structure of the Thesis
10.4. Standard errors of DP
10.5. Evaluation

WORKLOAD

ACTIVITY	Hours	% To be attended
Theory classes	30,00	100
Laboratory practices	20,00	100
Classroom practices	10,00	100
Attendance at events and external activities	3,00	0
Development of group work	15,00	0
Development of individual work	10,00	0
Study and independent work	10,00	0
Readings supplementary material	5,00	0
Preparation of evaluation activities	15,00	0
Preparing lectures	10,00	0
Preparation of practical classes and problem	12,00	0
Resolution of case studies	10,00	0
TOTAL	**150,00**	

TEACHING METHODOLOGY

The development of the subject is structured around four axes: learning with the teacher (theory sessions, problems and face-to-face tutorials), the seminars-workshops, the laboratory sessions and the realisation of a project in all its stages, from the planning phase to the final realisation of the project document.

Learning with the teacher

In the theory sessions the lecture model will be used. In these sessions, the lecturer will present the fundamental contents of the subject, using the audiovisual media available (presentations, transparencies, blackboard).

In the problem sessions, the teacher will explain a series of typical problems corresponding to themes 2, 4, 5 and 9, thanks to which the students will learn how to plan sprints in a SCRUM project (theme 2), how to obtain the execution schedule of a project (theme 4), how to manage the costs of a project (theme 5) and how to carry out economic studies (theme 9).

The participatory method will be used for these sessions, in which communication between students and students/professor will be a priority. As the theoretical concepts are explained, exercises will be carried out in class. In addition, at the end of a topic, a series of exercises will be sent as homework. The teacher will indicate which day will be dedicated to the resolution of these problems in class, so that the student attends these classes with the exercises prepared in advance.

Group activities

The theoretical concepts introduced in the lectures will be complemented with group activities. In these activities, the groups of students will propose the resolution of different exercises, estimation of a scrum project, determination of user stories, composition in tasks of a project, etc. The solutions of the different groups will be shown to the rest of the class and, subsequently, the teacher will indicate which solutions are the most appropriate.

Additionally, the lecturer will give a seminar on final projects in Computer Engineering.

Laboratory sessions

Laboratory sessions are aimed at:

-Learning and management of project management tools both commercial (Microsoft Project) and free distribution (GranttProj).

-Make a spreadsheet, Microsoft EXCEL type, for the representation of the scope of a project (WBS/WBS) and the study of their own operating account and economic feasibility.

These laboratory sessions will be organized in working groups of a maximum of two people.

Realisation of a project (group work)

Students will be divided into groups of 3 to 5 students to carry out a project related to the agile SCRUM methodology. The project will have to carry out both the project planning and the planning of each of the sprints. In addition, the team will have to replan the sprints to deal with situations that prevent their execution as planned.

Tutorials

The students will have a schedule of tutorials whose purpose is to solve problems, doubts, orientation in works, etc. The schedule of these tutorials will be indicated at the beginning of the academic year.

In addition, they will have the opportunity to clarify some doubts by e-mail or discussion forums using the "Virtual Classroom" tool provided by the University of Valencia.

EVALUATION

Knowledge assessment will proceed in two ways:

1) CONTINUOUS EVALUATION

Recommended method for students. The following factors are evaluated to obtain the final mark:

• 65% of theoretical knowledge and problems (TEO).

• 20% of the laboratory (LAB)

• 15% of additional work (TRA)

To be able to average it is necessary to obtain a minimum mark of 4,5 in each one of the parts, being necessary that the final mark will be equal to or superior to 5 to pass the subject.

a) Theoretical knowledge and problems (TEO).

The marks for theoretical knowledge and problems are assessed according to the following factors:

- 90% OF INDIVIDUAL TESTS OBJECTIVES. During the course there will be different written tests on theoretical knowledge and problems. It will be necessary to get a grade of 4.5 or higher in each test so that you can compensate. In the final examination of the first call, those parts that have not been passed in the partial tests will have to be recovered.
- 10% OF PROBLEMS. We ill evaluate the different problems that are proposed to the students, either to perform in class or at home. This activity is not recoverable.

b) Laboratory (LAB).

The laboratory grade will be obtained by averaging the grade obtained in the N practical sessions. In order to obtain the laboratory grade, it will be necessary to have presented all the practices and have attended a minimum of 80% of the sessions.

c) Group work (TRA).

The group work mark will be obtained by averaging the marks obtained in each of the works by the weight assigned to each one. It will be necessary to obtain a mark greater than or equal to 4.5 in each assignment so that this part can be compensated.

2) SINGLE EVALUATION SYSTEM AND SECOND CALL

This method will be applied in the second call and also to any student who, for a reasonable reason accepted by the teacher, cannot attend classes regularly. In these cases, the following factors are evaluated to obtain the final mark:

• 70% of theoretical knowledge and problems (TEO).

• 20% of the laboratory (LAB)

• 10% of additional jobs (TRA)

In order to average it is necessary to obtain a minimum mark of 4.5 in each of the parts, and the final mark must be equal to or greater than 5 to pass.

a) Theoretical knowledge and problems (TEO).

The theoretical knowledge and problems mark is assessed through a single exam, without taking into account other factors such as attendance or problem exercises carried out during the course.

b) Laboratory (LAB).

The laboratory mark will be obtained by averaging the mark obtained in the practical sessions, which must be submitted, even if the laboratory sessions have not been attended.

c) Additional work (TRA).

The mark for additional works will be obtained by averaging the marks obtained in each of the works by the weight assigned to each one. It will be necessary to obtain a mark greater than or equal to 4.5 in each assignment so that this part can be compensated. The student must submit all the works to aprove, and only the written report part will be valued.

In any case, the evaluation of this subject will be done in compliance with the University regulations in this regard, approved by the Governing Council on 30th May 2017 (AGCUV 108/2017). Copying or plagiarism of any activity that is part of the evaluation will result in the impossibility of passing the course, and the student will then be subject to the appropriate disciplinary procedures indicated in the ACTION PROTOCOL FOR FRAUDULENT PRACTICES AT THE UNIVERSITY OF VALENCIA (ACGUV 123/2020).

REFERENCES

Basic

- Project Management Institute, "A Guide to the Project Management Body of Knowledge", 4th edition, Project Management Institute (2008), ISBN: 19-33890517
- Domingo Ajenjo, A. Dirección y Gestión de Proyectos, un enfoque práctico. Editorial Rama, (2005). ISBN: 9701511301.
- Martín, G; Dawson, C. El proyecto fin de carrera en ingeniería informática. Editorial Prentice Hall; ISBN: 84-20535605.

Additional

- Pereña, J. "Dirección y Gestión de Proyectos". Editorial Díaz de Santos (1991). ISBN: 8479782498
- Grashina M.N; Newell M.W, Preguntas y Respuestas Sobre La Gestión de Proyectos, Editorial Gestión 2000, (2005). ISBN: 9788480886864
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