

**COURSE DATA****Data Subject**

Code	34898
Name	Project management
Cycle	Grade
ECTS Credits	6.0
Academic year	2021 - 2022

Study (s)

Degree	Center	Acad. year	Period
1403 - Grado de Ingeniería Telemática	School of Engineering	3	Second term

Subject-matter

Degree	Subject-matter	Character
1403 - Grado de Ingeniería Telemática	17 - Project management	Obligatory

Coordination

Name	Department
MARTINEZ DURA, JUAN JOSE	240 - Computer Science

SUMMARY

This course "Project Management" is part of the subject "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 Telematics 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 Telematics 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 telematic 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 Telematics 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 software development associated with elements of quality assurance

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.

OUTCOMES

1403 - Grado de Ingeniería Telemática

- G8 - Knowledge and application of basic elements of economics and human resource management, project organization and planning, and legislation, regulations and norms in telecommunications.
- G9 - Ability to work in a multidisciplinary environment and in a multilingual group and to communicate, in writing and orally, knowledge, procedures, results and ideas related to telecommunications and electronics.
- G6 - Ability in the handling of specifications, regulations and norms of compulsory compliance.
- G1 - Ability to write, develop and sign projects in the field of Telecommunication Engineering aimed - according to the knowledge acquired in section 5 of CIN/352/2009 regulation - at the conception and the development or the exploitation of networks, services and applications of telecommunications and electronics.
- E3 - Ability to construct, operate and manage telematic services using analytical tools for planning, dimensioning and analysis.



LEARNING OUTCOMES

The learning results of the course “Project Management” are:

- Understand the improvements provided business management and project-based production compared to a continuous type methodology (G6, G8, G9)
- Learn to differentiate and drafting the various documents that are often managed for the management and life of a project (G1, G2, G6, G9)
- Analyze the basic concepts of project management (G2, G6, G8, G9)
- Develop basic skills (techniques and tools) in planning and implementing projects (G6, G8, G9, E3)
- Estimate costs, time and resources in a project (G8, G9, E3)
- Understand the key strategic factors in the ICT sector of the various projects associated (G2, G6, G8)

In addition to the specific objectives mentioned above, during the course will encourage the development of several generic skills, among which include: analysis and synthesis of any problems related to ICT, the argument from rational and logical criteria, the expression accurate and organized development of problems in a systematic and organized, personal work, the proper allocation of time and, finally, the capacity for teamwork.

DESCRIPTION OF CONTENTS

1. An introduction to the Project Management

- 1.1 Project Definition
- 1.2 Project Phases
- 1.3 Project Management
- 1.4 Life cycle of the projects
- 1.5 Key Issues in Project management

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
 - 9.2.1. Cost-capacity ratio
 - 9.2.2. Breakeven Diagram
 - 9.2.3. Studies based on ratios
 - 9.2.4. Accounting rate of return
 - 9.2.5. Payback
 - 9.2.6. Benefit cost
 - 9.2.7. Case Study
- 9.3. Financial criteria for evaluating: Analysis in advanced stages of the project
 - 9.3.1. The financial dimension of investment: cash flow (cash flow)
 - 9.3.2. Updated and capitalization
 - 9.3.3. Net Present Value (NPV)
 - 9.3.4. Rate of Return (IRR)

10. 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
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	15,00	0
Resolution of case studies	10,00	0
TOTAL	150,00	



TEACHING METHODOLOGY

The development of the course is structured around four pillars: learning with the teacher (theory sessions, problems and tutorials), seminars, workshops, laboratory sessions and completion of a project meeting all stages from the planning stage to the ultimate realization of the project document.

Group learning with the teacher

In the theory sessions will use the lecture model. In them the teacher will present the main contents of the course, using the media at your fingertips (presentations, transparencies, blackboard).

In the session problems, the teacher will explain a number of problems-type, through which the students learn to conduct economic feasibility studies and operating accounts and obtain the schedule implementation of a project. Participatory approach will be used for such meetings, which is to prioritize the communication between students and student / teacher. To do this, tell the teacher beforehand what day will be dedicated to solving problems and what problems could be solved, so that the student attends these classes with the approach of the problems prepared in advance. Its resolution will be completed in class in groups of four or five students who then must go to the blackboard to explain the problem and resolve the doubts that have the other fellow.

Competencies will be covered: G2, G8 and E3.

Seminar-workshop (group work in problem sessions)

The theoretical concepts introduced in lectures will be complemented by conducting a series of seminar-workshops. These seminars will address topics such as systems development methodology of information-oriented government (Metric 3), professional associations in Telematics, professionalization of the post of project manager, etc.. These seminars will be prepared for all the students organized in small groups (2-4 students). The teacher will select one group, at its option, to be submitted and after the exhibition, there will be a question and discussion by the teacher and other students. Both the exposure and involvement in class the other partners will be considered for final evaluation.

Additionally, the teacher will teach a seminar on final projects and training practices in Telematic Engineering. Attendance at this seminar is mandatory, and students must make a summary of the above, you will finally have its value in the final grade for the course.

Competencies will be covered: G6 y G9.

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 like Microsoft Excel, to represent the scope of a project (EDT / WBS) and the study of their own operational and economic viability.

You are laboratory sessions will be organized around working groups of a maximum of two people.



Competencies will be covered: G2, G6, G8, G9 y E3.

Completion of a project (group work)

The same groups that were formed for conducting the workshop seminars (from 2 to 4 students), should prepare a project to address content included in any of the knowledge areas included within the scope of Telematics Engineering fulfilling all its stages, from the planning stage to the ultimate realization of the project document and presentation. The planning of this project will be using the tool MS Project (or similar) seen in the lab sessions, and a description of the range (EDT / WBS) and an economic study based on type EXCEL spreadsheet (or similar).

On the other hand, following a development based on traditional life cycle of systems development, each team must prepare the project documentation in 4 parts: memory, specifications, budgets and basic block diagram of the alternative proposal.

At the end of the semester, each team must provide a copy of your project and also must present and defend it. Excluded from the need for exposure of work, but not the presentation of documentation, those students who already made the presentation for one of the topics covered in the seminar-workshop.

Competencies will be covered: G1, G2, G9 y E3.

Office Hours

The students have a schedule of tutorials aimed at solving the problems, doubts, work orientation, etc.. The schedule of these office hours will be indicated at the beginning of the academic year. They will also have the opportunity to clarify some questions via email or discussion forums by using the tool "Virtual Classroom", which gives the University of Valencia.

EVALUATION

Knowledge assessment will be done in two ways:

1) CONTINUOUS EVALUATION

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

- 55% theoretical knowledge and problems (TEO).
- 25% of the laboratory (LAB)
- 20% of additional work (ART)

To be able to average it is necessary to obtain a minimum grade of 4,5 in each one of the parts, being necessary that the final note is equal to or superior to 5 to approve.



a) Theoretical knowledge and problems (TEO).

The note of 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 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 will 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 grade of the laboratory it will be necessary to have presented all the practices and to have attended a minimum 80% of the classes.

c) Additional works (TRA).

The note of additional works will be obtained by averaging the grades obtained in each of the works by the weight assigned to each one. It will be necessary to obtain a mark of 4,5 or more in each work so that this part can be compensated.

The note of each work will be obtained in function of the written memory, and optionally it will be possible to value the public exhibition of the work done.

2) SINGLE EVALUATION SYSTEM AND SECOND CALL

This method will apply to any student who, for a reason reasoned and admitted by the teacher, can not attend regularly to classes and in the second call.



The following factors are evaluated to obtain the final mark:

- 55% theoretical knowledge and problems (TEO).
- 25% of the laboratory (LAB)
- 20% of additional work (ART)

To be able to average it is necessary to obtain a minimum grade of 4,5 in each one of the parts, being necessary that the final note is equal to or superior to 5 to approve.

a) Theoretical knowledge and problems (TEO).

The note of theoretical knowledge and problems are assessed by a single examination, not taking into account other factors such as attendance or problem exercises performed during the course.

b) Laboratory (LAB).

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

c) Additional works (TRA).

The note of additional works will be obtained by averaging the grades obtained in each of the works by the weight assigned to each one. It will be necessary to obtain a mark of 4,5 or more in each work so that this part can be compensated.

The student must have submitted all the papers to approve, and only the part of the written report will be evaluated.



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
- Gómez, J. F; Coronel, A.J; Martínez de Irujo, L; Lorente, A. "Gestión de proyectos". FC Editorial. Madrid, (2000). ISBN: 84-28317747.

ADDENDUM COVID-19

This addendum will only be activated if the health situation requires so and with the prior agreement of the Governing Council

Contents

The contents initially included in the teaching guide are maintained.

Workload and temporary teaching planning

The different activities described in the teaching guide are maintained with the planned dedication.

The material for the follow-up of the classes of theory/practices allows to continue with the professor of temporary planning so much in days as in schedule, so much if the teaching is face-to-face in the classroom or if it is not.

Teaching methodology

If it is required by the sanitary situation, the Academic Committee of the Degree will approve the Teaching Model of the Degree and its adaption to each subject, establishing the specific conditions in which it will be developed, taking into account the actual enrolment data and the space availability.



In classroom theory and practices, students will tend to have the maximum physical attendance possible, always respecting the sanitary restrictions that limit the capacity of the classrooms as indicated by the competent public health authorities to the estimated percentage of their usual occupation.

Depending on the capacity of the classroom and the number of students enrolled, it may be necessary to distribute the students into two groups. If this situation arises, each group will attend classroom theory and practical sessions with physical presence in the classroom by rotating shifts, thus ensuring compliance with the criteria for occupying spaces.

The rotation system will be established once the actual enrollment data is known, guaranteeing, in any case, that the attendance percentage of all the students enrolled in the subject is the same.

With respect to laboratory practices, attendance at sessions scheduled in the schedule will be totally face-to-face.

Once the actual enrollment data is available and the availability of spaces is known, the Academic Committee of the Degree will approve the Teaching Model of the Degree and its adaptation to each subject, establishing in said model the specific conditions in which it will be developed teaching the subject.

If there is a closure of the facilities for sanitary reasons that totally or partially affects the classes of the subject, these will be replaced by non-contact sessions following the established schedules.

Evaluation

The evaluation system described in the teaching guide of the subject in which the different evaluable activities have been specified as well as their contribution to the final grade of the subject is maintained.

If there is a closure of the facilities for health reasons that affect the development of any face-to-face evaluable activity of the subject, it will be replaced by a test of a similar nature that will be carried out in virtual mode using the computer tools licensed by the Universitat de València.

The contribution of each evaluable activity to the final grade for the course will remain unchanged, as established in this guide.



Bibliography

The bibliography recommended in the teaching guide.

This addendum will only be activated if the health situation requires it and with the prior agreement of the Governing Council.

