# Software development projects management

**Academic Year: ( 2020 / 2021 )** **Review date: 06-07-2020**

**Department assigned to the subject: Computer Science and Engineering Department**

**Coordinating teacher: SANCHEZ SEGURA, MARIA ISABEL**

**Type: Compulsory ECTS Credits : 6.0**

**Year : 4 Semester :**

## REQUIREMENTS (SUBJECTS THAT ARE ASSUMED TO BE KNOWN)

Writing and Communication Skills
Information Skills
Introduction to Engineering Management

## OBJECTIVES

(Competences related with the ABET program are displayed in parentheses)

Transverse Skills / General:
- Troubleshooting. (PO a g)
- Teamwork. (PO d)
- Leadership. (PO d)
- Autonomous learning. (PO d)
- Oral and written expression. (PO g)
- Learn to gather and interpret relevant data to inform judgments that include reflection on important issues of social, scientific or ethical
- To transmit information, ideas, problems and legal solutions to both specialist and non-specialist
- Be able to perform activities of negotiation and conciliation
- Being able to work together
- Knowing how to apply management skills such as leadership, teamwork and motivation of people.
- Analyze and assess, from the information available, the situation and probable development of a project.
- Integrate and perform tasks in any functional area of a business or organization.
- Learn to manage, administer and manage a project using professional judgment

Specific competences:
- Cognitive (To know) (PO b c d e f)
1. Knowledge of the importance of information systems in the development of software projects.
2. Knowledge of methodologies for the implementation and set up of information systems.
3. Knowledge of business management applications and Monitoring and control of software projects.
4. Knowledge about the presentation of a Proposal Letter to Offer Services.

- Procedimental/Instrumental (to know how to do) (PO d e f g)
1. Design solutions of information systems based on the existing technologies.
2. Plan and manage the development of one of those solutions.
3. Distinguish and assess the solutions found in the market.

- Attitudinal (To be) (PO d e f g k)
1. Capacity to generate new ideas (creativity).
2. Concern for quality.
3. Success motivation.
4. Interest for researching and seeking solutions to new problems.

Soft-skills: Communication, Team work.

Basic Skills title .
- That students can apply their knowledge to their work or vocation in a professional manner and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study .

General Powers of the title.
- Use tools, general purpose , collaborative and optimization work for the effective planning and implementation of projects.
- Efficiently use ICT media to write technical reports and project reports and papers on Computing and quality presentations .

Specific Skills title .
- Ability to design , develop, select and evaluate applications and systems, ensuring their reliability , safety and quality , according to ethical principles and legislation and regulations.
- Ability to plan, design , deploy and manage projects , services and systems at all levels , leading its implementation and continuous improvement and assessing their economic and social impact.
- Ability to understand the importance of negotiation, effective work habits , leadership and communication skills in all software development environments .
- Ability to analyze , design, build and maintain applications in a robust, secure and efficient paradigm and selecting the most appropriate programming languages ¿¿.
- Knowledge and application of the principles , methodologies and life cycles of software engineering .

General Competences
CG2. To be able to generate new ideas (creativity), anticipate new situations and adapt to team working, being also able to work in an autonomous way.

Specific competences of Information Systems area.
CESI1. Ability to integrate CIT solutions and business processes in order to satisfy the information requirements of the client, allowing them to achieve their objetives in an effective and efficient way, giving them competitive advantages.
CESI2. Ability to determine the requirements of an CIT system of an organization, considering security aspects and fullfilling the rules and laws in force.
CESI4. Ability to understand and to apply the principles and practices in a software development methodology.

## DESCRIPTION OF CONTENTS: PROGRAMME

1. Modern software development methodologies
2. Interrelation between engineering processes, control and management processes in the software development lifecycle
3. Software or service initial offer
4. Software configuration management
5. Quality management
6. Viability analysis
7. Software projects estimation techniques
8. Software projects planning techniques
9. Software projects analysis techniques
10. Software projects design techniques

## LEARNING ACTIVITIES AND METHODOLOGY

The teaching methodology is based on theory lectures and group work by students . It is pertinent to make the practice team to promote the education , training and information potential of group work : quantity; quality ; creativity ; structuring and mental flexibility . Additionally , he serves as training students for their future professional work , then, as you know , most of the time, Computer and Software Engineering , always working as a team .
The students' work is performed externally to the classes and these are used to correct errors and detect improvements in work groups and individual analysis of pupils
Group work of the assigned part . This step must be performed by each group so independently. This second step of the methodology is fully active , unschooled and individualized to the group ; ie self-taught.
Analysis and discussion groups in the classroom, the issues worked . This analysis will involve the decomposition of problems into subproblems , modularization of tasks, etc. .
Sharing of the findings of each group and partial synthesis . These two steps of the method are described that take place simultaneously in the same work session.

Theory Classes: 1.5 ECTS . Aim to achieve specific cognitive skills of the subject.

Practical lessons : 1.5 ECTS . Develop generic and specific competencies explicit by performing an extended case group that brings together the entire syllabus of the course in one year whose resolution is defended on public display.

Making Targeted Academic Activities .
- With the presence of the teacher : 1.5 Working ECTS deepening in some aspect in relation to the theme of the course will culminate with a public presentation of the results thereof.
- No teacher presence : 1.5 ECTS . Exercises and readings proposed by the teacher .

## ASSESSMENT SYSTEM

Final examination will not be realized for the students who follow continuous assessment

Exercises and examinations are both learning and evaluation activities. The evaluation system includes the assessment of guided academic activities and practical cases, with the following weights:

Practical case: 50%  (PO: a, b, c, d, e, i, j, k) (CG2, CESI1, CESI2, CESI4)
Guided academic activities:  (PO:  a, b, c, d, e, g, j, k) (CG2, CESI1, CESI2, CESI4)
- Present teacher: 25%
- Absent teacher: 25%

Practical lectures: Develop generic and specific skills explicit by performing a group event that brings together extended the entire agenda of the subject in a single year whose decision is upheld in public.

Guided academic activities.
- With the presence of the teacher: Deepening in some way related to the theme of the course will culminate with public presentation of the results.
- No teacher presence: Teamwork and Conflict Management / Effective Communication

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|---|---|
| **% end-of-term-examination:** | 0 |
| **% of continuous assessment (assigments, laboratory, practicals…):** | 100 |

## BASIC BIBLIOGRAPHY


- Dr David Tuffley  Software Configuration Management: A How To Guide for Project Staff, Createspace , 2011

- Aybüke Aurum Managing Software Engineering Knowledge, Springer, 2003

- Craig Larman Applying UML and patterns: an introduction to object-oriented analysis and design and iterative development, Prentice Hall, 2005

- Pressman, R., & Maxim, B Software engineering: A practitioner's approach (8th ed.),  McGraw-Hill., 2015

- Richardson, G Project management theory and practice (2nd ed.), Auerbach Publications, 2015

- Watts S. Humphrey Managing Technical People: Innovation, Teamwork and the Software Process (SEI), Addison-Wesley Educational Publishers Inc, 1996