

Course guide

220115 - PROJ - Projects

Last modified: 02/04/2024

Unit in charge:	Terrassa School of Industrial, Aerospace and Audiovisual Engineering		
Teaching unit:	758 - EPC - Department of Project and Construction Engineering.		
Degree:	BACHELOR'S DEGREE IN INDUSTRIAL TECHNOLOGY ENGINEERING (Syllabus 2010). (Compulsory subject).		
Academic year: 2024	ECTS Credits: 6.0	Languages: Catalan, Spanish	

LECTURER

Coordinating lecturer: SANTIAGO GASSO DOMINGO

Others:

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:

CE18-INDUS. Knowledge and skills to organize and manage projects. Understand the organizational structure and functions of a project office. (Common module in the industrial branch)

Transversal:

2. EFFICIENT ORAL AND WRITTEN COMMUNICATION - Level 3. Communicating clearly and efficiently in oral and written presentations. Adapting to audiences and communication aims by using suitable strategies and means.
3. TEAMWORK - Level 3. Managing and making work groups effective. Resolving possible conflicts, valuing working with others, assessing the effectiveness of a team and presenting the final results.

TEACHING METHODOLOGY

The course is organised as follows:

- Presencial sessions of contents exhibition
- Presencial sessions of practical work (exercises and problems)
- Work in groups
- Autonomous work for the realization of the project
- Autonomous work of study

LEARNING OBJECTIVES OF THE SUBJECT

Provide students with necessary theoretical and practical knowledge because they will be able to realize any project in the industrial engineering area.

Student should acquire knowledge and capacity of using necessary tools for: definition of the project, management of project, evaluation of alternatives and take decisions about viability, environmental aspects, with technical, economic and social viability. It will be remarked the information management, documentation and cooperative work in the projects.

Students should obtain the following fundamental objectives:

- To understand basic concepts of project,
- To apply work methodologies which are necessary for deployment of projects (project management).
- To promote creativity of the student.
- To analyse problems of the realization of projects.
- To analyse alternatives to solve problems.
- To evaluate adopted solutions and work realised in the development of the project.
- To develop basic engineering of the proposed solution.

STUDY LOAD

Type	Hours	Percentage
Self study	90,0	60.00
Hours small group	28,0	18.67
Hours large group	32,0	21.33

Total learning time: 150 h

CONTENTS

Module 1: Project in engineering

Description:

(ENG) 1.1 El Projecte d'Enginyeria. La metodologia per a la solució de problemes: Concepte de projecte d'enginyeria. El procés projectual. Conceptes bàsics (Especificacions bàsiques. Abast del Projecte. Objecte del Projecte. Justificació del Projecte). Fases del Projecte. Cicle de vida del projecte.

1.2 El Projecte d'Enginyeria. Un treball individual i de grup: Complexitat dels projectes. Multidisciplinarietat / Jerarquització. Els diferents rols dels actors dels projectes. Avantatges i condicionants del treball en grup. Documents formals dels projectes. Models i formats de treball.

1.3 L'entorn col·laboratiu BSCW. Una eina per al treball en grup: Funcionament de l'entorn. Organització de la documentació. Treball sobre l'entorn. Registre i accés al BSCW

Related activities:

(ENG) Activitat 1: Sessions grup gran/teoria

Activitat 2: Exercicis sessions de teoria

Activitat 3: Cas pràctic de realització projecte

Full-or-part-time: 18h

Theory classes: 4h

Laboratory classes: 4h

Self study : 10h

Module 2: Analysis and synthesis in project

Full-or-part-time: 36h

Theory classes: 8h

Laboratory classes: 8h

Self study : 20h

Module 3: Planning and programming of projects

Full-or-part-time: 27h

Theory classes: 6h

Laboratory classes: 6h

Self study : 15h



Module 4: Estimation of costs and economic evaluation of projects

Full-or-part-time: 27h

Theory classes: 6h

Laboratory classes: 6h

Self study : 15h

Module 5: Project phases and basic document

Full-or-part-time: 42h

Theory classes: 8h

Laboratory classes: 4h

Self study : 30h

ACTIVITIES

ACTIVITY 1: THEORY SESSIONS

Full-or-part-time: 22h

Self study: 8h

Theory classes: 14h

ACTIVITY 2: EXERCISES OF THEORY SESSIONS

Full-or-part-time: 20h

Self study: 6h

Theory classes: 14h

ACTIVITY 3: PRACTIC CASE OF PROJECT

Full-or-part-time: 84h

Self study: 56h

Laboratory classes: 28h

ACTIVITY 4: FINAL EXAM

Full-or-part-time: 14h

Self study: 12h

Theory classes: 2h

ACTIVITY 5: EVALUATION PROJECT. ORAL PRESENTATION

Full-or-part-time: 10h

Theory classes: 2h

Practical classes: 8h

GRADING SYSTEM

The Final qualification of subject will be obtained from the following marks with the ponderation indicated:

Final exam of theory 35%

Session exercises of theory 15%

Project evaluation. Documents of the project 10%

Project evaluation. Oral Presentation 5%

Project evaluation. Individual work 35%

The student participation is one of the parameters which they will be evaluated in laboratory sessions. For that reason, laboratory session is considered an evaluation act. Therefore, any absence not justified in any laboratory session will motivate a final qualification of NOT PRESENTED for student. Oral presentation of the project is considered also as evaluation act, any absence in this session will motivate a final qualification of NOT PRESENTED for student.

Qualification of exercises in the theory sessions is obtained with activities or works developed in these sessions. They are related with the theoretical concepts which are introduced in the class. These activities will not be replaced with other alternative activities.

Content aspects will be considered as formal in document of project evaluation.

EXAMINATION RULES.

Activity 3: Practical case of project

Students will be organised in groups. Cooperative group is the way to work with group. Coordinator will be chosen by the rest members of group.

Each group should realize an official document which explains work to do in the next session. They also write a diary act which explains what subjects have been arguing and what are the agreements adopted.

The student presence in laboratory session is considered an act evaluation. Assistance in these sessions is obligated for all students and it is needed for passing the course. Students should sign an assistance list at the beginning of the laboratory session.

BSCW is the virtual platform to develop work. This environment is a structure of folders which contain information that is used for group. Only the documents hanged to the BSCW will be considered for evaluation.

Contents and documents of the development of the project will be defined in the first week of course. All these documents will have to be available in the corresponding folder of BSCW. The course will not accept any work which is given out of the deadlines fixed for delivery. If any group do not present the project, they will receive a qualification as NOT PRESENTED.

Activity 4: Final exam of theory

Evaluation can consist on some questions with four possible answers. In this case, for each incorrect answer 0.5 points will be reduced, questions in blank will not reduce points. It will be completed with resolution of some exercises.

Activity 5: Evaluation of the Project. Oral presentation

Each group should present their project at the last week of course during 20-25 minutes. Students can use computer media in the presentation (PowerPoint, etc.).

Teacher of the department will evaluate oral presentation. Students will be asked to answer some questions which teacher will consider appropriate. Teacher will evaluate presentation with: structure, clarity, dynamics, answer to the questions and media used, etc.

BIBLIOGRAPHY

Basic:

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- Cos Castillo, M. Teoría general del proyecto, vol. 1, Dirección de proyectos. Madrid: Síntesis, 1995. ISBN 8477383324.
- Cos Castillo, M. Teoría general del proyecto, vol. 2, Ingeniería de proyectos. Madrid: Síntesis, 1997. ISBN 8477384525.
- Gómez-Senent, E. El proyecto diseño en ingeniería. Valencia: Universidad Politécnica de Valencia, 1997. ISBN 8477214549.
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Complementary:

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- Goldenberg, J.; Mazursky, D. Creativity in product innovation. Cambridge: Cambridge University Press, 2002. ISBN 0521002494.
- Kerzner, Harold. Project management: a systems approach to planning, scheduling and controlling. 10th ed. Hoboken: John Wiley & Sons, 2009. ISBN 9780470278703.
- Stevenson, S.; Whitmore, S. Strategies for engineering communication. New York: John Wiley & Sons, 2002. ISBN 0471128171.