Course guide
220566 - 220566 - Project Management

Last modified: 19/04/2023

Unit in charge: Terrassa School of Industrial, Aerospace and Audiovisual Engineering
Teaching unit: 758 - EPC - Department of Project and Construction Engineering.

Degree: MASTER'S DEGREE IN MANAGEMENT ENGINEERING (Syllabus 2012). (Compulsory subject).

Academic year: 2023 **ECTS Credits:** 7.0 **Languages:** Catalan, Spanish

LECTURER

Coordinating lecturer: VÍCTOR LÓPEZ GRIMAU

Others: BEATRIZ AMANTE GARCÍA

DEGREE COMPETENCES TO WHICH THE SUBJECT CONTRIBUTES

Specific:
1. To analyze the risks and consequences of proposed solutions in the various organizational sub-systems and their social and environmental contexts.
2. Apply quantitative and experimental methods for making decisions in situations where intangibles appear
3. Apply theories and inherent principles in the general direction of an organization with the aim of analyzing uncertainty complex situations and make decisions using engineering tools.
4. Manage activities with relevant content of projects and / or operations that technology and organization have to interact effectively and efficiently
5. Plan, organize, implement, lead and manage engineering projects, especially projects of innovation (R + D + I) and process improvement.

Generical:
6. Ability to apply knowledge to solve problems in new environments or unfamiliar environments within broader contexts (or multidisciplinary) related to engineering.
7. Self-learning capacity to independent continuous training.
8. Ability to effectively communicate their findings, knowledge and concluding reasons to skilled and unskilled audiences, clearly and unambiguously.

TEACHING METHODOLOGY

The course is divided into three parts:

Theory classes
Practical classes
Self-study for doing exercises and activities.

In the theory classes, teachers will introduce the theoretical basis of the concepts, methods and results and illustrate them with examples appropriate to facilitate their understanding.

In the practical classes (in the classroom), teachers guide students in applying theoretical concepts to solve cases / projects / problems, always using critical reasoning. We propose that students solve cases in and outside the classroom, to promote contact and use the basic tools needed to solve problems.

Students, independently, need to work on the materials provided by teachers and the outcomes of the sessions of exercises/problems, in order to fix and assimilate the concepts.
The teachers provide the curriculum and monitoring of activities (by ATENEA).

LEARNING OBJECTIVES OF THE SUBJECT

Project management is the discipline of planning, organizing, securing and managing resources to bring about the successful completion of specific project goals and objectives. The aim of this course is to provide guidelines to address any difficulties successfully and reach goals.

STUDY LOAD

Type	Hours	Percentage
Hours large group	10,0	5.71
Hours small group	30,0	17.14
Self study	112,0	64.00
Guided activities	23,0	13.14

Total learning time: 175 h

CONTENTS

Module 1: Project Management Processes for a Project

Description:
Project Management Processes
Project Management Process groups
Processes interactions
Project Management Process Mapping

Full-or-part-time: 36h 30m
Theory classes: 6h
Practical classes: 7h 30m
Self study : 23h

Module 2: Project Integration Management and Project Time and Scope Management

Description:
- Introduction:
Process Flow Diagrams
Major Project Documents
- Project Integration Management
Develop Project Charter
Develop Preliminary Project Scope Statement
Develop Project Management Plan
Direct and Manage Project Execution
Monitor and Control Project Work
Integrated Change Control
Close Project
- Project Scope Management
Scope Planning
Scope Definition
Create WBS
Scope Verification
Scope Control
- Project Time Management
Activity Definition
Activity Sequencing
Activity Resource Estimating
Activity Duration Estimating
Schedule Development
Schedule Control

Full-or-part-time: 36h 30m
Theory classes: 6h
Laboratory classes: 7h 30m
Self study : 23h

Module 3: Project Cost Management, Project Quality Management, Project Human Resource Management and Project Communication Management

Description:
- Project Cost Management
Cost Estimating
Cost Budgeting
Cost Control
- Project Quality Management
Quality Planning
Perform Quality Assurance
Perform Quality Control
- Project Human Resource Management
Human Resource Planning
Acquire Project Team
Develop Project Team
Manage Project Team
- Project Communication Management
Communications Planning
Information Distribution
Performance Reporting
Manage Stakerolders

Full-or-part-time: 51h 30m
Theory classes: 9h
Laboratory classes: 7h 30m
Guided activities: 2h
Self study : 33h

Module 4: Project Risk Management

Description:
Risk Management Planning
Risk Identification
Qualitative Risk Analysis
Quantitative Risk Analysis
Risk Response Planning
Risk Monitoring And Control

Full-or-part-time: 51h 30m
Theory classes: 9h
Laboratory classes: 7h 30m
Guided activities: 2h
Self study : 33h

GRADING SYSTEM

The final grade depends on the following assessment criteria:

Mid-semester exam 1, weight 20%
Mid-semester exam 2, weight 20%
Tests and questions, weight 10%
Project evaluation: document(s) 25%
Project evaluation: individual work 15%
Prpject evaluation: Oral presentation 10%

All students unable to attend the mid-semester exams, they must attend the final exam. The students failing the mid-semester exams will have the option of repeating them in the final exam.

BIBLIOGRAPHY

Basic:
- A guide to the project management body of knowledge (PMBOK® Guide) [on line]. 6th ed. Newtown Square: Project Management Institute, 2017 [Consultation: 13/05/2022]. Available on: https://ebookcentral-proquest-com.recursos.biblioteca.upc.edu/lib/upcatalunya-ebooks/detail.action?pq-origsite=primo&docID=5180849. ISBN 9781628253900.

Complementary:
- Gómez-Senent Martínez, E. [et al.]. El proyecto y su dirección y gestión: ingeniería de proyectos. Valencia: Universidad Politécnica de Valencia. Servicio de Publicaciones, 1999. ISBN 8477218366.
- Romero López, Carlos. Técnicas de programación y control de proyectos. 3a ed. Madrid: Pirámide, 1988. ISBN 8436801237.
- Cos Castillo, Manuel de. Teoría general del proyecto. Madrid: Síntesis, 1995-1997. ISBN 8477383324; 8477384525.
- Gómez-Senent Martínez, E. El proyecto diseño en ingeniería. Valencia: Universidad Politécnica de Valencia. Servicio de Publicaciones, 1997. ISBN 8477214549.

RESOURCES

Hyperlink:
- Entorn col·laboratiu BSCW. Resource
- ATENEA