

**COURSE: PROJECT MANAGEMENT, QUALITY AND INTELLECTUAL PROPERTY**

**SUBJECT** : Management and innovation

**MODULE**: Applications and technology module

**PROGRAM**: Master's degree in Materials Science and Engineering

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**GENERAL CHARACTERISTICS\***

**Type:** Basic formation, Compulsory, Optional

Master Thesis, External practices

**Duration:** Semester

**Semester / s:** 2

**Number of ECTS credits:** 4

**Languages:** Spanish, Catalan, English

**DESCRIPTION**

**BRIEF DESCRIPTION AND JUSTIFICATION**

**BLOCK I: PROJECT AND QUALITY MANAGEMENT**

In this block, the course introduces the techniques of Project Management in an R & D company. We work from the definition of the strategy and the organization to the techniques to guide the teams towards the defined objectives. The areas of project management and the main planning and control systems are studied. It deals with Project Management in a Quality environment. To this end, a presentation is made of the principles of a Quality Management system and its application to companies. Process management is used for the continuous improvement of the organization.

**BLOCK II: INTELLECTUAL PROPERTY**

In this block, the course gives an overview of the importance of intellectual/industrial property for companies and research centers, to then focus on the operation of the patent system for the protection of technology. The basic concepts that must be taken into account to protect an invention and the implications of patent infringement are given. The legal framework for these aspects will be discussed and examples of what can be patented **in pharmacy and biotechnology will be worked on.**

**COMPETENCES**

- E19 - Have knowledge of tools for the planning, management and follow-up of projects, of the main quality systems, the tools of information management and strategies of intellectual property, for its application in industrial projects based on new materials.
- E20 – Ability to define the different tasks that make up a project, assign the resources/costs for each one, as well as to define what is considered the patentable matter in materials science and engineering.
- T2 - Ability to lead and manage work teams.
- CG2 – The ability to perform a responsible practice of the profession.

\* These features should not be modified without the approval of the bodies responsible for academic higher-level structures (field, module and / or system).

- CB6 - To have and understand the required knowledge that provides the basis or opportunity to be innovative in the development and/or application of ideas, often in a research context.
- CB7 – To apply their knowledge and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.
- CB8 – To integrate knowledge and deal with the complexity of formulating judgments based on information, which, being incomplete or limited, includes reflections on social and ethical responsibilities related to the application of their knowledge and judgments.

### **PREREQUISITES\***

The corresponding to access master studies

### **CONTENTS**

#### **BLOCK I: PROJECT AND QUALITY MANAGEMENT**

##### **PROJECT MANAGEMENT**

1. Introduction: definition of a Project and Project Management.
2. Strategic analysis.
3. Life cycle of a project.
4. Management areas of a project.
5. Systems of planning and control of a project.
6. Organization of the project team.
7. Requirements of the R + D + i projects.

##### **QUALITY MANAGEMENT**

1. Introduction to the concept of Quality.
2. Main Quality Systems.
3. Policy and objectives of Quality.
4. Documentation system
5. Resource management.
6. Evaluation activities.
7. Management by processes and continuous improvement.

#### **BLOCK II: INTELLECTUAL PROPERTY**

1. Importance of intellectual/industrial property (IP) for companies and research centers.
2. Patents rights in the context of IP.
3. Fundamentals of the patent system.
4. Patent databases.
5. What can be patented in chemistry and pharmacy.
6. What can be patented in biotechnology and biomedicine.
7. Scope of the protection and infringement of patents.
8. Technology transfer.

### **METHODOLOGY**

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## LEARNING ACTIVITIES \*

Learning Activities	ECTS credits	Competences
Lectures	0,93	E19, E20, T2, CG2, CB6, CB7, CB8
Seminars	0,07	E19, E20, T2, CG2, CB6, CB7, CB8
Case and Problem-Solving Sessions	0,11	E19, E20, T2, CG2
Personal study	2,67	E19, E20, T2, CG2
Presentations	0,11	E19, E20, T2, CG2
Assessment Tasks (Exams, Continuous Assessment...)	0,11	E19, E20, T2, CG2
<b>TOTAL</b>	<b>3</b>	

## TEACHING METHODOLOGY

- Lectures (possibly including demonstrations) by a professor.
  - Resolution of exercises, approach / resolution of problems and exposition / discussion of cases by a lecturer with the active participation of students.
  - Instruction made by a lecturer with the aim of reviewing, discussing and resolving doubts about the materials and topics presented in the sessions of exposition of concepts and sessions of resolution of exercises, problems and cases.
  - Oral presentation to a lecturer and possibly other students by a student. It can be a work prepared by the student through searches in the published bibliography or a summary of a practical work or project undertaken by said student.
  - Personal work of the student necessary to acquire the competences of each course and to assimilate the knowledge exposed in the lectures and Case and Problem-Solving Sessions, problems and cases, using, when necessary, the recommended bibliography.
  - Assessment Tasks in form of oral/written exams during the academic period or once it has finished.
- Theoretical-practical lectures with computer support.
  - Discussion of documents provided by the teacher.
  - Personalized mentoring

In the course about 30 hours lectures are taught by professors in the classroom. Attendance at these classes represents approximately 40% of the student's dedication to this subject. The classes are developed in a participative way, maintaining a constant dialogue with the

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students. The presentation of the different topics is supported by the discussion and resolution of problems and practical cases.

## ASSESSMENT

### ASSESSMENT METHODS \*

Assessment methods	Weight	Competences
Final exam	40%	E19, E20, CB6, CB7, CB8
Reports and Presentations	30%	E19, E20, T2
Follow-up activities	25%	E19, E20
Participation	5%	CG2

For the qualification of this course, the grades obtained in the activities of the two Blocks are averaged:

Block I - Project and Quality Management

Block II - Intellectual Property

To perform the average of the two Blocks each of the ratings must be at least a grade of 4 out of 10.

### LEARNING OUTCOMES

- The student must demonstrate knowledge of tools for planning, management and monitoring of projects and activities carried out in the field of Materials, in addition to the management of information and basic concepts of the patent system. (E19)
- The student must demonstrate knowledge of the main quality systems and the parts that comprise them. (E19)
- The student must demonstrate their ability to define the different tasks that make up a project, assign the necessary resources for each of them and define the associated costs. (E19)
- The student must demonstrate his ability to define what is considered patentable material in materials science and engineering. (E20)
- The student must demonstrate their ability to integrate into work teams and make the decisions that correspond to them. (T2)
- The student must demonstrate that their ability to use project management tools and laboratories to carry out a responsible practice of the profession (CG2)

### QUALIFICATION

The evaluation of the course will consider all aspects listed in the evaluation table with its corresponding weight. The main weight of the grade lies in the final examination (40%). The Reports and Presentations include classroom presentations and specific monographs that students prepare (30%). Follow-up activities include midterm exams or other deliverables (25%). Participation (5%) includes attitude, attendance and initiative shown by the student in the subject

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**ASSESSMENT OF THE COMPETENCES** (Define calculation expressions for each competency based assessment activities related.)

The grades of the final exam, reports and presentations and follow-up activities will be used as an indicator for the evaluation of E19 and E20 competences.

The grades final exam will be used for the assessment of CB6, CB7 and CB8 competences.

The grade of reports and presentations will be used for the evaluation of the competence T2.

The grade of participation will be used for the evaluation of the competence CG2.

**BIBLIOGRAPHY** (Recommended and accessible to students.)

- Project Management Institute (PMI), "Guía de los Fundamentos de la Dirección de Proyectos (Guía del PMBOK®)", 5ª edición, Global Standard, 2013.
- Norma ISO 21500:2013 "Directrices para la dirección y gestión de proyectos".
- Norma ISO 10006:2003 "Quality management systems - Guidelines for quality management in projects".
- Norma UNE 157001:2014 "Criterios generales para la elaboración formal de los documentos que constituyen un proyecto técnico".
- Norma UNE 166002:2014 "Gestión de la I+D+i. Requisitos del Sistema de Gestión de I+D+i".
- Norma UNE-EN-ISO 9001:2015 "Sistemas de gestión de la calidad. Requisitos"
- Norma UNE-EN-ISO 9000:2015 "Sistemas de gestión de la calidad. Fundamentos y vocabulario"
- P.W. Grubb, "Patents for Chemicals, Pharmaceuticals and Biotechnology", Oxford University Press 2004.
- Guerra, L., "Gestión integral de proyectos", FC Ed.
- Amendola L.J., "Estrategias y tácticas en la dirección y gestión de proyectos.", Univ. Pol. Valencia, UPV Ed., 2006.
- Nokes y Greenwood, "La guía definitiva de la gestión de proyectos", Madrid, 2007
- LEY 11/1986 de 20 de marzo, de patentes de invención y modelos de utilidad.
- Tratado de Cooperación en Materia de Patentes. <http://www.wipo.int/pct/es/>
- European Patent Convention, EPC. <http://www.epo.org/patents/law/legal-texts/epc.html>
- EU Directive (98/44/EC): 'Legal protection of biotechnological inventions'.



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## DOCUMENT HISTORY

### PREVIOUS CHANGES

September 12, 2016, Enric Carbonell, Dra. Judith Báguena

September 4, 2014 Enric Carbonell, Dra. Judith Báguena

### CURRENT REVISION

March 6, 2019, Enric Carbonell, Dra. Judith Báguena