

# Bachelor's Degree in Chemistry

## Subject Guide

### 1. Information about the subject

<b>SUBJECT</b>	Chemical Project Management	<b>CODE</b>	GQUIMI01-3-008
<b>EDUCATIONAL OFFER</b>	Bachelor's Degree in Chemistry	<b>CENTER</b>	Facultad de Química
<b>TYPE</b>	Compulsory	<b>N° TOTAL CREDITS</b>	6.0
<b>PERIOD</b>	First Semester	<b>LANGUAGE</b>	Spanish
<b>COORDINATORS/ES</b>		<b>EMAIL</b>	
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### 2. Context

Project development is not an exclusive task for the greatest architectural or engineering works. Businesses and organizations implement their strategies using projects. Therefore, projects must be managed properly in order to achieve success. A specific training in project management is required to be able to face the problems and situations that arise in the professional world. One must have knowledge of the different stages in a project, from the very beginning (concept and definition of a project) until it finishes, as well as on the most common techniques for project planning, viability and cost estimation

This subject is also focused on providing the students with the capability of working in dynamic professional environments and managing work teams. It

deals with the development of professional skills such as troubleshooting, creativity, team work, information seeking, communication, presentations and public-speaking.

R&D projects are also addressed in this subject. The student will be encouraged to develop and manage such kind of projects, as well as dealing with activities related to technological surveillance or the protection of research findings.

This is a second semester subject, part of the third year core curriculum, more precisely within the “projects” category. The subject is taught by lecturers of the Project Engineering Area. The lectures will be given by José Manuel Mesa and Vicente Rodríguez. For the classroom practices and the tutorial groups a new lecturer will be contracted. Following the guidelines of the Chemistry Deans Committee, this subject prepares the students to develop and sign Chemistry projects and acquire a personal experience on the professional practice.

### 3. Requirements

There are no specific requirements for the student enrolled in this subject, except those general for the module where this subject is included (General Chemistry; Basic Laboratory Operations and Information Technology Tools). This is not a technical course, therefore no more specific knowledge on this matter is required apart from the skills acquired by the students in the mandatory course module. However, students are advised to enroll and pass all previous subjects, since a general and transversal knowledge of the degree will be required.

### 4. Competencies and learning results

Given the cross-cutting nature of this subject, it is therefore oriented towards the acquisition of the following general skills:

CG1	Acquire analytical skills
CG2	Effective problem-solving
CG3	Acquire computer skills related to chemistry
CG4	Build managerial skills

CG5	Develop decision-making abilities
CG6	Properly manage information
CG8	Proper oral and written expression in Spanish
CG9	Autonomous learning
CG12	Environmental awareness
CG14	Encourage initiative and entrepreneurial spirit
CG17	Develop critical thinking
CG18	Team work

And the following specific skills

CE35	Perform calculations and error analyses using physical quantities and units correctly.
CE36	Develop, present and defend scientific reports in written form as well as present them in front of an audience

After successfully completing this subject, the student would have achieved the following learning outcomes:

- Create a project plan since the initial need appears, including the creativity and designing processes, until commissioning.
- Acknowledge and analyze new situations and make strategies to solve them. Any Project is an answer to a need or problem. The key to the success of any project lies on defining and drafting solutions correctly. The student will be able to assess the feasibility of each solution and choose the most suitable one in each case.
- Write and present reports efficiently. Generating documents and reports is quite a relevant activity within project implementation and professional environment, since many agents are involved and therefore the managing of information flow becomes crucial.
- Work with specific computer software. Project planning, budgeting, document management and giving presentations are all activities which are supported by computer software and will be addressed in this course.
- Show knowledge and understanding of facts, concepts, principles and theories related. All projects include a life cycle and a set of concepts which must be understood in order

- to know which activities to develop in each stage.
- Address R+D projects.

## 5. Contents

The contents of this subject are separated into units:

- Unit 1: Concept of project and and life cycle
- Unit 2: Viability studies
- Unit 3: Project planning
- Unit 4: Tools and techniques for project development
- Unit 5: Designing R&D projects
- Unit 6: Professional work skills

## 6. Methodology and working plan

This subject includes lectures, classroom practices and group tutorials. The lectures will teach the students the basic concepts of the subject. The classroom practices put into practice the theoretical knowledge by solving problems applied to specific cases. The student will use computer software related to the subject. For the practical implementation of the different aspects of the subject, there will be group tutorials that emulate the process of designing a project, including all stages, from the initial understanding of the problem until the creative stage of searching and assessing solutions, along with the creation of reports and documents. Presentation skills will also be developed, as well as argumentation skills to support and defend our ideas and solutions. Given the limited time assigned to this task, some of it will be made as part of the ongoing assessment.

	<b>ON-SITE WORK</b>	<b>DISTANCE WORK</b>	
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<b>Units</b>	<b>Hours in total</b>	<i>Lectures</i>	<i>Classroom practice</i>	<i>Lab practice/ language lab etc</i>	<i>Hospital practice</i>	<i>Group tutorials</i>	<i>Internships</i>	<i>Evaluation lessons</i>	<b>Total</b>	<i>Team work</i>	<i>Autonomous work</i>	<b>Total</b>
U1	25	8							8	8	9	17
U2	26	8	3						11	8	7	15
U3	27	8	4						12	8	7	15
U4	25	8				2			10	8	7	15
U5	25	8							8	8	9	17
U6	28	9				2			11	10	7	17
Evaluation	2	2							2			
<b>Total</b>	<b>150</b>	<b>49</b>	<b>7</b>			<b>4</b>			<b>60</b>	<b>50</b>	<b>40</b>	<b>90</b>

APPROACHES		Hours	%	Totals
On-site	Lectures	49	32,7%	60 h.

	Classroom practice		4,7%	
	Lab practice / computer classroom/ language lab	7	4,7%-	
	Hospital practice	-	-	
	Group tutorials	4	2,7%	
	Internships			
	Evaluation sessions	0		
Distance	Group work	50	33,3%	90 h.
	Individual work	40	26,7%	
	Total	150		

## 7. Evaluation of the student's learning results

### January session examination:

Theoretical content will be evaluated by an written exam which includes theoretical questions and other questions to apply that theoretical knowledge. It will also include practical case studies.

There will be an ongoing assessment during the course consisting assesmente of the student's active participation and the answers provided to questions and exercices during the classes.

In addition, the students will be asked to work in groups and design a project. These groups will be organized as if they were work teams. Each group will have a tutor. The outcome will be orally presented and defended in front of an evaluation panel of teachers of the subject, who will assess the overall performance of the group. Each group member will be individually assessed depending on his/her performance and work within the group. The final mark of the group work will equally be made up of the group mark and the individual practice mark. If the student does not pass the individual part,

he/she will be asked to present a complementary work.

In order to pass the subject, each part must be passed with a mark of at least 5 points out of 10. Therefore, the final mark will be the weighted sum of the partial marks.

$$\text{Final mark} = 0,4 \times \text{Practice work} + 0,5 \times \text{written exam} + 0,1 \times \text{ongoing assessment}$$

### **June/July session examination:**

In this session, the previous works of the January examination will be considered. If the group work has not been done, the student will have to do an individual work, which will be the designing of a project according to a topic provided by the teachers. The student must deliver all the documents demanded and defend it in front of a panel of teachers of the subject. The oral defense of this work will be performed at the date and time of the exam.

In order to pass the subject, each part must be passed with a mark of at least 5 points out of 10. Therefore, the final mark will be the weighted sum of the partial marks:

$$\text{Final mark} = 0,4 \times \text{Group work or Individual work} + 0,6 \times \text{theoretical content assessment}$$

## **8. Resources, bibliography and complementary documentation**

Dirección de Proyectos (2 Tomos) De Cos, Edit síntesis

Técnicas de Programación y Control de Proyectos, C.Romero, Edit Pirámide, 1988.

Dirección y Gestión de Proyectos: Un enfoque práctico, Alberto Domingo Ajenjo, Edit Ra-ma, 2000

