COURSE DATA

DATA SUBJECT

Code: 34210
Name: Chemistry Projects
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
1110 - Degree in Chemistry	Facultat de Química	4	First quarter
1929 - Double Degree Program in Physics and Chemistry	Facultat de Química	5	First quarter

SUBJECT-MATTER

Degree	Subject-matter	Character
1110 - Degree in Chemistry	Chemical Industry	COMPULSORY
1929 - Double Degree Program in Physics and Chemistry	Quinto Curso (Obligatorio)	COMPULSORY

COORDINATION

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SUMMARY

The general objective of the subject is for students to acquire the ability to apply all the knowledge previously acquired in the degree appropriately to the preparation, development and evaluation of projects and technical reports in the field of chemical sciences, applying the appropriate methodology and the basic principles of management, economics, auditing and business organisation.
To achieve this general objective, the subject has the following specific objectives:

- Understand the general theory of project management, as well as its justification compared with process-based management within an organisation.
- Understand the relationship between the technical aspects of a project and the strategic plan of an organisation.
- Understand the different types and phases of a project's life cycle.
- Understand project planning and control techniques.
- Understand project feasibility analysis techniques.
- Understand the techniques used for the economic evaluation of projects.
- Understand the context of project management from the perspectives of risk and quality.

- Understand the characteristics that project or technical report documentation should have, as well as its presentation and defence.

From a teaching perspective, the subject has a fundamentally practical approach, as it focuses on the development of practical skills that students will use in their professional careers as project managers or as members of a project team. Upon achieving the stated objectives, students should have acquired a range of skills related to the management of both material and human resources during the planning, execution and control phases of any project within their field of expertise.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

Due to the general nature of this course, no specific prior knowledge is required. However, it is recommended that students will first have completed Computer Applications in Chemistry and Chemical Engineering to gain a perception of the more industrial aspects of Chemical Sciences.

COMPETENCES / LEARNING OUTCOMES

1108 -

Demonstrate ability to communicate information, ideas, problems and solutions to both specialist and non-specialist audiences and using information technology, as appropriate.

Demonstrate ability to work in teams both in interdisciplinary teams and in an international context.

Demonstrate a commitment to ethics, equality values and social responsibility as a citizen and as a professional.

Demonstrate leadership and management skills, entrepreneurship, initiative, creativity, organization, planning, control, leadership, decision making and negotiation.

Demonstrate the ability to adapt to new situations.

Express oneself correctly, both orally and in writing, in any of the official languages of the Valencian Community.

Prepare reports, surveys and industrial and environmental projects in the field of chemistry.

Recognise and analyse new problems and plan strategies to solve them.

Relate chemistry with other disciplines.

Students must be able to communicate information, ideas, problems and solutions to both expert and lay audiences.

Students must have developed the learning skills needed to undertake further study with a high degree of autonomy.

Students must have the ability to gather and interpret relevant data (usually in their field of study) to make judgements that take relevant social, scientific or ethical issues into consideration.

1110 - Degree in Chemistry

Act autonomously in learning, making informed decisions in different contexts, forming judgements based on experimentation and analysis, and transferring knowledge to new situations.

At the end of the course, the student will be able to address new problems and develop strategies to solve them.

At the end of the course, the student will be able to apply metrology in chemical processes, including quality management.

At the end of the course, the student will be able to assess risks in the use of chemical substances and laboratory procedures.

At the end of the course, the student will be able to identify chemical elements and compounds, including their production, structure, reactivity, properties and applications.

At the end of the course, the student will be able to identify chemical processes in everyday life.

At the end of the course, the student will be able to identify the unit operations of chemical engineering.

At the end of the course, the student will be able to implement sustainable and environmentally friendly methodologies.

At the end of the course, the student will be able to prepare reports, expert assessments and industrial and environmental projects in the field of chemistry.

At the end of the course, the student will be able to relate theory and experimentation.

At the end of the course, the student will interpret the relationship between the variation of the characteristic properties of chemical elements and the periodic table.

At the end of the course, the student will relate chemistry to other disciplines.

Collaborate effectively in teams, assuming responsibilities and leadership roles and contributing to collective improvement and development.

Communicate effectively, both orally and in writing, adapting to the characteristics of the situation and the audience.

Comprender la empresa como una realidad sistémica e inherentemente compleja, reconociendo e identificando las dimensiones consustanciales a los sistemas de gestión empresarial y los condicionantes, externos e internos, que inciden sobre su gestión.
Ser capaces de categorizar y jerarquizar las decisiones organizativas, e interpretar los procesos de adopción de decisiones en el ámbito de los modelos teóricos. Discriminar y manejar los principales

métodos y técnicas disponibles para la elaboración del diagnóstico estratégico. Poder elaborar un diagnóstico estratégico básico.

Comprender las particularidades contables que presenta la regulación jurídico-mercantil de las empresas, relacionando la legislación mercantil aplicable a los distintos tipos operaciones societarias con la contabilidad de los hechos económicos que se regulan. Aprender a relacionar las leyes mercantiles que se ocupan de los concursos de acreedores con la contabilidad, adquiriendo práctica en el manejo de determinados textos legales vigentes.

Contribute to the design, development and implementation of solutions that address social needs, taking the Sustainable Development Goals as a reference.

Demonstrate critical and self-critical reasoning within the field of study, considering aspects such as professional ethics, moral values and the social implications of the different activities undertaken.

Express oneself correctly, both orally and in writing, in any of the official languages of the Valencian Community.

Propose creative and innovative solutions to complex situations or problems within the field of study, in order to respond to diverse professional and social needs.

Ser capaces de analizar la influencia que sobre el diseño del sistema de información de costes, ejercen, tanto la actividad concreta desarrollada por la entidad como la tecnología utilizada, la estructura organizativa y el estilo de dirección. Calcular costes preestablecidos y relacionarlos con la planificación y el control de la actividad interna. Seleccionar aquellos indicadores de gestión que faciliten el desempeño personal, estableciendo la frecuencia y el formato en función del usuario de destino.

Ser capaces de configurar y manejar un sistema integrado para la gestión contable de la empresa. Utilizar la hoja de cálculo como herramienta de análisis de la información económica de la empresa. Saber aplicar programas de apoyo a tareas específicas de gestión.

Understand and recognise, from within the discipline, inequalities based on sex and gender in society; integrate different needs and preferences related to sex and gender into problem-solving and solution design.

DESCRIPTION OF CONTENTS

1. Introduction to project management.
2. Scope management.
3. Time management.
4. Cost and financial management.
5. Quality management.
6. Human resource management.
7. Risk management.
8. Project integration management.

WORKLOAD

PRESENCIAL ACTIVITIES

Activity	Hours
Tutorials	7,00
Theory	41,00
Computer classroom practice	12,00
Total hours	**60,00**

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	0,00
Individual or group project	25,00
Independent study and work	15,00
Preparation of lessons	25,00
Preparation for assessment activities	15,00
Resolution of case studies	10,00
Total hours	**90,00**

TEACHING METHODOLOGY

The course is structured around three types of sessions: theory and problem-solving classes, group tutorial sessions, and practical sessions in the computer laboratory.

- In the theory classes, the lecture format will be used. The lecturer will present and/or explain the content of each topic, emphasising the key aspects for understanding. The problem-solving classes will follow two approaches. In some sessions, the lecturer will solve a series of standard problems so that students learn to identify the essential elements of their formulation and solution. In others, students will solve similar problems under the lecturer's supervision.
- In the group tutorial sessions, students will work in teams to develop a complete project within their field of study, covering all its stages, from its definition and planning to the preparation of the required documentation and its oral presentation.
- The practical sessions in the computer laboratory will begin with activities focused on learning and using project management tools, followed by the development of a project planning and monitoring case study. Based on a previously defined project and under the supervision of the laboratory lecturer, students will analyse and complete its schedule and budget, and subsequently carry out a progress review of its implementation.

EVALUATION

The knowledge acquired by students in the course will be assessed through a continuous assessment system, in which their engagement and performance will be evaluated through the following activities:
a) Individual theoretical and practical examination (TE): assessment of the content covered in the theory lectures and problem-solving sessions (EVAL 3).
b) Group project (GP): assessment of the documentation produced for the project developed during the group tutorial sessions, as well as its oral presentation (EVAL 4). This activity will be recoverable.
c) Project planning and monitoring case study (CS): assessment of the documentation produced for the

case study carried out during the computer laboratory sessions (EVAL 5). This activity will be recoverable.
d) Individual computer laboratory examination (LE): assessment of the content covered in the computer laboratory lectures and practical sessions (EVAL 2).
To pass the course, students must obtain a minimum mark of 5 out of 10 in each of the above assessment activities. If this requirement is met, the final course grade will be calculated as the weighted average of the different assessment activities according to the following equation:
Final grade = 50% TE + 30% GP + 15% CS + 5% LE
If this requirement is not met, the final course grade will correspond to the lowest mark obtained in any of the assessment activities.

General considerations

In addition to the aforementioned activities, the course also includes attendance at a conference related to the topics covered in the subject. This conference will be scheduled during the teaching period and attendance will be compulsory in order to pass the course.
In all cases, the assessment system will be governed by the provisions established in the *Reglament d'Avaluació i Qualificació de la Universitat de València per a Títols de Grau i Màster* (ACGUV 108/2017).

REFERENCES

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- CABRA, L., DE LUCAS A., RUIZ, F. y RAMON M.J, Metodologías del diseño aplicado y gestión de proyectos para ingenieros químicos. Ediciones de la Universidad de Castilla La Mancha. 2010. ISBN:9788484277583
- GIMENEZ, A. Diseño de Procesos en Ingeniería Química. Editorial Reverte. 2003: 8429172777
- PEREÑA, J. Dirección y Gestión de Proyectos. Editorial Díaz de Santos (1991). ISBN: 8479782498
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- GOMEZ, J. F y CORONEL, A.J; MARTINEZ DE IRUJO y LORENTE, A. Gestión de proyectos. FC Editorial. Madrid, (2000). ISBN: 84-28317747.