COURSE DATA

DATA SUBJECT

Code: 34210
Name: Chemistry Projects
Cycle: Undergraduate Studies
ECTS Credits: 6
Academic year: 2025-26

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 Física	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 obtain the ability to properly apply all the knowledge previously acquired in the degree to the elaboration, 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 organization.

To achieve this general objective, the subject presents the following partial objectives:

- Know the general theory of project management, as well as its justification in the face of procedural management within an organization.
- Know the existing relationship between the technical aspects of a project and the strategic plan

of an organization.
- Know the different types and phases of a project's life cycle.
- Know the techniques of project planning and control.
- Know the techniques of project viability.
- Know the techniques of economic evaluation of projects.
- Know the context of project management from the perspective of risk and quality.
- Know the characteristics that the documentation of a project or technical report should have, as well as its presentation and defense.

From the teaching point of view, the subject has a fundamentally practical approach, as it is focused on the development of practical skills that the student must use in his professional development as a project manager, or forming part of a project team. With the achievement of the stated objectives, the student must have acquired a series of skills related to the management, both of material and human resources, in the phases of planning, execution, and control of any project within his scope of knowledge.

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

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Act autonomously in learning, making well-founded decisions in various contexts, forming judgements based on experimentation and analysis, and applying knowledge to new situations.

Address new problems and propose strategies to solve them.

Apply metrology in chemical processes, including quality management.

Collaborate effectively in work teams, assume responsibilities and leadership roles, and contribute to collective improvement and development.

Communicate effectively both orally and in writing, adapting to the context and 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 respond to social demands, using the Sustainable Development Goals as a reference.

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 critical and self-critical thinking, considering professional ethics, moral values and social implications of the different activities carried out throughout the degree.

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

Demonstrate the ability to adapt to new situations.

Evaluate the risks involved in the use of chemical substances and laboratory procedures.

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

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

Identify chemical elements and their compounds, including their extraction, structure, reactivity, properties and applications.

Identify chemical processes in everyday life.

Identify the unit operations of chemical engineering.

Implement sustainable and environmentally friendly methodologies.

Interpret the relationship between the variation in the characteristic properties of chemical elements and the Periodic Table.

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

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

Propose creative and innovative solutions to complex situations or problems in the field, addressing diverse professional and social needs.

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

Relate chemistry to other disciplines.

Relate chemistry with other disciplines.

Relate theory to experimentation.

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.

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.

Understand and analyse, from the perspective of the degree programme, social inequalities based on sex and gender; integrate gender-sensitive approaches into problem-solving and solution design.

DESCRIPTION OF CONTENTS

1.Introduction to project management

2.Scope management

3.Time management

4.Cost management 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 tutoring sessions, and computer lab practice.

- The theory classes will follow the lecture model. The professor will present and/or explain the content of each topic, emphasizing key aspects for understanding. Problem-solving classes will follow two models. In some, the professor will solve a series of standard problems so that students can learn to identify the essential elements of their approach and solution, while in others, students will solve similar problems under the professor's supervision.
- In group tutoring sessions students will form work teams to develop a complete project in their field of knowledge, developing all its stages: from its definition and planning to the preparation of the necessary documentation and its oral presentation.
- The practical sessions in the computer laboratory will first involve activities focused on learning and using project management tools, followed by a case study of project planning and monitoring. In this case study, based on a previously defined project and under the supervision of the laboratory professor, students will analyze and complete its schedule and financial planning, and then conduct a follow-up review of its execution status.

EVALUATION

The knowledge acquired by the student in the course will be evaluated through a continuous evaluation system, where the involvement and performance shown by the student in the following activities will be assessed:

a) Individual objective test of theoretical-practical nature (TE): where the contents taught in the theory and problems master sessions will be evaluated (EVAL 3).

b) Group project (GP): where the documentation generated for the project prepared in the group tutoring sessions will be evaluated, as well as its oral presentation (EVAL 4). This activity will be considered recoverable.

c) Case study of planning and monitoring a project (CS): where the documentation generated for the case study prepared in the computer laboratory sessions will be evaluated (EVAL 5). This activity will be considered recoverable.

d) Individual objective test of computer laboratory (LE): where the contents taught in the computer laboratory master and practical sessions will be evaluated (EVAL 2).

To pass the course it will be necessary to have achieved a minimum grade of 5 points out of 10 in each of the previous activities, obtaining in this case the overall grade of the course as the weighted average of the previous activities, according to the following equation:

Overall grade = 50 % TE + 30 % GP + 15 % CS + 5 % LE

In case the previous requirement is not met, the overall grade of the course will correspond to the lower of the grades achieved in the previous activities.

General considerations

Apart from the aforementioned activities, the course also includes the participation of students in a conference related to the subjects taught. This conference will be scheduled throughout the course during school hours, and attendance will be compulsory to pass the course.

In any case, the evaluation system will always 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).

Final warning

Copying or plagiarism of any assignment that is part of the evaluation will make it impossible to pass the course, and the student will be subject to the appropriate disciplinary procedures.

Please note that, according to Article 13 d) of the University Student Statute (RD 1791/2010, December 30), "*it is the duty of a student to refrain from using or cooperating in fraudulent procedures in evaluation tests, in the work performed or in official University documents*".

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
- GRASHINA M.N y NEWELL M.W, Preguntas y Respuestas Sobre La Gestión de Proyectos, Editorial Gestión 2000, (2005). ISBN: 9788480886864

- GOMEZ, J. F y CORONEL, A.J; MARTINEZ DE IRUJO y LORENTE, A. Gestión de proyectos. FC Editorial. Madrid, (2000). ISBN: 84-28317747.