



IDENTIFYING DATA

Project

Subject	Project			
Code	V11G201V01401			
Study programme	Grado en Química			
Descriptors	ECTS Credits	Choose	Year	Quadmester
	6	Mandatory	4th	1st
Teaching language	Spanish Galician			
Department				
Coordinator	Gómez Costas, Elena			
Lecturers	Gómez Costas, Elena González de Prado, Begoña			
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Web	http://https://moovi.uvigo.gal/			
General description	<p>This subject, from the fourth year of the Chemistry Degree, has as main objective to introduce the student to the methodology, direction, management and organization of projects in the field of Chemistry. With the knowledge acquired in Chemistry, Chemical Engineering and other related subjects, the student must be able to develop a project in Chemistry. At the end of the course, the student must be able to write, plan, execute and direct industrial projects in the field of Chemistry. As a subject of the English Friendly program, international students may request from the teacher: a) materials and bibliographical references to follow the subject in English, b) attend tutorials in English, c) tests and evaluations in English.</p>			

Training and Learning Results

Code	
A1	Students can apply their knowledge and understanding in a manner that indicates a professional approach to their work or vocation, and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study
A4	Students can communicate information, ideas, problems and solutions to both specialist and non-specialist audiences
B3	Ability to manage information
C4	Use computer tools properly to obtain information, process data, perform computational calculations and calculate matter properties
C5	Present material and scientific arguments in oral and written form to a specialized audience
D2	Capacity for teamwork
D3	Ability to communicate in both oral and written form in Spanish and / or Galician and / or English

Expected results from this subject

Expected results from this subject	Training and Learning Results			
Evaluate the feasibility of carrying out a project related to the competencies of a chemist.	A1 A4	B3	C4	D2
Organise, manage and develop a project in Chemistry	A1 A4		C5	D3
Evaluate the potential impact (environmental, socioeconomic) of a project.	A1 A4		C4	D3
Elaborate structured technical reports and present them using appropriate audiovisual means.	A1	B3		D3

Contents

Topic	
Subject 1. The projects in chemistry	Professional competitions of the chemists. Definition and aims and classification. Stages and organisation. Legal appearances

Subject 2. Design of a project	Analysis of the sector. Study of market. Size of the project. Location.
Subject 3. Engineering of the project	Diagrams of flow. Calculations and balances. Equipment.
Subject 4. Economic evaluation of a project	Investment and costs. Profitability. Analysis of risk.
Subject 5. Environmental evaluation of a project	Pollution. Preventive measures and/or of correction. Waste. Cycle of Life.
Subject 6. Documentation of a project	Memory. Planes. I fold of conditions. Methods. Norms.

Planning

	Class hours	Hours outside the classroom	Total hours
Lecturing	12	17	29
Seminars	28	39	67
Essay questions exam	2	0	2
Objective questions exam	0	2	2
Project	0	50	50

*The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.

Methodologies

	Description
Lecturing	Exhibition by part of the professor of the most fundamental appearances of each subject, taking like base the available documentation in the platform Moovi. The students will be able to work, before each session, the material that provides him the professor related with the content that will treat in each subject.
Seminars	The students, with the support of the professor, will make the design and development of some concrete projects of chemistry that will form part of the evaluation of the subject, and resolution of practical cases related with the matter.

Personalized assistance

Methodologies	Description
Lecturing	It will resolve him to the student any doubt related with the contents, problems or the project of face-to-face form (previous appointment by email), or of virtual form, according to preference of the student.
Seminars	It will resolve him to the student any doubt related with the contents, problems or the project of face-to-face form (previous appointment by email), or of virtual form, according to preference of the student.
Tests	Description
Objective questions exam	It will resolve him to the student any doubt related with the contents, problems or the project of face-to-face form (previous appointment by email), or of virtual form, according to preference of the student.
Essay questions exam	It will resolve him to the student any doubt related with the contents, problems or the project of face-to-face form (previous appointment by email), or of virtual form, according to preference of the student.
Project	It will resolve him to the student any doubt related with the contents, problems or the project of face-to-face form (previous appointment by email), or of virtual form, according to preference of the student.

Assessment

Description	Qualification Training and Learning Results

Essay questions exam	It will make a long proof of all the matter	30	D3
Objective questions exam	They will make four proofs the long of the course. Said proofs will consist in one splits type test and in another part of resolution of practical cases. The first when finalising the two first subjects, the second of the subject 4, the third of the subject 5 and the last when finalising the subject 6. The length of the same will be between 1 hour and 2 hours.	40	D3
Project	The student will make the approach and development of a concrete project of chemistry, and east will be evaluated so much by his oral exhibition as by his presentation written.	30	

Other comments on the Evaluation

FIRST ANNOUNCEMENT

To surpass the subject is compulsory to obtain like minimum 40% of the calification assigned to the project and to the final examination.

The participation of the student in any one of the proofs written or the delivery of n work to involve the condiction of presented and therefore the asignation of calification

SECOND ANNOUNCEMENT

For the second announcement keep the qualifications of evaluation continuous (so much of the 4 proofs of questions written as of the work) obtained along the course, always that these were equal or upper to 4. The student will present to the no surpassed parts previously.

Commitment etic

It expects that the present student a behaviour etic suitable. In case to detect a behaviour no etic (copy, plagiarism, use of devices electronics unauthorised, for example), there are that the student have not the necessary requirements to surpass the matter.

Sources of information

Basic Bibliography

J. Frank Valle-Riestra, **Project evaluation in the chemical process industries**, McGraw-Hill, 1983

Manuel de Cos Castillo, **Teoría General del Proyecto**, Editorial Síntesis, 1997

H.F. Rase y M.H. Barrow, **Ingeniería de proyectos para plantas de procesos**, CECSA, 1977

Complementary Bibliography

Luis Cabra, Antonio de Lucas, Fernando Ruiz y María Jesús Ramos, **Metodologías del diseño aplicado y gestión de proyectos para ingenieros químicos**, Ediciones de la Universidad de Castilla-La Mancha., 2010

Arturo Jimenez Gutiérrez, **Diseño de procesos en ingeniería química.**, Editorial Reverté, 2003

Nassir Sapag Chain, Reinaldo Sapag Chain., **Preparación y evaluación de proyectos.**, Mc-Graw-Hill., 2000

J.M. Smith, H.C. Van Ness, M.M. Abbott., **Introducción a la termodinámica en Ingeniería Química.**, Mc Graw-Hill., 2007

A. Vian., **El pronóstico económico en química industrial.**, Alhambra., 1975

Eliseo Gómez, Domingo Gómez, Pablo Aragonés, Miguel Angel Sanchez, Domingo López., **Cuadernos de Ingeniería de Proyectos I.**, Universidad Politécnica de Valencia., 1997

Recommendations

Subjects that it is recommended to have taken before

Chemical engineering/V11G201V01301