UNIVERSIDADE DA CORUÑA

Teaching Guide				
Identifying Data				2017/18
Subject (*)	Chemical Technology		Code	730G04051
Study programme	Grao en enxeñaría en Tecnoloxías Industriais			
Descriptors				
Cycle	Period	Year	Type	Credits
Graduate	1st four-month period	Third	Obligatoria	6
Language	SpanishGalician			
Teaching method	Face-to-face			
Prerequisites				
Department	Enxeñaría Naval e IndustrialQuímica			
Coordinador	Filgueira Vizoso, Almudena	E-mail	almudena.filgueira.vizoso@udc.es	
Lecturers	Filgueira Vizoso, Almudena	E-mail	almudena.filgueira.vizoso@udc.es	
Web				
General description	In this subject students are shown physical separation systems, transfer operations, physical separation systems as well as transfer operations, all applied to industrial chemical processes. Know and design the equipment needed for solid-gas separation To understand the storage possibilities and the problems of the same			

Study programme competences / results	
Code	Study programme competences / results
A26	Coñecementos sobre balances de materia e enerxía, biotecnoloxía, transferencia de materia, operacións de separación, enxeñaría da reacción química, deseño de reactores e valorización e transformación de materias primas e recursos energéticos.
B4	Que os estudantes poidan transmitir información, ideas, problemas e solucións a un público tanto especializado como leigo
B6	Ser capaz de concibir, deseñar ou poñer en práctica e adoptar un proceso substancial de investigación con rigor científico para resolver calquera problema formulado, así como de comunicar as súas conclusións ?e os coñecementos e razóns últimas que as sustentan? a un público tanto especializados como leigo dun xeito claro e sen ambigüidades
B7	Ser capaz de realizar unha análise crítica, avaliación e síntese de ideas novas e complexas
B8	Deseñar e realizar investigacións en ámbitos novos ou pouco coñecidos, con aplicación de técnicas de investigación (con metodoloxías tanto cuantitativas como cualitativas) en distintos contextos (ámbito público ou privado, con equipos homoxéneos ou multidisciplinares etc.) para identificar problemas e necesidades
C3	Entender a importancia da cultura emprendedora e coñecer os medios ao alcance das persoas emprendedoras.
C4	Valorar criticamente o coñecemento, a tecnoloxía e a información dispoñible para resolver os problemas cos que deben enfrontarse.
C6	Valorar a importancia que ten a investigación, a innovación e o desenvolvemento tecnolóxico no avance socioeconómico e cultural da sociedade.

Learning outcomes			
Learning outcomes	Study programme competences / results		
Know the physical separation systems as well as the transfer operations applied to the Industrial chemical processes. To know and design the equipment necessary for the development of the Solid-gas separation. Understand storage possibilities and associated issues.	A26	B4 B6 B7 B8	C3 C4 C6

Contents	
Topic	Sub-topic

Blocks or topics to develop the levels laid down in the verification of memory tab	Auxiliary services in industries: introduction to chemical technology, materials protection, water, gas distribution networks. Operations handling: storage of fluids, flow of fluids, measuring and pumping of fluids, piping and accessories, operations with solids. Separation operations: introduction to systems solid, separation (sedimentation and flotation) solid-liquid, solid-liquid separation (filtration and centrifugation), separation of solids and liquids into gases. Transfer operations: solid-liquid extraction, extraction liquidoliquido; Distillation, absorption, adsorption and ion exchange.
AUXILIARY SERVICES IN INDUSTRIES	Introduction to chemical technology Water distribution networks Gases Protection of materials
HANDLING OPERATIONS	Fluid storage Fluid flow Measuring and pumping fluids Pipes and fittings Operations with solids
SEPARATION OPERATIONS	Introduction to solid-fluid systems Solid-liquid separation: sedimentation, flotation, filtration and centrifugation Separation of solids and liquids into gases
MATERIAL TRANSFER OPERATIONS	 Solid-liquid extraction Liquid-liquid extraction Distillation Absorption Adsorption and ion exchange

Planning				
Methodologies / tests	Competencies / Results	Teaching hours (in-person & virtual)	Student?s personal work hours	Total hours
Supervised projects	A26 B6 B7 B8 C3 C4 C6	8	40	48
Oral presentation	B4	2.5	5	7.5
Problem solving	A26 B6	0.5	0.5	1
Objective test	A26 B6 B7 B8	4	40	44
Field trip	C4	4	0.8	4.8
Guest lecture / keynote speech	A26	24	12	36
Personalized attention		8.7	0	8.7
(*)The information in the planning table is for guidance only and does not take into account the heterogeneity of the students.				

Methodologies	
Methodologies	Description
Supervised projects	It is an option based on the resolution by the students of the responsibility for their own learning. This teaching system is based on two basic elements: the independent learning of the students and the monitoring of this learning by the teacher-tutor
Oral presentation	All students will present the work done during the course in the time allocated to them and in front of their classmates.
Problem solving	Technique by means of which a specific problematic situation has to be solved, based on the knowledge that has been worked, that can have more than one possible solution
Objective test	Written test used to evaluate learning. You can combine different types of questions: multiple-choice questions, problems, etc.

Field trip	Activities developed in a context external to the university academic environment (companies, Institutions, agencies, monuments, etc.) related to the field of study of the subject.
Guest lecture / keynote speech	Oral presentation complemented by the use of audiovisual media in order to transmit knowledge and facilitate learning.

Personalized attention	
Methodologies	**Description**
Problem solving Objective test Oral presentation Guest lecture / keynote speech Supervised projects Field trip	The students will be taken care of in the indicated tutoring hours.

Assessment			
Methodologies	**Competencies / Results**	**Description**	**Qualification**
Problem solving	A26 B6	Different activities that the student must resolve and give teachers will take place along the course.	5
Objective test	A26 B6 B7 B8	It consists in the realization of the corresponding midterms and/or final exam.	65
Oral presentation	B4	The work done during the course must be presented by the authors on dates deemed appropriate by the faculty. Works will be preferably in groups, and all the members of each of the groups will have to present orally the obtained results	15
Supervised projects	A26 B6 B7 B8 C3 C4 C6	Protected works will be carried out by the students with the help of teachers of the subject. These works must provide to teachers both in paper format by email or platform designated by the faculty.	15

Assessment comments
It is necessary to take a minimum of 3.5 in the partial exams (if any) and an average of 4 to count the other methodologies.In case of not being able to perform any of the above mentioned methodologies the evaluation of the same Will pass to the objective test. Attendance at more than 90% of scheduled sessions will be mandatory. In case the field exits are made, they will be obligatory to surpass the subject.

Sources of information	
Basic	- J.M.Coulson (). Ingeniería química. - Andrés Arévalo (). Tecnología química. - Ángel Vian Ortuño (). Introducción a la química industrial. - Eugenio Muñoz Camacho (). Ingeniería química. Apuntes de clase e traballosApuntes de clase e traballos
Complementary	

Recommendations
Subjects that it is recommended to have taken before
QUÍMICA/730G04005
Subjects that are recommended to be taken simultaneously
Subjects that continue the syllabus
Other comments

(*)The teaching guide is the document in which the URV publishes the information about all its courses. It is a public document and cannot be modified. Only in exceptional cases can it be revised by the competent agent or duly revised so that it is in line with current legislation.