

Academic Year/course: 2021/22

29925 - Separation Processes

Syllabus Information

Academic Year: 2021/22

Subject: 29925 - Separation Processes

Faculty / School: 110 - Escuela de Ingeniería y Arquitectura

Degree: 330 - Complementos de formación Máster/Doctorado

435 - Bachelor's Degree in Chemical Engineering

ECTS: 6.0

Year: 435 - Bachelor's Degree in Chemical Engineering: 3

330 - Complementos de formación Máster/Doctorado: XX

Semester: Second semester

Subject Type: 435 - Compulsory

330 - ENG/Complementos de Formación

Module:

1. General information

2. Learning goals

3. Assessment (1st and 2nd call)

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards the achievement of the learning objectives. A wide range of teaching and learning tasks are implemented, such as lectures, practice sessions, assignments, autonomous work, and tutorials. Most of tasks are based on participation and the active role of the student promoting the development of engineering skills.

4.2. Learning tasks

The program to achieve the expected results includes the following learning tasks:

Lectures (40 h). The teacher explains the course contents and solves some representative applied problems. Regular attendance is highly recommended

Practice sessions (20 h). Exercises supervised by the professor will be solved by the students. Problems will be related to the theoretical part explained in lectures.

Assignments in groups (27 hours). Preferably groups of two people will be formed and along the semester four activities will be proposed. The teacher will supervise and evaluate the deliverables so there is a feedback to the student.

Autonomous work (60 hours). Students are expected to spend about 60 hours to study theory and solve problems.

Final Assessment (3 h). A global test will be performed where the theoretical and practical knowledge acquired by the student will be evaluated.

4.3. Syllabus

The course will address the following topics:

Topic 1. Introduction to Separation Processes

Topic 2. Contact between phases
 Topic 3. Distillation
 Topic 4. Absorption
 Topic 5. Liquid-liquid extraction
 Topic 6. Leaching
 Topic 7. Adsorption
 Topic 8. Membrane processes

4.4. Course planning and calendar

The following table shows an approximate schedule of topics in terms of hours of lectures and practice sessions. It also indicates approximately when students would be proposed the deliverables and the time that must be dedicated to these activities and their personal work. It indicated when approximately tutored sessions should take place.

Topic	Lectures + practice sessions	Deliverables (Del.) and Tutoring (T)	Autonomous work
1. Introduction	2 h + 0 h		2 h
2. Contact between phases	6 h + 4 h	Del. 1 (5 h), T1	10 h
3. Distillation	12 h + 6 h	Del. 2 (12 h), T2	18 h
4. Absorption	5 h + 3 h	Del. 3 (5 h), T3	8 h
5. Liquid-liquid extraction	5 h + 3 h	Del. 4 (5 h), T4	8 h
6. Leaching	4 h + 3 h		7 h
7. Adsorption	3 h + 1 h		4 h
8. Membrane processes	3 h + 0 h		3 h
Total	40 h + 20 h	27 h	60 h

Further information concerning the timetable, classroom, office hours, assessment dates and other details regarding this course will be provided on the first day of class, or please refer to the EINA website (<http://eina.unizar.es>).

4.5. Bibliography and recommended resources

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=29925>