

G787 ADVANCED SEPARATION PROCESSES

DESCRIPTION

This is an elective course which is offered in the second semester of the 4th year of the Chemical Engineering Degree. The subject consists of 6 ECTS divided in two different parts: i) theoretical contents (3 ECTS) and ii) practical sessions in a Chemical Engineering lab (3 ECTS). The main objective of the subject is to describe the fundamentals, design criteria and current applications of rate-controlled separation processes based on the use of membranes and particles. The theoretical sessions are focused on fundamentals and applications of different membrane-based separation processes (ultrafiltration, reverse osmosis, electrodialysis, pervaporation, gas permeation, etc.) and solid-fluid separation processes mainly adsorption and ion-exchange. The practical sessions aim at the design of a waste water treatment process for the reclamation and reuse of a secondary effluent of a Waste Water Treatment Plant to feed industrial steam boilers