- Course title: **Chemical Engineering II**.
- Course code: 5292
- Type of course: compulsory
- Level of course: fundamental
- Year of study: 3
- Semester: 2
- Number of credits allocated: 6
- Name of lecturer: Jose Luis Cabezas.
- Objective of the course: To acquire the knowledge needed for the calculation and design of the most representative unit operations present in chemical industries. To be able to make a mathematical description of the design and operation of chemical reactors. To gain skills in critical thinking and problem solving in order to recognize the importance of planning, development and control of chemical processes through Chemical Engineering.
- Prerequisites: It is recommended that students should have attended Mathematics I and Mathematics II before following this course.
- Course contents: Fundamentals of mass transfer. Mass transfer unit operations. Gas absorption. Distillation and rectification. Humidification. Solvent extraction. Drying. Adsorption and ionic exchange. Membrane separation processes. Chemical reaction engineering. Design of chemical reactors. Bioreactors.
- Recommended reading:
  - McCabe, W.L.; Smith, J.C.; Harriott, P., "Unit Operations of Chemical Engineering", 7th Ed., McGraw-Hill, USA (2004).
  - Treybal, R.E., "Mass Transfer Operations", 3rd Ed., McGraw-Hill, USA (1980).
  - Fogler, H.S., "Elements of Chemical Reaction Engineering", 4th Ed., Prentice Hall, New Jersey (2005).
  - Levenspiel, O., "Chemical Reaction Engineering", 3rd Ed., Wiley, New Jersey (1998).
  - Geankoplis, C. J., "Transport Processes and Unit Operations", 3rd Ed., Prentice Hall, New York (1993)
  - Coulson, J.M.; Richardson, J.F.; Backhurst, J.R.; Harker, J.H., "Chemical Engineering" (Volumes 1-6), Butterworth-Heinemann, Oxford (2000).
- Teaching methods:
  - Lectures: teachers explain the contents of the lessons.
  - Seminars: students and teacher discuss the problems and other points raised in class.
  - Practicals: students apply their knowledge to solve laboratory experiments.
- Assessment methods:
  - Continuous evaluation of theoretical-practical sessions: 40%
  - Group and individual work: 10%
  - Written work and exams: 50%
- Language of instruction: Spanish and/or English