- Course title: **Physical Chemistry Laboratory**.
- Course code: 5284
- Type of course: compulsory
- Level of course: fundamental
- Year of study: 3
- Semester: 1
- Number of credits allocated: 4.5
- Names of lecturers: Ana Marta Navarro and Francisco Javier Hoyuelos.
- Objective of the course:
  - To apply from an experimental point of view the principles of thermodynamic and kinetic chemistry.
  - To interpret information correctly that is taken from laboratory observations and measurements.
  - To develop the capacity to understand the basic knowledge that is necessary in this subject area.
  - To assess the risks that arise from the manipulation of chemical material.
  - To synthesize and to make accurate presentations of the results obtained in the laboratory.
- Prerequisites: It is recommended that students should have attended Physical chemistry III: Thermodynamic Chemistry before following this course.
- Course contents:
  - Thermodynamic part: properties of mixtures; colligative properties; activity coefficients; liquid-liquid equilibria; salt effect; electrochemistry; calorimetry; conductimetry; potenciometry; UV-visible spectroscopy
  - Kinetic part: determination of the order of reaction and the reaction rate constant; the temperature effect; the catalytic effect.
- Recommended reading:
  - Curso experimental en Química Física, Ruiz Sánchez, J.J.; Rodríguez Mellado, J.M.; Muñoz Gutiérrez, E.; Sevilla Suárez de Urbina, J.M.; Ed. Síntesis, S. A., Madrid, 2003.
  - Experimentación en Química Física, Guilleme, J.; Casanueva, J.; Díez, E.; Herraste, P.; Juan, J.; López, R.; Ocón, P.; Poyato, J.M.L.; San Fabián, J.; Sánchez, A.; de la Vega, J.M.G.; Zuluaga, J.; Ed. UAM, Madrid, 2003.
  - Experiments In Physical Chemistry, Garland C.W.; Nibler J. W.; Shoemaker D. P.; Ed. McGraw-Hill Higher Education, 8th Ed., Boston, 2009.
  - Experimental Physical Chemistry: A Laboratory Text, George McBane, Edition: 3rd Ed, W.H. Freeman, 2006
  - Experimental physical chemistry, Matthews, G. Peter, Oxford University Press, USA, 1986
  - Spectacular Chemical Experiments, Herbert W. Roesky, George A. Olah, Wiley-VCH, 2007
- Teaching methods:
  - Lectures: teachers explain the contents of the lessons.
  - Seminars: students and teacher discuss the problems and other points raised in the laboratory.
- Assessment methods:
  - Continuous evaluation of theoretical-practical sessions: 50%
  - Written work and exams: 50%
- Language of instruction: Spanish and/or English