

Información del Plan Docente

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| Academic Year | 2017/18 |
| Faculty / School | 100 - Facultad de Ciencias |
| Degree | 452 - Degree in Chemistry |
| ECTS | 15.0 |
| Year | 1 |
| Semester | Annual |
| Subject Type | Basic Education |
| Module | --- |

1.General information**1.1.Introduction****1.2.Recommendations to take this course****1.3.Context and importance of this course in the degree****1.4.Activities and key dates****2.Learning goals****2.1.Learning goals****2.2.Importance of learning goals****3.Aims of the course and competences****3.1.Aims of the course****3.2.Competences****4.Assessment (1st and 2nd call)****4.1.Assessment tasks (description of tasks, marking system and assessment criteria)****5.Methodology, learning tasks, syllabus and resources****5.1.Methodological overview**

The methodology followed in this course is oriented towards achievement of the learning objectives. It favors the understanding of the different chemical processes that occur in the environment. A wide range of teaching and learning tasks are implemented, such as theory sessions, problem solving sessions, and tutorials.

Students are expected to participate actively in the class throughout the academic year.

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Classroom materials will be available via Moodle. These include a repository of the lecture notes used in class, the course syllabus, problems notebook, Nomenclature of inorganic compounds notebook with many examples, Nomenclature of organic compounds notebook with many examples, as well as other course-specific learning materials, e.g., didactic videos.

Further information regarding the course will be provided on the first day of class.

5.2. Learning tasks

The course includes **15** ECTS organized according to:

- Theory sessions (**9** ECTS): **90** hours.
- Problem solving sessions: (**6** ECTS): **60** hours. Groups with half of students of each group of theory.

5.3. Syllabus

The course will address the following topics:

- 1- Introduction to current chemistry
- 2- Atoms and atomic theory
- 3- Types of chemical compounds and their formulas
- 4- Chemical reactions and stoichiometry
- 5- Chemical Thermodynamics
- 6- Chemical kinetics
- 7- Electronic structure of the atom
- 8- Periodic Table and some atomic properties
- 9- Chemical Bonding I: Basic concepts
- 10- Chemical Bonding II: Bonding theories
- 11- Solids and intermolecular forces. Composition-bonding-structure-properties relationships
- 12- Gases

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13- Liquids

14- Solutions

15- Principles of chemical equilibria

16- Acid-Base equilibria

17-Complex Formation equilibria

18- Solubility

19- Redox equilibria

20-Electrochemistry

21-Physical and chemical properties of the elements

22- Production of the elements

23- Stereochemistry of the organic compounds

24-Introduction to the reactivity of the organic compounds

25-Nuclear Chemistry

5.4.Course planning and calendar

Three hours of theory and two hours of problem solving sessions per week.

Dates for the periodical problems tests and Nomenclature exams will be notified in class and via Moodle. As a guide, Nomenclature exams will take place before Christmas holiday (inorganic compounds) and Mid March (organic compounds); exams problems will take place mid November, mid January, mid March and mid May.

For further details concerning the timetable, classroom and further information regarding this course please refer to the "Facultad de Ciencias" website (<https://ciencias.unizar.es/grado-en-quimica-0>).

Supplementary material: molecular models.

5.5.Bibliography and recommended resources

BB

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BC Soto Cámara, José Luis. Química orgánica. I, Conceptos básicos / José Luis Soto Cámara . - 2ª ed. rev. y aum. Madrid : Síntesis, 2003