

27113 - Macromolecules Structure

Información del Plan Docente

Academic Year	2017/18
Faculty / School	100 - Facultad de Ciencias
Degree	446 - Degree in Biotechnology
ECTS	6.0
Year	2
Semester	Second semester
Subject Type	Compulsory
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

For students enrolled in the subject, places, times and dates of lectures and practical sessions will be public via Bulletin Board advertisements of the grade on the platform Moodle at the University of Zaragoza , <https://moodle2.unizar.es/add/> and in the moodle page for the course. These routes will be also used to communicate enrolled students their distribution by groups of practical sessions, which will be organized by the coordination of degree. Provisional dates will be available on the website of the Faculty of Sciences in the corresponding section of the Degree in Biotechnology : <https://ciencias.unizar.es/grado-en-biotecnologia> .

In this web there will be also available the dates of exams.

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 learning process designed for this subject is based on.
Theory (4 ECTS). Lectures in big group. Possibility of seminars. Tutorials
Practical classes (2 ECTS). Individual work

5.2. Learning tasks

Presential learning and practical classes

5.3. Syllabus

Presential classes

- I. Biological solvents
- II. Protein structure and stability
- III. Polysacarides
- IV. Nucleic acid structure and stability
- V. Macromolecules interactions and assemblies
- VI. Structure determination
- VII. Synthetic and sequencing tools

Practical classes

PDB files visualization

Protein crystalization and model refinement
Protein stability determination
Basics of bioinformatics

5.4. Course planning and calendar

Schedules of lectures and problems will coincide with the officially established and will be available at:
<https://ciencias.unizar.es/grado-en-biotecnologia> .

The places, calendar and groups for training and practical sessions will be established in coordination with the rest of maters at beginning of course. The Coordinator will produce the groups of students for these activities at beginning of course to avoid overlaps with other subjects.

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Theoretical classes: 3 hours per week.

5.5. Bibliography and recommended resources

- BB** Branden, Carl. Introduction to protein structure / Carl Branden, John Tooze . - 2nd ed. New York [etc] : Garland, cop. 1999
- BB** Creighton, Thomas E.. Proteins : structures and molecular properties / Thomas E. Creighton . - 2nd ed. New York : W. H. Freeman, cop.1994
- BB** Estructura de proteínas / Carlos Gómez-Moreno Calera y Javier Sancho Sanz (coords.) Barcelona : Ariel, 2003
- BB** Lesk, Arthur M.. Introduction to protein architecture : the structural biology of proteins / Arthur M. Lesk . - 1st ed. repr. Oxford : Oxford University Press, 2003
- BB** Understanding DNA : the molecule & how it works / by Chris R. Calladine [et al.] . - 3rd ed Amsterdam : Elsevier / Academic Press, 2004