29239 - Structural Biochemistry

Información del Plan Docente

Academic Year	2016/17
Academic center	229 - Facultad de Ciencias de la Salud y del Deporte
Degree	441 - Degree in Human Nutrition and Dietetics
ECTS	7.0
Course	1
Period	First semester
Subject Type	Basic Education
Module	---

1.Basic info

1.1.Recommendations to take this course

1.2.Activities and key dates for the course

2.Initiation

2.1.Learning outcomes that define the subject

2.2.Introduction

3.Context and competences

3.1.Goals

3.2.Context and meaning of the subject in the degree

3.3.Competences

3.4.Importance of learning outcomes

4.Evaluation

5.Activities and resources

5.1.General methodological presentation

5.2.Learning activities

5.3.Program

LECTURES (50hr)

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SECTIONI. PHYSICOCHEMICAL BASIS OF BIOLOGICAL PROCESSES.

1. Life: A chemical function. 2. Chemical bonding and molecular structure. 3. Water: structure and physicochemical properties. 4. Weak interactions in aqueous media. 5. Organic compounds. 6. Chemical reactions in living organisms. 7. Bioenergetics.

SECTION II. COMPOSITION, STRUCTURE AND FUNCTIONS OF MACRONUTRIENTS.

8. Amino acids, peptides and proteins. 9. Protein structure. 10. Protein function and nutritional importance of proteins. 11. Carbohydrates: structure, function and nutritional importance. 12. Carbohydrates: Fiber. 13. Lipids: structure, function and nutritional importance. 14. Nucleotides and nucleic acids: structure and function.

SECTION III. REGULATORY NUTRIENTS.

15.- Functions and mechanisms of action of water-soluble vitamins. 16. Functions and mechanisms of action of fat soluble vitamins. 17. Macrominerals. 18. Microminerals. 19. Trace elements.

LABORATORY SESSIONS

P1. Introduction to laboratory work. Preparation of solutions.

P2. Rating solutions.

P3. Use and operation with a pH meter. Titration curve of an amino acid.

P4. Electrophoresis of serum proteins.

P5. Starch hydrolysis and determination of reducing sugars.

P6. Quantitative determination of cholesterol.

P7. Extraction and separation of plant pigments.

PROBLEM SOLVING SEMINARS (4hr).

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PSS1 (2hr)

PSS2 (2hr)

5.4.Planning and scheduling

5.5.Bibliography and recomended resources