

Titulación/Degree: 021
Licenciado en Bioquímica
Bachelor's in Biochemistry

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Plan 3 (1999)
Curriculum 3 (1999)

Especialidad 1 (Única)
Major 1 (Single Honours)

Nota: Segundo Ciclo
Note: Second Cycle

FIRST YEAR

Subjects:

313 Biofísica
Biophysics

Biophysical analysis of the biological processes at the cellular and molecular level. Bio energy, transport, bio-electric phenomena.
 2nd Semester ECTS 5.5

314 Biología Celular
Cellular Biology

Study techniques. Organisation of the eucariota cell. Molecular structure of the cell. Cellular physiology. Cell cultivation.
 2nd Semester ECTS 6.5

315 Biosíntesis de Macromoléculas y Control del Metabolismo
Biosynthesis of Macro Molecules and the Control of Metabolism

Mechanisms of synthesis of nuclear acid and proteins and their regulation.
 1st Semester ECTS 6

316 Regulación del Metabolismo
Regulation of Metabolism

Description of the metabolic routes, their integration and regulation. Intermediate

metabolism of carbohydrates, lipisoids amino acids and nucleotides.
 1st Semester ECTS 5.5

317 Enzimología
Enzymology

Mechanisms of enzymatic reactions. Enzymological kinetics. Enzymatic activation and inhibition: alosteric and co-operative effects. Experimental methods and enzymatic technology. Enzymatic analysis.
 1st Semester ECTS 5.5

318 Estructura de Macromoléculas
Macro Mollecular Structure

Theoretical approaches and experiments with chemical properties and physical proteins, nuclear acids and macro molecular complexes.
 1st Semester ECTS 5.5

319 Genética Molecular e Ingeniería Genética
Molecular Genetics and Genetic Engineering

Molecular genetics. Techniques of studies and modification of the genetic basics.
 2nd Semester ECTS 6.5

410 Técnicas de Experimentación en Bioquímica
Experimental Techniques in Biochemistry

Integrated laboratory in experimentation in advanced bio-chemistry.
 1st Semester ECTS 7

411 Química Orgánica Biológica
Bio-Organic Chemistry

The bio-organic reaction and its mechanisms. The bio-organic compound: from small bio-molecule

blocks to biological macro molecules. Primary and secondary metabolics: studies of the different types. ECTS 6

SECOND YEAR

Subjects:

514 Bioquímica Clínica y Patología Molecular

Clinical Biochemistry and Molecular Pathology

Alterations at the molecular level. Applications of clinical diagnosis.

2nd Semester ECTS 6.5

515 Bioquímica Industrial

Industrial Bio Chemistry

Bio-chemical processes of interest to industry. Reactors in development.

1st Semester ECTS 4.5

516 Microbiología Industrial

Industrial Microbiology

Microbiological processes of interest to industry. Reactors in that development.

1st Semester ECTS 4.5

517 Inmunología

Immunology

Introduction to immunology and immune chemistry: cellular and molecular aspects of immune reactions. Integration of immune response in the organism.

2nd Semester ECTS 5.5

518 Metodologías de Investigación en Bioquímica

Methodologies in Bio-Chemistry Investigation

Integrated laboratory in experimentation in advanced biochemistry.

1st Semester ECTS 7

519 Dinámica de Macromoléculas

Macro Molecular Dynamics

Properties in the dissolution of macro molecules and macro molecular processes.

Application to the characterisation of size, conformation and flexibility of the macro molecule.

1st Semester ECTS 4.5

610 Fisiología de las Plantas

Physiology of Plants

Economy of water and of nutrients. Photo processes. Hormonal regulation and development.

2nd Semester ECTS 5.5

611 Ingeniería Bioquímica

Biochemical Engineering

Analysis and design of bio reactor. Development of the models. Digital simulation of bio reactors.

1st Semester ECTS 4.5

OPTIONAL SUBJECTS:

413 Neuroquímica

Neurochemistry

Cellular and molecular basics of the nervous system. Neuronal bio-chemistry. Neuro transmission.

2nd Semester ECTS 4

415 Desarrollo y Biotecnología Vegetales

Vegetable Development and Bio-Technology

Methods of cultivation «in vitro». Vegetative propagation. Selection. Cells of cultivation. Application of cell cultivation.

1st Semester ECTS 4

416 Operaciones de Separación y Purificación

Operations of Separation and Purification

Principles based on the diverse processes of separation and purification involved in the production of bio products. Design of said processes. Final treatments and complementary operations.

2nd Semester ECTS 4

417 Química Bioinorgánica

Bio Inorganic Chemistry

Inorganic chemistry of biological processes.

2nd Semester ECTS 4

418 Síntesis Biocatalítica
Bio Catalic Synthesis

Types of bio-catalyzer. Stabilisation. Designs of types of reaction. Applications in organic synthesis, fine chemistry and bio medicine.

2nd Semester ECTS 4

419 Procesos de Transporte en Ingeniería Bioquímica
Processes of Transportation in Biochemical Engineering

Principles of transportation of properties. Balances and equations of continuation. Molecular and turbulent transport. Transport between phases.

1st Semester ECTS 4

510 Fisiología de Sistemas
Physiology of Systems

Functions of the circulatory, respiratory, digestive, excretion, nervous and endocrine systems. Hematopoetic blood and organs.

1st Semester ECTS 4

511 Experimentación en Bioquímica Aplicada
Applied Experimentation in Biochemistry

Elaboration and realisation of a project of investigation in applied biochemistry.

1st Semester ECTS 4

512 Química Biorgánica
Bio Organic Chemistry

Synthetic fundamentals of the biological macro-molecular and super macro-molecular structure. Polymeric and transport membranes. Eteres lariat. Selective molecular knowledge. Bio-catalyst of organic reactions. Applications and special techniques.

1st Semester ECTS 4

513 Química Bioanalítica
Bio-Analitic Chemistry

Automation. Continuous and discontinuous Analysers. (Bio) chemical sensors. Chemical-metrics. Optimisation of analytical processes. Quality control in analytic laboratories.

2nd Semester ECTS 4