

Master in Biochemistry

Specialization(s):

Biochemistry

Training Goals:

The Master in Biochemistry aims to provide in-depth training in the fields of molecular biology, biochemistry applied to human health, and metabolic biochemistry. Students will acquire solid knowledge about molecular and cellular mechanisms of life. They will gain expertise in the biochemical mechanisms underlying metabolic disorders associated with various pathologies, enabling them to prevent, propose, complement treatments, or direct research and development toward managing pathological anomalies.

Title of the Master's Program:

Master in Biochemistry

Specialization(s):

Biochemistry

Training Goals:

The Master in Biochemistry aims to provide in-depth training in the fields of molecular biology, structural biology, enzymology, and protein engineering. It prepares students for research and professional careers in the biotechnology, pharmaceutical, and food industries, as well as for doctoral studies.

Learning Outcomes:

At the end of the training, the student will be able to:

- Understand and apply advanced knowledge in biochemistry;
- Analyze and interpret biochemical data;
- Develop and conduct scientific experiments in a laboratory;
- Communicate scientific results effectively, both orally and in writing;
- Work independently or in a team on research or development projects.

Access Conditions:

This Master's program is open to holders of a Bachelor's degree in Biochemistry, Molecular Biology, or any equivalent diploma. Admission is based on application review and/or interview.

Bridge Pathways and Reorientation:

Holders of related degrees (biology, chemistry, biotechnology) may apply after review of

their academic background. Students may also reorient themselves toward other Master's programs in Life Sciences after assessment.

Partnerships and Openings:

The training includes collaborations with research laboratories and industry professionals. Internships and research projects allow immersion in the professional world. The program also opens access to doctoral studies in biochemistry or related fields.

Program Duration:

Two academic years (four semesters)

Course Organization:

Semester 1:

UE Code	UE Title	Type	Credits	Hour Volume	Hour Type
UE1	Structural Biochemistry	FC	6	60 h	Lectures / TP
UE2	Enzymology and Kinetics	FC	6	60 h	Lectures / TP
UE3	Molecular Biology	FC	6	60 h	Lectures / TP
UE4	Laboratory Techniques in Biochemistry	FC	6	60 h	TP
UE5	Scientific Communication	TM	6	60 h	Tutorials / Oral

Semester 2:

UE Code	UE Title	Type	Credits	Hour Volume	Hour Type
UE6	Protein Engineering	FC	6	60 h	Lectures / TP
UE7	Bioinformatics and Modeling	FC	6	60 h	Lectures / Tutorials
UE8	Research Project I	TM	6	60 h	Research / Writing
UE9	Elective: Biotechnology or Pharmacology	TM	6	60 h	Lectures / Tutorials

UE Code	UE Title	Type	Credits	Hour Volume	Hour Type
UE10	English for Science	TM	6	60 h	Tutorials / Oral

Semester 3:

UE Code	UE Title	Type	Credits	Hour Volume	Hour Type
UE11	Advanced Structural Biology	FC	6	60 h	Lectures / TP
UE12	Metabolism and Regulation	FC	6	60 h	Lectures / TP
UE13	Advanced Molecular Genetics	FC	6	60 h	Lectures / TP
UE14	Research Methodology	TM	6	60 h	Tutorials / Oral
UE15	Research Project II	TM	6	60 h	Research / Report

Semester 4:

UE Code	UE Title	Type	Credits	Hour Volume	Hour Type
UE16	Internship and Thesis	TM	30	---	Internship Report / Defense

Evaluation Methods:

Each teaching unit (UE) is assessed through continuous assessment (practical work, oral presentations, written reports) and/or final exams. The internship is assessed by a written report and an oral defense.

Graduation Requirements:

To obtain the Master's degree, the student must validate all UEs and successfully complete the internship and thesis defense, totaling 120 ECTS credits.

Career Opportunities:

Graduates can pursue careers in:

- Research laboratories (public and private);
- Pharmaceutical and biotechnology industries;
- Health and food industries;
- Teaching and academia (with continuation to doctoral studies).

Further Studies:

Graduates are eligible for doctoral programs in biochemistry, molecular biology, or related disciplines.