



# MSC BIOTECHNOLOGY - BIOCHEMISTRY TRACK

## IDENTITY CARD

- > Domain : Sciences, Technologies and Health
- > Full time course
- > [Continuing Education](#)
- > [Master of Engineering](#)
- > [120 ECTS credits](#)
- > 4 semesters
- > La Rochelle

## REGISTRATION

<https://www.univ-larochelle.fr/formation/admission-inscription-et-scolaire/candidatures-et-inscriptions/candidater-universite-la-rochelle/>

## CONTACT

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## OBJECTIVES

### > Presentation

“Are you looking for a rewarding, professionalising course in biochemistry, molecular biology, chemistry, microbiology and physicochemical analysis processes and methods ?

Then this Master's degree is exactly what you're looking for !

Thanks to this programme, you will acquire scientific and technical skills in the field of biotechnology, biochemistry and agri-food engineering, complemented by a knowledge of communication tools and business and people management.

You will be able to study the molecules that make up living organisms and products of interest (food, drugs, etc.) and to understand the transformation of these molecules, using your knowledge of enzymatic engineering and/or microbiological engineering. You will master the biotechnological or chemical synthesis of molecules of interest (therapeutic, cosmetic, etc.). You will also be able to assess the impact of the environment and lifestyles on metabolic changes and health, and to propose alternatives to techniques that do not respect the environment.

After completing this Master's degree, you will be eligible for management positions at engineer level in laboratories or biotechnology, agri-food and chemical companies.”

Stéphanie BORDENAVE-JUCHEREAU



Stéphanie Bordenave-Juchereau

## ✓ ADMISSION

### > How to apply ?

For the 1st year of the Master's, application to be submitted.

How to apply to the [1st year of the Master's](#)

How to apply to the [2nd year of the Master's](#)

## PROGRAMME

● Mandatory ■ Course option

### > Semester 1

#### > From Bioresource to Molecule ●

- Biomolecule Extraction Processes
- Emerging Extraction Techniques
- Organic Syntheses for Bioinspired Molecules
- Spectral Analysis

#### > Mastering Gene Expression and Understanding Gene Therapy ●

- Gene Expression and Gene therapy

#### > Understanding Cell Regulation and Communication ●

- Advanced Molecular and Cellular Pharmacology
- Microbial Interactions and Communication

#### > Minor: Combining Microbiology and Health ●

- Infection Prevention and Control
- Microbiology, Infectious Diseases and Virology

#### > Cross Curricular Units ●

- Biostatistics and Experimental Design
- Biotech Day
- Modern Foreign Language 1: English

### > Semester 2

#### > Becoming A Researcher ●

- Assays and biological activities evaluation
- Methodological Tools for Research, Sustainable Development and Social Responsibility

#### > Bioreactor Operation and Biomolecule Production ●

- Bioreactors and Biomolecule Production
- Enzyme Engineering

#### > Multidimensional NMR and Pharmaceutical Chemistry ●

- Multidimensional NMR
- Pharmaceutical Chemistry

#### > Minor: Exploring Biomolecules ●

- "Protein Data Bank" Use and Protein Infographic
- Advanced Molecular Immunology and Immunotherapy

#### > Cross Curricular Units Biochemistry ●

- Biochemistry Work Placement (3 weeks)
- Modern Foreign Language 1: English

## > Semester 3

### > Enhancing the Biotechnological Potential of Microorganisms •

- Microbiology, Environment and Health
- Valorisation of Microorganisms and Biofilms

### > Explaining Mechanisms and Malfunctions •

- Carcinogenesis and Therapies
- Molecular Pathologies and Metabolic Disorders

### > Modelling and Applying •

- Genomic and Bioinformatics
- Molecular Modelling Softwares
- Proteomics and Applications

### > Minor: Getting involved in Research, Health and Society •

- Discourse Ethics and Forms of Arguments
- Nanomedecine
- Structure-Function Relationship of Polysaccharides

### > Cross Curricular Units •

- Biotech Day
- Intellectual Property and Innovation / Financing Innovation
- Modern Foreign Language 1: English

## > Semester 4

### > End-Of-Study Internship (Biochemistry) •

- Biochemistry Work Placement (24 weeks)

## AFTERWARDS

### > Further Education

- [PhD](#)

### > Professions

- Quality insurer, certification, audit
- Researcher, R & D engineer
- Commercial
- Purchasing Manager
- Production manager

Information subject to change

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