



# MSC BIOTECHNOLOGY PROGRAMME BIOCHEMISTRY

## IDENTITY CARD

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

## REGISTRATION

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

## CONTACT

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## OBJECTIVES

### > Presentation

“ Are you looking for a rewarding and professional degree in the field of biochemistry, molecular biology, chemistry, microbiology, physicochemical analysis methods and methods ?

So this master bio biotechnology course is for you !

Thanks to this training you will have the scientific and technical skills of the biotechnological, biochemical and agro-food engineering field supplemented by the mastery of communication tools and the knowledge of the management of companies and individuals.

You will be able to study the molecules that constitute living things and products of interest (food, medicine ...). You will be able to follow the transformation of these molecules by exploiting their acquired enzymatic engineering and / or microbiological engineering. You will master the biotechnological or chemical synthesis of molecules of interest (therapeutic, cosmetic ...).

You will also be able to appreciate the impact of the environment and lifestyles on metabolic alterations and health and to propose alternatives to techniques that are not respectful of the environment.

At the end of this master's degree you will be eligible for a post of engineer-level manager in laboratories or biotechnology, agri-food and chemical companies.



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

#### > De la bioressource à la molécule ●

- Analyses spectrales
- Méthodes d'extraction émergentes
- Organic syntheses for bioinspired molecules
- Procédés d'extraction de biomolécules

#### > Expression génétique, thérapie génique ●

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#### > Régulations & communications cellulaires ●

- Advanced Molecular and cellular pharmacology
- Microbiologie infectieuse et virologie

#### > Mineur : Agro ■

- Etudes de marché
- Grandes filières alimentaires
- Mercatique

#### > Mineure : Biochimie ■

- Microbial interactions and communication
- Stratégies de lutte contre les pathogènes

#### > Unités transversales ●

- Biotech day
- LV1 Anglais
- Plans d'expériences et biostatistiques

### > Semester 2

#### > Activités biologiques et outils méthodologique de la recherche ●

- Assays and biological activities evaluation
- Outils méthodologiques de la recherche, développement durable et responsabilité sociétale

#### > Extraction & biomolécules actives ●

- Bioréacteurs et production de biomolécules
- Génie Enzymatique

#### > RMN Multidimensionnelle et chimie pharmaceutique ●

- Chimie pharmaceutique
- RMN multidimensionnelle

#### > Mineure : Agro ■

- Gestion de production

- Gestion de projet en agroalimentaire
- Stratégie de l'entreprise et plan d'action

### > Mineure : Biochimie ■

- Advanced Molecular Immunology and Immunotherapy
- Utilisation de la "protein data bank" et infographie protéique

### > Unités transversales •

- LV1 Anglais
- Stage (3 semaines)

## > Semester 3

### > Mécanismes et dysfonctionnements •

- Cancérogénèse et thérapies
- Molecular pathologies and metabolic disorders

### > Modélisation moléculaires et applications •

- Génomique et bioinformatique
- Outils de la modélisation moléculaire des protéines
- Protéomique et applications

### > Potentiels biotechnologiques des microorganismes •

- Biofilms
- Microbiology environment and health

### > Mineure : Agro ■

- HACCP et gestion de la Qualité
- Qualité nutritionnelle

### > Mineure : Biochimie ■

- Argumentation, ethics and rhetorics
- Nanomedecine
- Relation structure fonction des polysaccharides

### > Unités transversales •

- Biotech day
- LV1 Anglais
- PI et innovation / financement de l'innovation

## > Semester 4

### > Stage fin d'études •

- Stage (24 semaines)

## 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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