



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-scolarite/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

> Cours majeurs

> De la bioressource à la molécule ●

● Analyses spectrales

Language used for teaching
French

Teaching time
30h (9h lectures - 9h tutorials - 6h practical work - 6h work in accompaniment)

3 ECTS credits

Course code
280-1-13

● Méthodes d'extraction émergentes

Language used for teaching
French

Teaching time
9h (6h lectures - 3h work in accompaniment)

1 ECTS credit

Course code
280-1-12

● Organic syntheses for bioinspired molecules

Language used for teaching
French - English

Teaching time
18h (12h lectures - 6h tutorials)

2 ECTS credits

Course code
280-1-14

● Procédés d'extraction de biomolécules

Language used for teaching
French

Teaching time
15h (6h lectures - 6h tutorials - 3h work in accompaniment)

1 ECTS credit

Course code
280-1-11

> Expression génétique, thérapie génique ●

● Expression génétique, thérapie génique

Language used for teaching
French

Teaching time
63h (27h lectures - 6h tutorials - 18h practical work - 12h work in accompaniment)

6 ECTS credits

Course code
280-1-21

> Régulations & communications cellulaires ●

- Advanced Molecular and cellular pharmacology

Language used for teaching
English - French

Teaching time
28h 30min (21h lectures - 3h tutorials - 4h 30min work in accompaniment)

3 ECTS credits

Course code
280-1-31

- Microbiologie infectieuse et virologie

Language used for teaching
French

Teaching time
18h (12h lectures - 3h tutorials - 3h work in accompaniment)

2 ECTS credits

Course code
280-1-32

> Mineur : Agro ■

- Etudes de marché

Language used for teaching
French

Teaching time
16h 30min (9h lectures - 4h 30min tutorials - 3h work in accompaniment)

2 ECTS credits

Course code
280-1-81

- Grandes filières alimentaires

Language used for teaching
French

Teaching time
21h (18h lectures - 3h work in accompaniment)

2 ECTS credits

Course code
280-1-82

- Mercatique

Language used for teaching
French

Teaching time
16h 30min (9h lectures - 4h 30min tutorials - 3h work in accompaniment)

2 ECTS credits

Course code
280-1-83

> Mineure : Biochimie ■

- Microbial interactions and communication

Language used for teaching
French - English

Teaching time
15h (12h lectures - 3h work in accompaniment)

2 ECTS credits

Course code
280-1-72

- Stratégies de lutte contre les pathogènes

Language used for teaching	French
Teaching time	36h (12h lectures - 18h practical work - 6h work in accompaniment)
4 ECTS credits	
Course code	280-1-71

> Cours transversaux

> Unités transversales •

- Biotech day

Language used for teaching	French
Teaching time	15h (3h tutorials - 12h practical work)
1 ECTS credit	
Course code	280-1-03

- LV1 Anglais

Language used for teaching	French
Teaching time	24h (24h tutorials)
2 ECTS credits	
Course code	280-1-01

- Plans d'expériences et biostatistiques

Language used for teaching	French
Teaching time	30h (12h lectures - 6h tutorials - 6h practical work - 6h work in accompaniment)
3 ECTS credits	
Course code	280-1-02

> Semester 2

> Cours majeurs

> Activités biologiques et outils méthodologique de la recherche •

- Assays and biological activities evaluation

Language used for teaching	French - English
Teaching time	40h 30min (12h lectures - 21h practical work - 7h 30min work in accompaniment)
4 ECTS credits	
Course code	280-2-21

- Outils méthodologiques de la recherche, développement durable et responsabilité sociétale

Language used for teaching	French
Teaching time	10h 30min (4h 30min lectures - 4h 30min tutorials - 1h 30min work in accompaniment)
1 ECTS credit	
Course code	280-2-22

> **Extraction & biomolécules actives** ●

● Bioréacteurs et production de biomolécules

Language used for teaching
French

Teaching time
33h (15h lectures - 6h tutorials - 12h work in accompaniment)

3 ECTS credits

Course code
280-2-12

● Génie Enzymatique

Language used for teaching
French

Teaching time
49h 30min (15h lectures - 6h tutorials - 21h practical work - 7h 30min work in accompaniment)

5 ECTS credits

Course code
280-2-11

> **RMN Multidimensionnelle et chimie pharmaceutique** ●

● Chimie pharmaceutique

Language used for teaching
French

Teaching time
30h (12h lectures - 3h tutorials - 9h practical work - 6h work in accompaniment)

3 ECTS credits

Course code
280-2-32

● RMN multidimensionnelle

Language used for teaching
French

Teaching time
18h (12h lectures - 4h 30min tutorials - 1h 30min work in accompaniment)

2 ECTS credits

Course code
280-2-31

> **Mineure : Agro** ■

● Gestion de production

Language used for teaching
French

Teaching time
18h (12h lectures - 3h tutorials - 3h work in accompaniment)

2 ECTS credits

Course code
280-2-83

● Gestion de projet en agroalimentaire

Language used for teaching
French

Teaching time
18h (12h lectures - 3h tutorials - 3h work in accompaniment)

2 ECTS credits

Course code
280-2-81

- Stratégie de l'entreprise et plan d'action

Language used for teaching	French
Teaching time	18h (12h lectures - 3h tutorials - 3h work in accompaniment)
2 ECTS credits	
Course code	280-2-82

> Mineure : Biochimie ■

- Advanced Molecular Immunology and Immunotherapy

Language used for teaching	French - English
Teaching time	18h (12h lectures - 3h tutorials - 3h work in accompaniment)
2 ECTS credits	
Course code	280-2-72

- Utilisation de la "protein data bank" et infographie protéique

Language used for teaching	French
Teaching time	36h (9h lectures - 6h tutorials - 9h practical work - 12h work in accompaniment)
4 ECTS credits	
Course code	280-2-71

> Cours transversaux

> Unités transversales ●

- LV1 Anglais

Language used for teaching	French
Teaching time	24h (24h tutorials)
2 ECTS credits	
Course code	280-2-01

- Stage (3 semaines)

Language used for teaching	French
4 ECTS credits	
Course code	280-2-02-STAG

> Semester 3

> Cours majeurs

> Mécanismes et dysfonctionnements ●

- Cancérogénèse et thérapies

Language used for teaching

French

Teaching time

27h (15h lectures - 6h tutorials - 6h work in accompaniment)

3 ECTS credits

Course code

280-3-12

- Molecular pathologies and metabolic disorders

Language used for teaching

French - English

Teaching time

19h 30min (12h lectures - 3h tutorials - 4h 30min work in accompaniment)

2 ECTS credits

Course code

280-3-11

> Modélisation moléculaires et applications ●

- Génomique et bioinformatique

Language used for teaching

French

Teaching time

33h (21h lectures - 6h tutorials - 6h work in accompaniment)

3 ECTS credits

Course code

280-3-22

- Outils de la modélisation moléculaire des protéines

Language used for teaching

French

Teaching time

21h (12h lectures - 6h tutorials - 3h work in accompaniment)

2 ECTS credits

Course code

280-3-21

- Protéomique et applications

Language used for teaching

French

Teaching time

16h 30min (12h lectures - 4h 30min work in accompaniment)

2 ECTS credits

Course code

280-3-23

> Potentiels biotechnologiques des microorganismes ●

- Biofilms

Language used for teaching

French

Teaching time

25h 30min (15h lectures - 3h tutorials - 7h 30min work in accompaniment)

3 ECTS credits

Course code

280-3-31

- Microbiology environment and health

Language used for teaching

English - French

Teaching time

25h 30min (15h lectures - 3h tutorials - 7h 30min work in accompaniment)

3 ECTS credits

Course code

280-3-32

> Mineure : Agro ■

- HACCP et gestion de la Qualité

Language used for teaching

French

Teaching time

42h (30h lectures - 3h tutorials - 9h work in accompaniment)

5 ECTS credits

Course code

280-3-81

- Qualité nutritionnelle

Language used for teaching

French

Teaching time

15h (9h lectures - 3h tutorials - 3h work in accompaniment)

1 ECTS credit

Course code

280-3-82

> Mineure : Biochimie ■

- Argumentation, ethics and rhetorics

Language used for teaching

French - English

Teaching time

16h 30min (9h lectures - 4h 30min tutorials - 3h work in accompaniment)

2 ECTS credits

Course code

280-3-71

- Nanomedecine

Language used for teaching

French

Teaching time

16h 30min (9h lectures - 4h 30min tutorials - 3h work in accompaniment)

2 ECTS credits

Course code

280-3-72

- Relation structure fonction des polysaccharides

Language used for teaching

French

Teaching time

16h 30min (9h lectures - 4h 30min tutorials - 3h work in accompaniment)

2 ECTS credits

Course code

280-3-73

> Cours transversaux

Unités transversales •

• Biotech day

Language used for teaching
French

Teaching time
19h 30min (4h 30min tutorials - 9h practical work - 6h work in accompaniment)

2 ECTS credits

Course code
280-3-03

• LV1 Anglais

Language used for teaching
French

Teaching time
24h (24h tutorials)

2 ECTS credits

Course code
280-3-01

• PI et innovation / financement de l'innovation

Language used for teaching
French

Teaching time
16h 30min (13h 30min lectures - 3h work in accompaniment)

2 ECTS credits

Course code
280-3-02

> Semester 4

> Cours majeurs

> Stage fin d'études •

• Stage (24 semaines)

Language used for teaching
French

30 ECTS credits

Course code
280-4-01-STAG

📌 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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