

SCIENCES, TECHNOLOGIES AND HEALTH

# Master in Biology

Biologie



Target level  
Baccalaureate  
+5



ECTS  
120 credits



Duration  
2 years



Component  
UFR Chimie-  
Biologie



Language(s) of  
instruction  
English, French

## Subprograms

- > Molecular and cellular biology 1st year
- > Microbiology, infectious diseases and immunology 2nd year
- > Structural biology of pathogens 2nd year
- > Neurosciences, neurobiology 2nd year
- > Physiology, epigenetics, differentiation and cancer 2nd year
- > Biology and marketing techniques 2nd year
- > Science trading 2nd year
- > Pro2Bio 2nd year
- > Physiology, epigenetics, differentiation and development 2nd year

- Physiology, epigenetics, differentiation and development program / Biologie et techniques de commercialisation program (taught in French)
- Science trading program
- Pro2Bio program (taught partly in French and partly in English)

Students graduating from the master's degree in Biology can look forward to gaining job opportunities throughout the public and private sector, as well as in research settings in various fields of Biology such as cell biology, molecular biology, microbiology, immunology, infectious diseases, neurosciences, physiology, epigenetics, development, biochemistry, structural biology. The programs Pro2Bio, BioTechCo and Lab science trading open to careers as biomedical engineers (Pro2Bio) and sale engineers (BioTechCo and Lab science trading).

## Presentation

The master's degree in Biology is axed around the main domains of biomedical research in Grenoble. The first year of the master's degree, *i.e.* the master 1st year's program named Molecular and cellular biology (MCB) opens to the 7 following master 2 programs

- Microbiology, infectious diseases and immunology program
- Structural biology of pathogens program
- Neurosciences, neurobiology program
- Physiology, epigenetics, differentiation and cancer program

**International education :** Internationally-oriented programmes, Double degrees, joint degrees, Erasmus Mundus

## Admission

### Access conditions

- First year master's degree : If you have completed a bachelor's degree in Science or are enrolled in the final semester of a bachelor's program in Science, you are eligible to apply for the master's degree in Biology

- Second year master's degree : To be eligible to apply you should have completed, or be enrolled in a first year of a master program in Science, and totalize 60 ETCS

Public continuing education : You are in charge of continuing education :

- if you resume your studies after 2 years of interruption of studies
- or if you followed training under the continuous training regime one of the previous 2 years
- or if you are an employee, job seeker, self-employed
- If you do not have the diploma required to integrate the training, you can undertake a [validation](#) of personal and professional achievements (VAPP).

## Candidature / Application

### Master 1 Molecular and cellular biology

- Opening period for recruitment : **from 26th of february to 24 of march 2024 included** with [monmaster.gouv.fr](#)

**Master 2 Microbiology, infectious diseases and immunology - Structural biology of pathogens - Neurosciences, neurobiology - Physiology, epigenetics, differentiation and cancer**

- 1st opening period for recruitment on e-candidat : **from 4th of march to 27 of march 2024 included**
- 2nd opening period for recruitment on e-candidat : **from 29th of april to 15 of may 2024 included**

**Master 2 Biology and marketig techniques - Science trading - Pro2Bio**

- 1st opening period for recruitment on e-candidat : **from 4th of march to 27 of march 2024 included**
- 2nd opening period for recruitment on e-candidat : **from 25th of march to 15th of april 2024 included**
- 3rd opening period for recruitment on e-candidat : **from 29th of april to 15 of may 2024 included**

Let us be your guide – simply follow this [link](#)

An interview will be proposed to the applicants to the first or second year of the master's degree in order to test their motivation.

Candidates from a foreign University, please see the admission requirements on the following [website](#)

## Fees

UGA registration fees : 243 € + 100 € CVEC

## And after

## Additional information

The programs Pro2Bio, BioTechCo and Lab Science Trading open to careers as biomedical engineers (Pro2Bio) and sale engineers (BioTechCo and Lab Science Trading).

## Useful info

## Contacts

### Program director

Alain Buisson

✉ [Alain.Buisson@univ-grenoble-alpes.fr](mailto:Alain.Buisson@univ-grenoble-alpes.fr)

### Administrative contact

Scolarité Master Biologie

✉ [ufrchimiebiologie-master-biologie@univ-grenoble-alpes.fr](mailto:ufrchimiebiologie-master-biologie@univ-grenoble-alpes.fr)

### Continuing education manager

Muriel Lascar

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✉ [fc-chimiebio@univ-grenoble-alpes.fr](mailto:fc-chimiebio@univ-grenoble-alpes.fr)

## Course location(s) - City

📍 Grenoble

## Campus

 Grenoble - University campus

# Program

## Molecular and cellular biology 1st year

### Master 1st year

#### Semester 7

	Nature	CM	TD	TP	Crédits
UE Molecular Genetics and Epigenetics controls	Teaching Unit (UE)	31,5h	13,5h	4h	6 credits
UE Chemistry and Biochemistry	Teaching Unit (UE)	30h	20h		6 credits
UE Driving Experimentation in Biology	Teaching Unit (UE)	3h		150h	18 credits

#### Semester 8

	Nature	CM	TD	TP	Crédits
UE Laboratory internship (part I)	Teaching Unit (UE)				6 credits
UE Development and differentiation	Teaching Unit (UE)	29h	18h		6 credits
UE Metabolic physiology and pathophysiology	Teaching Unit (UE)	27h	20h		6 credits
UE How to become a cancer cell	Teaching Unit (UE)	30h	20h		6 credits
UE Neurological bases of the Emotions and Motivation	Teaching Unit (UE)	32h	8h	6h	6 credits
UE Drug action and drug design	Teaching Unit (UE)	22,5h	15h	9h	6 credits
UE Immunobiology	Teaching Unit (UE)	39h	9h		6 credits
UE Infectious diseases (part I)	Teaching Unit (UE)	34,5h	15h		6 credits
UE Functional anatomy of the central nervous system	Teaching Unit (UE)	33h	12h		6 credits

UE Macromolecular engineering	Teaching Unit (UE)	22,5h	15h	9h	6 credits
UE Bacteriology	Teaching Unit (UE)	27h	18h		6 credits
UE Molecular bases of the normal and pathological memory	Teaching Unit (UE)	36h	12h		6 credits
UE English course	Teaching Unit (UE)		24h		3 credits
UE Transverse teaching of choice	Teaching Unit (UE)				3 credits
UE Analytical and spectroscopic methods II	Teaching Unit (UE)	13,5h			3 credits
UE Connaissance de l'entreprise et des métiers	Teaching Unit (UE)				3 credits

## Microbiology, infectious diseases and immunology 2nd year

### Master 2nd year

#### Semester 9

	Nature	CM	TD	TP	Crédits
UE Research project	Teaching Unit (UE)	6h	30h		6 credits
UE Fundamental and Applied Microbiology	Teaching Unit (UE)				6 credits
UE Infectious diseases (part II)	Teaching Unit (UE)				6 credits
UE Pathology and immunology	Teaching Unit (UE)				6 credits
UE Immunity against cancers and infectious diseases	Teaching Unit (UE)				6 credits
UE Cancer disease : experimental and therapeutical approaches	Teaching Unit (UE)	30h	10h		6 credits
UE High throughput Biology	Teaching Unit (UE)	30h	10h		6 credits

UE Biostatistics, bioinformatics, modeling (part II)

Teaching 27h 12h 6 credits  
Unit (UE)

## Semester 10

	Nature	CM	TD	TP	Crédits
UE Business plan of your start-up (entrepreneurship and science)	Teaching Unit (UE)	14h	10h		3 credits
UE Laboratory internship IMID (part II)	Teaching Unit (UE)				24 credits
UE Communication in scientific english (part II)	Teaching Unit (UE)				3 credits
UE Transverse teaching of choice	Teaching Unit (UE)				3 credits

## Structural biology of pathogens 2nd year

### Master 2nd year

## Semester 9

	Nature	CM	TD	TP	Crédits
UE Research project	Teaching Unit (UE)	6h	30h		6 credits
UE Structure determination of biological macromolecules	Teaching Unit (UE)	19h	12h	10h	6 credits
UE Integrative structural cell biology	Teaching Unit (UE)	21h	7h	12h	6 credits
UE Recent advances and applications in structural biology	Teaching Unit (UE)	30h	10h		6 credits
UE High throughput Biology	Teaching Unit (UE)	30h	10h		6 credits
UE Biostatistics, bioinformatics, modeling (part II)	Teaching Unit (UE)	27h	12h		6 credits
UE Fundamental and Applied Microbiology	Teaching Unit (UE)				6 credits

## Semester 10

	Nature	CM	TD	TP	Crédits
UE Business plan of your start-up (entrepreneurship and science)	Teaching Unit (UE)	14h	10h		3 credits
UE Laboratory internship ISB (part II)	Teaching Unit (UE)				24 credits
UE Communication in scientific english (part II)	Teaching Unit (UE)				3 credits
UE Transverse teaching of choice	Teaching Unit (UE)				3 credits

## Neurosciences, neurobiology 2nd year

### Master 2nd year

#### Semester 9

	Nature	CM	TD	TP	Crédits
UE Research project	Teaching Unit (UE)	6h	30h		6 credits
UE Neurophysiology	Teaching Unit (UE)	24h	13,5h		6 credits
UE Neurodegeneration and repair	Teaching Unit (UE)	18h	22h		6 credits
UE Synaptic Plasticity of the adult nervous system	Teaching Unit (UE)	27h	9h		6 credits
UE Cancer disease : experimental and therapeutical approaches	Teaching Unit (UE)	30h	10h		6 credits
UE High throughput Biology	Teaching Unit (UE)	30h	10h		6 credits
UE Biostatistics, bioinformatics, modeling (part II)	Teaching Unit (UE)	27h	12h		6 credits
UE Epigenetics and cell differentiation	Teaching Unit (UE)	20h	20h		6 credits
UE Cardiovascular physiology and integrated metabolism	Teaching Unit (UE)	15h	25h		6 credits
UE Ageing and longevity	Teaching Unit (UE)	25h	7h		6 credits

UE Evo Devo and the green lineage

Teaching 22,5h 18h 6 credits  
Unit (UE)

## Semester 10

	Nature	CM	TD	TP	Crédits
UE Business plan of your start-up (entrepreneurship and science)	Teaching Unit (UE)	14h	10h		3 credits
UE Laboratory internship NN (part II)	Teaching Unit (UE)				24 credits
UE Communication in scientific english (part II)	Teaching Unit (UE)				3 credits
UE Transverse teaching of choice	Teaching Unit (UE)				3 credits

## Physiology, epigenetics, differentiation and cancer 2nd year

### Master 2nd year

## Semester 9

	Nature	CM	TD	TP	Crédits
UE Research project	Teaching Unit (UE)	6h	30h		6 credits
UE Ageing and longevity	Teaching Unit (UE)	25h	7h		6 credits
UE Cardiovascular physiology and integrated metabolism	Teaching Unit (UE)	15h	25h		6 credits
UE Epigenetics and cell differentiation	Teaching Unit (UE)	20h	20h		6 credits
UE Evo Devo and the green lineage	Teaching Unit (UE)	22,5h	18h		6 credits
UE Molecular biology of the cancer cell	UE	36h			6 credits
UE Ageing and longevity	UE	29h	7h		6 credits
UE Evolution & Development of Eukaryotes	UE	22,5h	18h		6 credits
UE Epigenetics and cell differentiation	UE	20h	20h		6 credits



UE Cardiovascular physiology and integrated metabolism	UE	15h	25h	6 credits
UE Molecular biology of the cancer cell	UE		12h	6 credits
UE High throughput Biology	Teaching Unit (UE)	30h	10h	6 credits
UE Biostatistics, bioinformatics, modeling (part II)	Teaching Unit (UE)	27h	12h	6 credits
UE Cancer disease : experimental and therapeutical approaches	Teaching Unit (UE)	30h	10h	6 credits
UE Neurophysiology	Teaching Unit (UE)	24h	13,5h	6 credits
UE Neurodegeneration and repair	Teaching Unit (UE)	18h	22h	6 credits
UE Synaptic Plasticity of the adult nervous system	Teaching Unit (UE)	27h	9h	6 credits

## Semester 10

	Nature	CM	TD	TP	Crédits
UE Business plan of your start-up (entrepreneurship and science)	Teaching Unit (UE)	14h	10h		3 credits
UE Laboratory internship PhEDD (part II)	Teaching Unit (UE)				24 credits
UE Communication in scientific english (part II)	Teaching Unit (UE)				3 credits
UE Transverse teaching of choice	Teaching Unit (UE)				3 credits

## Biology and marketing techniques 2nd year

### Semestre 9

	Nature	CM	TD	TP	Crédits
UE Techniques de vente et de commercialisation	Teaching Unit (UE)	72h	15h		6 credits
UE Science de gestion	Teaching Unit (UE)	62h	12h		6 credits
UE Techniques 1	Teaching Unit (UE)	31h	23h	8h	6 credits

UE Biologie	Teaching Unit (UE)	39h	10h	6 credits
UE Contexte professionnel	Teaching Unit (UE)	59h	13h	6 credits

## Semestre 10

	Nature	CM	TD	TP	Crédits
UE Stage BioTechCo	Teaching Unit (UE)				27 credits
UE Communication in scientific english (part II)	Teaching Unit (UE)				3 credits
UE ETC	Teaching Unit (UE)				3 credits

## Science trading 2nd year

### Master 2nd year

## Semester 9

	Nature	CM	TD	TP	Crédits
UE Sales and commercial negotiation	Teaching Unit (UE)	40h	10h		6 credits
UE Marketing : an approach to foreign markets	Teaching Unit (UE)	30h	10h		3 credits
UE Sociological and multicultural approach of market	Teaching Unit (UE)	16h	27h		3 credits
UE Company knowledge and management	Teaching Unit (UE)	10h	27h		3 credits
UE Biotechnology	Teaching Unit (UE)	10h	17h		3 credits
UE Imaging technologies and applications	Teaching Unit (UE)	16h	22h		3 credits
UE How to establish relationships and links with the professional world	Teaching Unit (UE)	10h	35h		3 credits
UE How to build and manage a Commercial Programme	Teaching Unit (UE)	20h	24h		3 credits

UE Answers to customer's needs by Metrology	Teaching Unit (UE)	10h	25h	3 credits
UE Omnical method for selling and business ethic	Teaching Unit (UE)	10h	27h	3 credits

## Semester 10

	Nature	CM	TD	TP	Crédits
UE Internship (part II)	Teaching Unit (UE)				27 credits
UE Communication in scientific english (part II)	Teaching Unit (UE)				3 credits

## Pro2Bio 2nd year

### Master 2nd year

## Semester 9

	Nature	CM	TD	TP	Crédits
UE Ecosystème des entreprises	Teaching Unit (UE)				6 credits
UE Projet de fin d'études	Teaching Unit (UE)				6 credits
UE Ouverture professionnelle	Teaching Unit (UE)				3 credits
UE Entrepreneuriat de l'innovation	Teaching Unit (UE)				3 credits
UE Fundamental and Applied Microbiology	Teaching Unit (UE)				6 credits
UE Infectious diseases (part II)	Teaching Unit (UE)				6 credits
UE Pathology and immunology	Teaching Unit (UE)				6 credits
UE Immunity against cancers and infectious diseases	Teaching Unit (UE)				6 credits

## Semester 10

	Nature	CM	TD	TP	Crédits
UE Training period M2Pro2Bio	Teaching Unit (UE)				27 credits
UE Communication in scientific english (part II)	Teaching Unit (UE)				3 credits
UE Transverse teaching of choice	Teaching Unit (UE)				3 credits

## Physiology, epigenetics, differentiation and development 2nd year

Semester 9

Semester 10