

# Parcours Physiology, epigenetics, differentiation and cancer 2e année

Master Biologie



Niveau d'étude  
visé  
Bac +5



ECTS  
60 crédits



Durée  
1 an



Composante  
UFR de Chimie  
et de biologie



Langue(s)  
d'enseignement  
Anglais

## Présentation

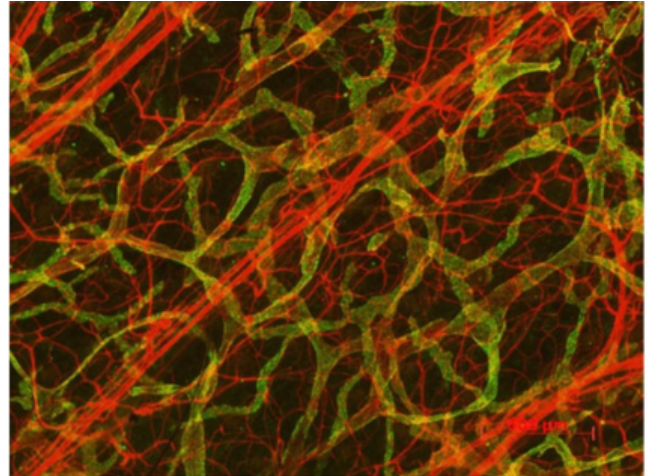
The students apply for admission in Master 2 (M2) Physiology, Epigenetics, Differentiation and Cancer (PhEDC) program following on a Master 1 (M1) Molecular and cellular biology program (MCB) at Université Grenoble Alpes or an equivalent M1 in another university. The first semester of the M1 MCB is common to all students of the Master in Biology. It is meant to complete the general scientific background of the enrolled students in various fields of biology (Physiology, Cell Biology, Genetics, Biochemistry...) while the second semester of M1 MCB introduces the students to the specific PhEDC program by offering them specialized courses and a 2-month internship in a laboratory.

The first semester of the M2 PhEDC includes 3 types of classes :

1. Specialized classes directly related to the topics of PhEDC program with specific emphasis on cell biology (cell identity and fate) and physiology. These courses will integrate the most recent advances concerning the mechanisms involved in the control of cell identity and the alterations associated with cancer phenotypes or aging.
2. Classes aiming at providing general knowledge or skills that are necessary to researchers (handling of a research project, entrepreneurship, English)

3. Optional classes proposing an initiation to other fields of biological sciences (neurosciences, biostatistics, high throughput biology..).

The second semester of the M2 PhEDC consists in a 6-month research internship in a Research laboratory.



The blood and lymphatic circulation networks in the mouse ear: a model for studying the development of blood vessels.  
Laboratoire de Biologie du Cancer et de l'Infection, INSERM U1036, CEA Grenoble, Université Grenoble Alpes.

## Dimension internationale

The 2nd year's PhEDC program is taught in English.

## Admission

### Conditions d'admission

Second year of the master's degree in Biology : to be eligible to apply, you should have completed (or you should be enrolled in) a first year of a master's degree in Sciences *i.e.* you should have validated 60 ETCS of a master's degree in Sciences by the end of your current academic year.

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

#### Master 2 Physiology, Epigenetics, Differentiation and Cancer

- Opening period for recruitment : **from 2th of march to 27th of march 2026** with e-candidat
- Opening period for recruitment : **from 20th of april to 15th of may 2026** with e-candidat

You want to apply and sign up for a course master ? Please be aware that the procedure differs depending on the diploma you want to take, the diploma you have already obtained and, for foreign students, your place of residence. Let us be your guide – simply follow this [🔗](#) link

### Droits de scolarité

UGA registration fees 2025 / 2026 : 254 € + 105 € CVEC

## Et après

### Poursuite d'études

Graduating from a master degree in Physiology, epigenetics, differentiation and cancer (PhEDC) leads to a career as a research engineer in academic or private laboratories. For the students interested in a career as a research scientist in academic institutions or in private pharmaceutical industries : consecutively to a master degree in Physiology, epigenetics, differentiation and cancer (PhEDC), the students may choose to continue with a PhD program offered by a french Doctoral school or foreign universities, and related to the aforementioned fields of biology. After the obtaining of their PhD, the young researchers usually undertake one or two post-doctoral trainings of 2-3 years each, in France or foreign countries, in order to diversify their expertise. They can then apply to permanent positions as:

- Full time researchers at the national French organizations of research ("CNRS", "INSERM", "INRA", "IRD" etc)
- Project managers in R&D laboratories from private biotech companies
- Researchers-teachers in French or foreign universities

## Infos pratiques

### Contacts

#### Responsable pédagogique

Claire Vourc'h

✉ [Claire.Vourch@univ-grenoble-alpes.fr](mailto:Claire.Vourch@univ-grenoble-alpes.fr)

#### Gestionnaire de scolarité

Scolarité Master Biologie

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


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## Lieu(x) ville

 Grenoble

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## Campus

 Grenoble - Domaine universitaire

# Programme

## Master 2e année

### Semestre 9

	Nature	CM	TD	TP	Crédits
UE Research project	UE	6h	30h		6 crédits
UE Ageing and longevity	UE	29h	7h		6 crédits
UE Epigenetics and cell differentiation	UE	20h	20h		6 crédits
UE Cardiovascular physiology and integrated metabolism	UE	15h	25h		6 crédits
UE Molecular biology of the cancer cell	UE		12h		6 crédits
UE Evolution & Development of Eukaryotes	UE	22,5h	18h		6 crédits
UE High throughput Biology	UE	36h			6 crédits
UE Biostatistics, Bioinformatics, Modeling , Part II	UE	27h	12h		6 crédits
UE Cancer disease : experimental and therapeutical approaches	UE	30h	10h		6 crédits
UE Neurophysiology	UE	24h	13,5h		6 crédits
UE Neurodegeneration and repair	UE	18h	22h		6 crédits
UE Synaptic Plasticity of the adult nervous system	UE	27h	9h		6 crédits

### Semestre 10

	Nature	CM	TD	TP	Crédits
UE Business plan of your start-up (entrepreneurship and science)	UE	14h	10h		3 crédits
UE Laboratory internship PhEDD (part II)	UE				24 crédits
UE Anglais	UE		24h		3 crédits
UE ETC	UE				3 crédits