

## Master in Biology

# Physiology, epigenetics, differentiation and cancer 2nd year

## Presentation

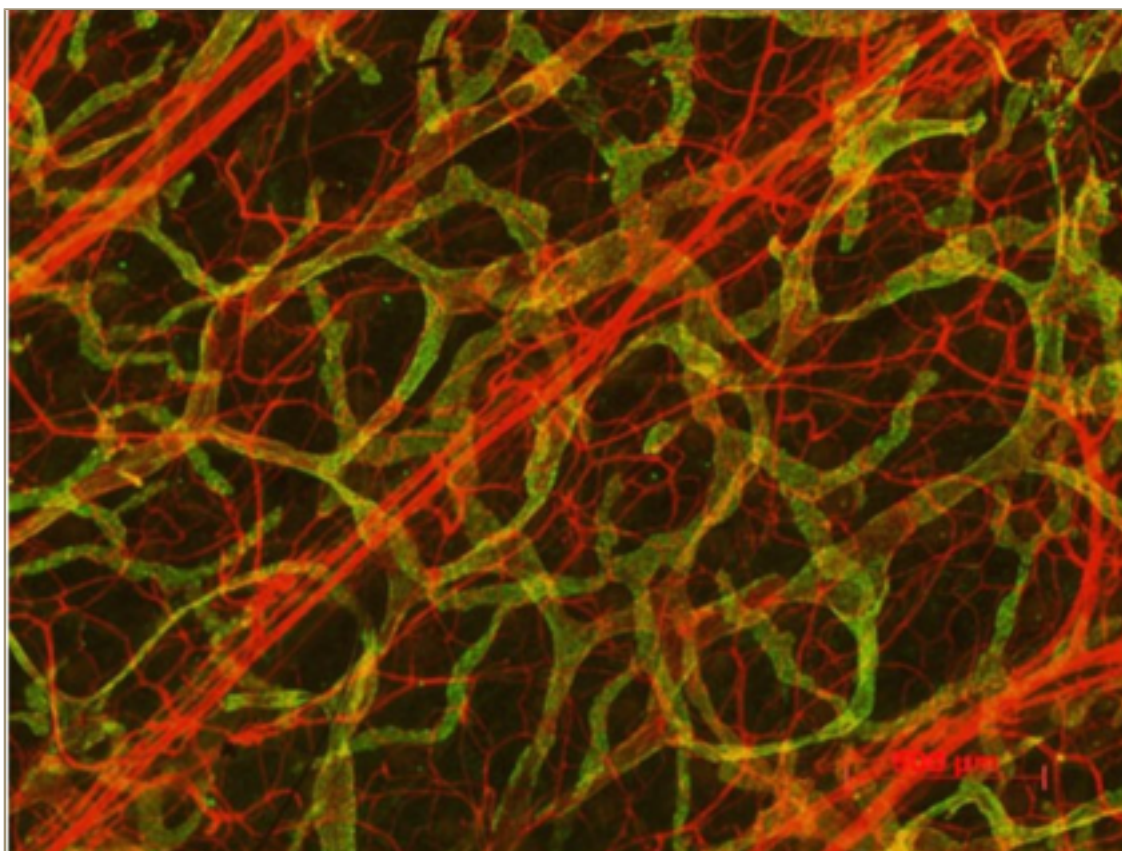
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The students apply for admission in Master 2 (M2) Physiology, Epigenetics, Differentiation and Cancer (PhEDC) program following on a Master 1 (M1) Molecular and cellular biology program (MCB) at Université Grenoble Alpes or an equivalent M1 in another 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.

## Registration and scholarships

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 \(VAPP\)](#).

Do you want to apply and sign up for a course ? 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](#)

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

- 2 sessions to apply:

- From 1 to 21 March included
- From 25 April to 13 May included

## Further studies

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

## Practicals informations :

- > Component : UFR Chimie-Biologie
- > level : Bacalaureate +5
- > Duration : 1 year
- > Course type : Initial and Continuing Education
- > Location(s) : Grenoble - University campus

## Contacts

### Program director

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### Administrative contact

Chemistry-Biology Course Services  
 ufrchimiebiologie-formation@univ-grenoble-alpes.fr

## Program

### Master 2nd year

#### Semester 9

<b>UE Research project</b>	6 ECTS
3 option(s) to choose from 5	
<b>UE Ageing and longevity</b>	6 ECTS
<b>UE Cardiovascular physiology and integrated metabolism</b>	6 ECTS
<b>UE Epigenetics and cell differentiation</b>	6 ECTS
<b>UE Evolution and development of Eukaryotes</b>	6 ECTS

<b>UE Molecular biology of the cancer cell</b>	6 ECTS
1 option(s) to choose from 11	
<b>UE Ageing and longevity</b>	6 ECTS
<b>UE Evolution and development of Eukaryotes</b>	6 ECTS
<b>UE Epigenetics and cell differentiation</b>	6 ECTS
<b>UE Cardiovascular physiology and integrated metabolism</b>	6 ECTS
<b>UE Molecular biology of the cancer cell</b>	6 ECTS
<b>UE High throughput Biology</b>	6 ECTS

**UE Biostatistics, bioinformatics,  
modeling (part II)** 6 ECTS

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**UE Cancer disease : experimental and  
therapeutical approaches** 6 ECTS

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**UE Neurophysiology** 6 ECTS

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**UE Neurodegeneration and repair** 6 ECTS

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**UE Synaptic Plasticity of the adult  
nervous system** 6 ECTS

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## Semester 10

**UE Business plan of your start-up  
(entrepreneurship and science)** 3 ECTS

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**UE Laboratory internship PhEDD (part  
II)** 24 ECTS

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1 option(s) to choose from 2

**UE Communication in scientific  
english (part II)** 3 ECTS

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**UE Transverse teaching of choice** 3 ECTS

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