

## Master in Biology

# Integrative structural biology (ISB)

## Presentation

The students will learn how to integrate the modern approaches of Integrative structural biology, which combine information of various length and time scales to get a global understanding of a biological process. At the end of this master program, the students will have acquired a global understanding of the experimental approaches undertaken to structurally characterize biomolecules and they will know about the potentials of these approaches for the study of biological systems. In particular they will be trained to start a PhD project in the field of Integrated Structural Biology.

The first year of the ISB master program (Molecular and cellular biology program) is meant to complete the general scientific background of the enrolled students in various fields of biology (cell biology, genetics and biochemistry) (semester 7) ; introduce the students to their specific master 2nd year's program by offering them specialized courses (semester 8) ; introduce the students to a research project, from its conception to its experimental undertaking and up to the report of the obtained results by an oral presentation as well as a written report (module of 18 ECTS during the semester 7; internship of 2 months in a research laboratory or in a R&D laboratory from a private company); allow the students to develop their written and oral skills for the search of internships and/or jobs as well as for the presentation of research projects and experimental results (mandatory modules of 3 ECTS - Communication tools - and 18 ECTS during the semester 7, 2 months internship during the semester 8).

The objectives of the 2 year ISB master program are to train the enrolled students in the complementary fields of Structural Biology, Biochemistry, Molecular and Cellular Biophysics.

## 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 ECTS 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 \(VAPP\)](#)

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. 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](#)

- 2 application campaigns are organized for the master 2nd year mention Biology
- Campaign 1: Campaign opening on e-candidate from 02 to 20 March 2020 included
- Campaign 2: Campaign opening on e-candidate from April 27 to May 15, 2020 included

## Further studies

Graduating from a master degree in Integrated structural biology 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 Integrated structural biology, the students may choose to continue with a PhD program depending from a french Doctoral school or foreign universities and related to the afore mentioned fields of biology. Consecutively to their PhD, the young researchers undertake one or two post-doctoral trainings of 2-3 years each, usually in 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
- Part time researchers, part time teachers in French or foreign universities

## Practicals informations :

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

## Contacts

### Program director

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### Administrative contact

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## Program

### Master 2nd year

#### Semester 9

<b>UE Research project</b>	6 ECTS
<b>UE Structure determination of biological macromolecules</b>	6 ECTS
<b>UE Integrative structural cell biology</b>	6 ECTS
<b>UE Recent advances and applications in structural biology</b>	6 ECTS
1 option(s) to choose from 3	
<b>UE Cancer disease : experimental and therapeutical approaches</b>	6 ECTS
<b>UE High throughput in biology</b>	6 ECTS
<b>UE Biostatistics, bioinformatics and molecular modeling (part II)</b>	6 ECTS

#### Semester 10

<b>UE Communication in scientific english (part II)</b>	3 ECTS
<b>UE Business plan of your start-up (entrepreneurship and science)</b>	3 ECTS
<b>UE Laboratory internship ISB (part II)</b>	24 ECTS