

# Cancer Biology

## Program Outline

The Master in Cancer Biology is one of the four degree-granting tracks of the Biology and Health Master. The training program is primarily research-oriented with an emphasis on interdisciplinary approaches to the study of cancer. The program includes two research internships in laboratories: a two-month long internship in the first year and a five-month long internship in the second year. Students learn about the fundamental bases and emergent areas in the field of cancer, from basic cell and molecular biology of cancer to translational and clinical research. They benefit from open access to state-of-the-art technological tools and direct interaction with expert scientists from the field of Cancer Biology. The program covers the basic molecular and cellular mechanisms driving oncogenesis, the complex interacting cellular and molecular networks with the tumor microenvironment dictating cancer development and metastatic dissemination, the clinical aspects of cancer pathology and therapeutic possibilities. The development of critical analysis and creative skills that must be applied in the

conception of research proposals, accessing and processing experimental data, and literature searches are also important components of the program.

## Admission Requirements

Bachelor degree or 180 ECTS equivalent in Biology or relevant Life Sciences field.

## Academic Cooperation

- › US: University of Arizona, Stanford University, City of Hope Medical Center
  - › Canada: McGill University
  - › Brazil: University of Porto Alegre
  - › Portugal: University of Lisbon
  - › Spain: University of Saragossa, University of Seville
- ... among other international partners of the University of Bordeaux in oncology labs.

## Program duration

2 years (120 ECTS).

## Language Requirements

- › Program taught entirely in English, a C1 level according to the CEFR is required.

## Fees and scholarships

- › Annual registration fees for all selected applicants are calculated according to the rules and regulations of the University of Bordeaux (approximately 400€).
- › Scholarships may be granted to selected applicants on demand.

## Strengths

- › Strong connections to a network of research laboratories (French National Center for Scientific research - CNRS, French National Institute of Health and Medical Research - INSERM, the University of Bordeaux and international laboratories) dealing with a broad range of topics in oncology.
- › State-of-the-art technologies for cancer modeling, diagnosis, and treatments.
- › A strong interdisciplinary research dynamic and learning environment, providing students with the possibility to interact with not only biologists, clinicians and other health professionals, but also physicists, mathematicians, chemists, computer scientists and philosophers of science working in the field of cancer.



# Year 1

## Semester 1

- › Cancer cell biology (9 ECTS)
- › Bioinformatics and omics (3 ECTS)
- › Imaging and molecular histology (3 ECTS)
- › Experimental design in biomedical sciences (3 ECTS)
- › Molecular and cell biology techniques (9 ECTS)
- › English (3 ECTS)

## Semester 2

- › Cancer immunobiology and immunotherapies (6 ECTS)
- › High-throughput sequencing and bioinformatics (3 ECTS)
- › Research internship (12 ECTS)
- › Molecular basis of pathologies (9 ECTS)
- › Optional: animal experimentation training and certification (6 ECTS)

# Year 2

## Semester 1

- › Microenvironment and tumor heterogeneity (6 ECTS)
- › Modeling and therapeutic innovation in cancer (6 ECTS)
- › Tutored interdisciplinary project (3 ECTS)
- › Communication and project conception (9 ECTS)

Two courses to be chosen from:

- › Concepts and causality in cancer (3 ECTS)
- › Microbiota and physiopathology (3 ECTS)
- › Pharmaceutical sciences (3 ECTS)
- › Other courses offered in the Biology and Health Master programs

## Semester 2

- › Research internship (30 ECTS)

## How to apply?

Applications may be completed online

## And after?

The Master in Cancer Biology prepares students for careers in academic research in biomedical sciences. They may pursue their studies further with a PhD or directly work in research laboratories as scientific staff. It also prepares students to compete for careers

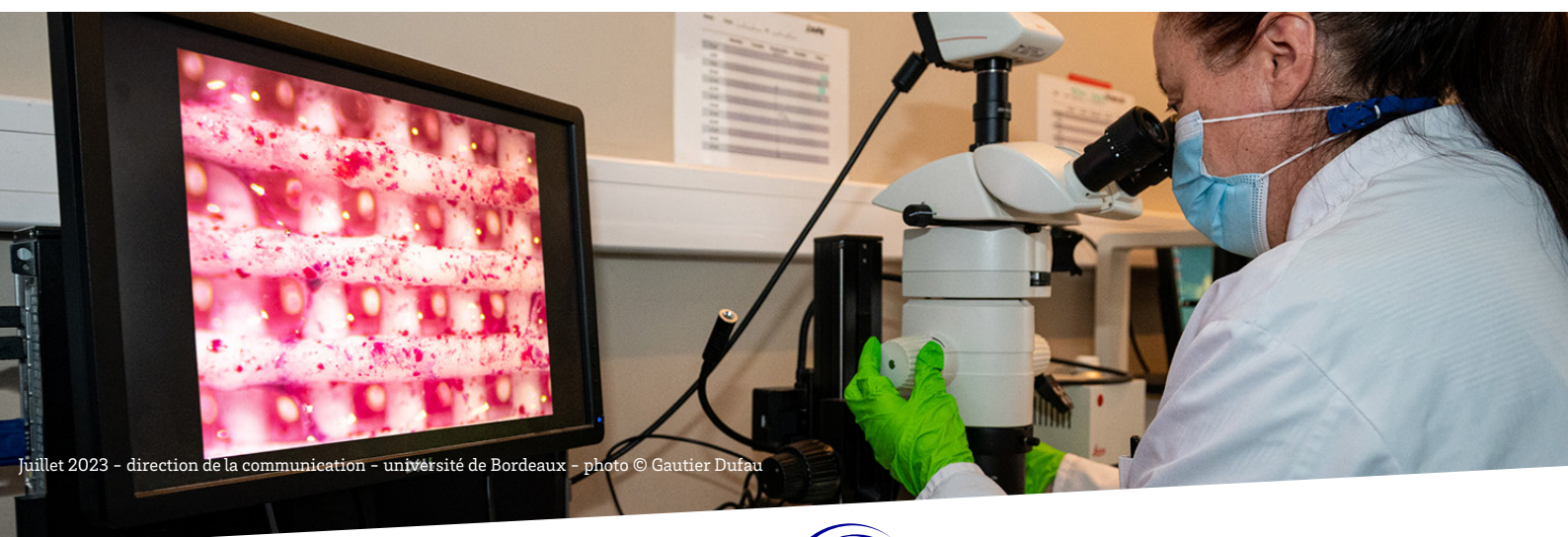
in the industrial sector (biotechnology companies, particularly in product development for the diagnosis and treatment of cancer, in pharmaceutical companies or clinical analysis laboratories). Graduates of the program also have the opportunity of applying for different professional positions in the healthcare system, such as hospitals or clinics.

Website



Contact

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