



MASTER IN **MOLECULAR MICROBIOLOGY**



www.unamur.be

A detailed scanning electron micrograph (SEM) of various bacteria. The bacteria are elongated, rod-shaped structures in shades of orange, purple, and pink, some appearing in clusters. The background is a soft-focus mix of similar colors.

MASTER IN

MOLECULAR MICROBIOLOGY



WHY STUDY AT UNAMUR ?

- UNamur values active learning and the availability of the academic staff is always greatly appreciated by students.
 - UNamur is easily accessible: 5 minutes' walk from the train station, 1 hour from Brussels National Airport or Brussels South Airport by public transportation.
 - UNamur is located in the centre of the pleasant and peaceful city of Namur, with its array of cultural and sports activities and its proximity to beautiful countryside.
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Studying microbes is crucial to tackle future challenges to human and animal health (multi-drug and antibiotic resistance; microbiota dysbiosis; emerging microbial pathogens), pollution (bioremediation; green energy) and biotechnology (synthetic microbiology and micro-biotechnology; food microbiology).

Unique in Belgium, the Master in Molecular Microbiology (MMM) provides the opportunity to study the microbial world in the context of basic and applied research, allowing you to face all these important challenges of the 21st century.

YOUR OBJECTIVES

- to understand and tackle a large diversity of molecular processes underlying microbial interactions with their environment;
- to manage the technical and conceptual aspects of a research project in Molecular Microbiology (project design, experimental strategies, critical data analysis, discussion and communication);
- to show a deep interest for international mobility and collaboration with international research groups.



WHY TO ENROL MMM ?

- The MMM is offered entirely in English, thereby facilitating and promoting international student mobility.
- You will learn cutting-edge approaches to cellular and molecular microbiology, biochemistry and bioinformatics applied to microbes.
- You will have access to dynamic research groups in Molecular Microbiology.
- Invited lecturers will introduce you to the worlds of industry and hospitals.
- The MMM is part of a European joint programme in Molecular Microbiology.

CAREER OPPORTUNITIES

The MMM opens doors to jobs in human research areas involving Microbiology:

- your hands-on experience of research over 3 semesters will provide you with the necessary credentials for a future job in research;
- you will develop a significant network of contacts in industry and in hospitals, thus connecting you with these communities.

PROGRAMME

The Master in Molecular Microbiology (MMM) is a research-oriented (120 credits) Masters programme offered entirely in English. The integration of the MMM within a European joint programme in association with

**Aix-Marseille University,
Marburg Phillips-Universität,
Université de Toulouse Paul Sabatier,
Tartu University,
Radboud University,
Lausanne University,**

promotes international mobility and provides access to a wide range of scientific expertise at two of the most prestigious European Microbiology Research Institutes.

> SEMESTER 1

The first semester is devoted to general and specialised microbiology courses taught by scientists from academia and from industry who address the essential elements of Molecular Microbiology with a particular emphasis on bacteriology. You will have the opportunity to use active learning methods such as Problem-Based Learning (PBL), inverted classrooms and integrated practical courses. You will also be offered the possibility to attend local and national scientific conferences.



For more course details, please visit:
www.unamur.be/sciences/etudes/bio

ECTS

GENERAL MOLECULAR MICROBIOLOGY	
Microbiology Basics	4
Molecular virology	2
Parasitology	2
Eukaryotic microorganisms	2
Applied and synthetic microbiology	3
Bioinformatic approach of microbial genomes and metagenomes	5
BACTERIAL TOPICS	
Microbial interactions and communities	2
Bacterial stress response and signaling	2
Pathogens and epidemiology	3
Antibiotics, from origin to resistance	2
Chemistry of the bacterial cell	2
Bacterial genetics and evolution	2
Bacterial cell biology	2
TOTAL	33



> SEMESTERS 2-4

The last 3 semesters are dedicated to research projects in several research groups within UNamur and partner laboratories.

During the second semester, the emphasis is put on acquiring (1) skills in writing a CV and a motivation letter and preparing an interview in English and (2) technical skills in Molecular

Microbiology and the basics of scientific writing. These skills will be further developed during the third semester in the context of your Master thesis, when you will improve your autonomy and scientific communication.

During the last semester, you will have the opportunity to do a professional internship in industry or in an academic research laboratory abroad.

ECTS

SEMESTER 2	
Intensive integrated practical courses	3
Professional English	2
Research initiation (laboratory work and/or bibliographic search)	22
SEMESTER 3	
Master thesis	30
SEMESTER 4	
Internship (laboratory or industry)	30
TOTAL	87

CONDITIONS FOR ADMISSION

STUDENTS WITH A FIRST DEGREE OBTAINED IN BELGIUM

DIRECT ACCESS

- Bachelor in Biology
- Master in Biology

ACCESS BY APPLICATION

- Bachelor in Biomedical Sciences
- Bachelor in Veterinary Medicine
- Bachelor in Engineering orientation Bioengineering
- Holder of a diploma delivered outside of European Union

STUDENTS WITH A FIRST DEGREE OBTAINED OUTSIDE OF BELGIUM

If you have a degree from an institution outside of Belgium, you will need to complete and return the admissions request form before 30 September (31 March for students from outside the European Union):

www.unamur.be/inscription

Your level of English (minimum B2) must be confirmed by an official English certificate or through the online interview with the jury.

For admission to Masters degrees, please contact the Admission Service.



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INFORMATION

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ADMISSION

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