Master in BIOMEDICINE

> Preclinical Research
> Clinical Research
> Biomedical Data Management
> Translational Cosmetic and Dermatological Sciences

WWW.UNAMUR.BE
The University of Namur offers five Masters in Biomedicine, taught entirely in English. These degree programmes will, via research in the field of life sciences, lead you through each stage in the development of new therapeutic molecules, biomarkers and diagnostic testing.

Two areas of specialisation in clinical research are also offered, leading to careers such as clinical research associate, clinical project manager, clinical trials assistant or data manager. These professions involve setting up and monitoring clinical trials, ensuring the quality of data gathered, and compliance with applicable regulations, as well as the management of data processing.

Our 120-credit Masters are spread over two years, and the choice of a professional focus will ensure your expertise in one of the following areas:

<table>
<thead>
<tr>
<th>Program</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preclinical Research</td>
<td>at the University of Namur</td>
</tr>
<tr>
<td>Clinical Research</td>
<td>at the University of Liège – a joint degree with the University of Namur</td>
</tr>
<tr>
<td>Biomedical Data Management</td>
<td>at the University of Liège – a joint degree with the University of Namur</td>
</tr>
<tr>
<td>Translational Cosmetic and Dermatological Sciences (EMOTION)</td>
<td>a double degree from the University of Piemonte Orientale (Italy) and either the University of Namur or the Miguel Hernández University (Spain)</td>
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Our 60-credit Master lasts one year and provides a basic grounding in Biomedicine, in particular in the field of biopharmaceuticals. at the University of Namur

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### Your objectives

- To lead **scientific projects** which aim for greater understanding of the molecular and cellular mechanisms of pathologies and to improve treatment; to analyse raw data, interpret the results and present observations clearly;
- To master every stage of the **development of new therapies**, in particular biotechnology- or cell-related therapies;
- To develop **biomarkers** related to different therapies, for example using genetics and pharmacogenomics;
- To lead and monitor **preclinical or clinical trials** and to be responsible for the administrative management of testing;
- To ensure the **production quality** of biotechnological and biosimilar products, cell therapies (stem cells), gene therapies, tissue engineering, medical devices (implants, drug delivery devices, etc.) and so on;
- To monitor the quality, safety and efficiency of a **drug** before it is placed on the market.
Preclinical and clinical research form an intrinsic part of the process of developing new therapies.

At UNamur, you have the opportunity to choose your area of expertise from one of these two specialist fields.

The 120-credit Master in Biomedicine with **professional focus in preclinical research** centres your learning on the laboratory phase of research into new products and techniques before they are tested on humans. It is based on a solid grounding in **biopharmaceutics** (pharmacotherapy, health technology assessment, biosynthetic drugs and pharmacovigilance), **biotechnology** and **therapy** (clinical and non-clinical experimental approaches, biomedical engineering).

The 120-credit Master in Biomedicine with **professional focus in clinical research** is based around the research carried out on human beings when products and techniques are sufficiently far-advanced. This Master is offered by UNamur but also relies on the expertise of the University of Liège, which provides all courses related to this professional focus.

Whichever focus you choose, your degree programme will boast a significant professional dimension thanks to a large number of visits to companies and hospitals, practical projects and a 5-month placement in a laboratory or company in **Belgium or abroad**.

You will also have the opportunity to write a **thesis** based in a research laboratory or a hospital, working on a personal project right through from design to completion.

**Why should I choose this programme?**

- **Unique programmes in the Wallonia-Brussels Federation** with strong links to the biopharmaceutical and biotechnological industry;
- Specialised studies in the field of **drug development**, including basic and translational research, biotechnology (scale-up and 3D reconstruction), quality assurance and regulatory affairs;
- **Rapid integration into the world of work**, thanks to company and hospital visits and a placement;
- An excellent **command of field-based English**;
- An official qualification as a **bio-technician in handling laboratory animals and managing experiments**, in addition to your Masters degree;
- **Experience abroad**;
- **Over 50% options of your choice**.
> Programme structure

<table>
<thead>
<tr>
<th>Core subjects</th>
<th>ECTS</th>
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</thead>
<tbody>
<tr>
<td>Pharmacotherapy • Preclinical Drug Development • Clinical Trials • Applied Statistics for Preclinical and Clinical Studies • Negotiation, Communication and Networking • Bioethics • Quality Assurance: GMP, GCP, GLP and Auditing • Pharmacovigilance • Pharmaco-Economy and Health Technology Assessment</td>
<td>31</td>
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<table>
<thead>
<tr>
<th>Elective modules</th>
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</thead>
<tbody>
<tr>
<td>Pharmacogenomics • Medication Adherence and Patient Empowerment • Introduction to Patient-Reported Outcomes • Investigator-Initiated Trials • Integrative Approach of Organelle Pathology • Interdisciplinary Programme in Healthcare Innovation</td>
<td>10</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Professional focus</th>
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<tbody>
<tr>
<td>Preclinical Research</td>
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</tr>
<tr>
<td>Basic Research Modules • Current Topics in Molecular Cell Biology • Laboratory Research Training • Biopharmaceuticals • Biotechnology • Drugs and Society • Innovation in Biomedical Engineering • Biomarkers, Biobanks, Personalised Medicine • Vaccinology and Immunotherapy • Project Management: Development of Biomarkers</td>
<td>30</td>
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<tr>
<th>Clinical Research</th>
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<tbody>
<tr>
<td>Patient and Researcher Interplay • Medical Psychology • Biorisk Management in Clinical Research • Intellectual Property and Patents • Writing and Reading Skills • Biomarkers and Surrogate Markers in Clinical Research • Pathophysiology • Evidence-Based Medicine • Clinical Trials of Medical Devices • Bioinformatics • Clinical Study Management • Clinical Research Associate Training • Clinical Project Management both at the University of Namur and at the University of Liège</td>
<td>19</td>
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<tr>
<th>Professional internship</th>
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<tbody>
<tr>
<td>Introduction to Scientific Research and Thesis</td>
<td>30</td>
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<tr>
<td>Total</td>
<td>120</td>
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**Diagram:**
- Ideation
- Exploratory Development
  - Synthesis of compounds
  - Screening
- Preclinical Research
  - Core subjects
  - Elective modules
- Clinical Research
  - Core subjects
  - Elective modules
- Development
  - Testing of drug on 3-10,000 patients (Phase III)
- FDA registrations
  - In-depth safety studies
- New Drug
  - Analysis of clinical data
  - FDA registrations
  - Clinical Research
  - Preclinical Research
  - Development
Offered by ULiège, the 120-credit Master in Biomedicine with professional focus in Biomedical Data Management also benefits from the renowned expertise in data management of UNamur’s Faculty of Computer Science. This focus will lead to a specialisation in medical data management.

### Professional focus in Biomedical Data Management

- Synergies with UNamur’s Faculty of Computer Science in terms of both teaching and research;
- Reinforcement and development of research projects within the Namur Research Institute for Life (Narilis) at UNamur and the Interdisciplinary Biomedical Research Centre (GIGA) at ULiège.

### Why should I choose this programme?

- Programme structure

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<tr>
<td>Oncology • Biorisk Management in Research and Development • Translational Research • Multivariate Statistical Analysis • Communication Techniques • Normal and Pathological Cellular Regulation (Advanced) • Haematology and Hemostasis • Advanced Genomics • Biostatistics • Using Scientific English • Elements of Bioinformatics • Clinical Chemistry</td>
<td>23</td>
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<th>Advanced subjects</th>
<th>10</th>
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<tr>
<td>Immunology and Vaccinology • Cardiovascular Biology • Neurosciences • Nutrition and Gastrointestinal Tract Biology • Pharmacology and Toxicology</td>
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<tr>
<td>Oncology and Immunology • Preclinical Neurosciences • Clinical Neurosciences • Gastrointestinal Tract from Bench to Bedside • Advanced Concepts in Drug Therapy and Development • Clinical Aspects of Drug Therapy • Advances in Proteomics • Medical Records and Hospital Information • Legislation and the Legal Aspects of Hospitals and Medicine • Advanced Radiobiology and Radiation Protection • Advanced Biological Analysis</td>
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For more information, please visit [www.unamur.be/en/med/study-biomedicine](http://www.unamur.be/en/med/study-biomedicine)
UNamur is one of the European partner universities which together offer the European Master in Translational Cosmetic and Dermatological Sciences (EMOTION).

This 120-credit Master, limited to only 30 students, will entitle you to a double degree from the University of Piemonte Orientale (Italy) and one of its partner institutions: the University of Namur or the Miguel Hernández University (Spain).

You will have the opportunity to experience teaching at these universities, all experts in their field, whilst gaining international experience and learning about other ways of teaching and about the cultures of the partner countries.

EMOTION’s mission is to educate the future generation of translational scientists and professionals in dermocosmesis and dermatologic therapies, and to equip them with the skills and competences needed to work in R&D.

This Master comprises two semesters in Italy and one semester in either Belgium or Spain.

In the first year, held in Italy, courses in Anatomy, Physiology, Pharmacology, Dermatology, Regulatory Affairs, Pharmaceutical Technology and Medicinal Chemistry are taught together with workshops on Project Management, Drug Discovery, and the Features of the Pharmaceutical and Cosmetic Sectors.

In the first semester of the second year, you are invited to choose whether you wish to continue your studies in Preclinical Cosmetic and Pharmaceutical Research (in Spain) or in Clinical Development (at the University of Namur):

You will also attend workshops intended to introduce you to the world of industry and provide you with transferable and soft skills (including communication, job-seeking skills and know-how for entrepreneurship).

Finally, in the second semester of the last year, you will have the opportunity to carry out work on your thesis in industry or in academia at the three partner Universities and at Humboldt University (Germany).
Career opportunities

Biomedicine can lead to many different careers, mainly in the area of research, either basic or applied. This research is carried out at universities, university hospitals, government agencies (e.g. public health institutes, drug and health product agencies, health policy bodies, etc.), and in laboratories in the biopharmaceutical, biotechnological, nutrition, cosmetics and medical equipment sectors.

**Basic biomedical research** aims to understand, via an experimental approach, how the human being works at the level of cells and molecules. Its conclusions may one day lead to clinical applications.

**Applied biomedical research** puts into practice the advances made in basic research. Its objective is to improve the way conditions are diagnosed and treated. For example, it might aim to design new vaccines or new diagnostic tests. It also paves the way for careers in the pharmaceutical or cosmetics industries.

**Clinical research management** involves the setting up and coordination of clinical trials in hospitals, clinical research organisations and the biopharmaceutical industry, and can lead to the following careers:

- **clinical trials assistant** - assists investigating doctors in carrying out clinical trials;
- **clinical project manager** - executes the clinical trial development plan, in accordance with regulations and deadlines;
- **clinical research associate** - sets up and monitors the clinical trials in a particular project, whilst ensuring the quality of the data gathered in compliance with regulations;
- **data manager** - manages the processing of data obtained in the context of the clinical trial.

As well as research, the clinical sector offers a large number of other career paths: toxicology, nutrition, clinical biology, bioengineering, medical imaging, etc., as well as medical data management.

Biomedicine can also lead to many other opportunities in the fields of research and development, production, insurance and quality control, regulatory affairs, intellectual property, consultancy, medical representation, teaching, and so on.

Finally, the Master in Biomedicine allows you to further your studies in the **third cycle** (Doctorate) or to take an interuniversity certificate in Health Product Regulatory Affairs, offered jointly by UNamur and ULiège.
Conditions for admission to the Master in Biomedicine

MASTER 120 IN BIOMEDICINE, PROFESSIONAL FOCUS IN PRECLINICAL RESEARCH
MASTER 120 IN BIOMEDICINE, PROFESSIONAL FOCUS IN CLINICAL RESEARCH
MASTER 60 IN BIOMEDICINE

Students with a first degree obtained in Belgium

> DIRECT ACCESS
  • bachelier en sciences biomédicales.

> ACCESS subject to a maximum of 15 ADDITIONAL CREDITS
  • bachelier en sciences pharmaceutiques, médecine, médecine vétérinaire, sciences biologiques, sciences dentaires, kinésithérapie et réadaptation, sciences de la matricité, sciences chimiques;
  • master en ingénieur civil en chimie et science des matériaux, sciences de la santé publique, kinésithérapie et réadaptation.

> ACCESS subject to AN ADDITIONAL 15 TO 30 CREDITS
  • bachelier (type court) en sage-femme;
  • bachelier de spécialisation (type court) en anesthésie, soins intensifs et aide médicale urgente.

> ACCESS subject to AN ADDITIONAL 30 TO 60 CREDITS
  • bachelier (type court) en diététique, ergothérapie, soins infirmiers, technologie en imagerie médicale, technologie de laboratoire médical;
  • bachelier (type court) en chimie orientation biochimie, biotechnologie, chimie appliquée, environnement.

> ACCESS BY APPLICATION
  • other higher education qualifications obtained in the French Community of Belgium;
  • higher education qualifications obtained outside of the French Community of Belgium;
  • on the basis of VAE (‘Valorisation des acquis de l’expérience’ – recognition of previous experience).

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

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 31 August (30 April for students from outside the European Union):

www.unamur.be/en/enrolment

MASTER 120 IN BIOMEDICINE, PROFESSIONAL FOCUS IN BIOMEDICAL DATA MANAGEMENT

This Master is offered jointly by UNamur and ULiège. For details of conditions for admission, please see the ULiège website: www.enseignement uliege.be/cms/c_9780514/en/enrol

MASTER IN TRANSLATIONAL COSMETIC AND DERMATOLOGICAL SCIENCES (EMOTION)

For more information concerning this Master as well as related Erasmus Mundus bursaries, please visit www.emotion-master.eu

For more information, please visit:
www.unamur.be/en/med/study-biomedicine

Information

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inscription@unamur.be
www.unamur.be/en/teaching/admission

Admission