MASTER IN BIOMEDICAL SCIENCES

MAJORS: NUTRITION AND METABOLISM • NEUROSCIENCES • TISSUE ENGINEERING AND REGENERATIVE MEDICINE • RADIATION SCIENCES • MEDICAL GENETICS • IMMUNITY AND INFECTION • SYSTEMS BIOLOGY • CANCER • EDUCATION AND COMMUNICATION

120 ECTS – LANGUAGE: ENGLISH – DIPLOMA: MASTER OF SCIENCE

CONTENT AND STRUCTURE

A master in Biomedical Science has the expertise to contribute to translational research regarding current biomedical problems on a international academic level. You will have the know-how to develop, in a critical and creative manner, new insights regarding human health (you will bridge the gap between 'pure' sciences and the medical-clinical practice).

It is a master of 120 ECTS credits. It consists of general subjects, specialised biomedical subjects, a research internship and a master's dissertation. In the second year of the master, you will have 18 credits to spend on elective courses. All these courses together form two learning trajectories aiming at: your growth as an independent researcher and enabling you to bridge the gap between scientifical knowledge and the medical-clinical practice.

There are nine majors to choose from. Eight of them deal with current, constantly evolving, biomedical fields. You choose one major in close accordance with your research internship and the subject of your master's dissertation. Each major has five complementary subjects. They follow a trajectory that starts from fundamental research and leads to clinical applications and insights, the so-called translational research. Major nine, Education and communication, allows you to follow a part of the teacher's training.

- The major **Nutrition and metabolism** deals with the methods of nutrition research and the relationship between nutrition, metabolism and pathology: diabetes, obesity, hypertension, atherosclerosis etc. The major has a direct link with the medical laboratory diagnostics and the underlying validation systems.
- The major **Neurosciences** focusses on brain research and its diseases and dysfunctions, such as epilepsy. You will deal with medical imaging of the brain, the neurofysiological principles of brain activity, diseases of the nerve system (origins and treatment), experimental behavioral sciences and research of cognitive and mental functions.
- The major **Tissue engineering and regenerative medicine** offers a profound knowledge in cellular biological processes regarding aging, cell death, inflammation, tissue regeneration and stem cell biology. It also deals with the multidisciplinary field of tissue engineering.
- The major **Radiation Sciences** can be considered as the run-up for a course as expert in medical radiation physics for radiation protection of the patient in medical diagnostics and therapy. The most recent insights in radiation biology and radiation dosimetry will be studied as well as the technological innovations in radio therapy.
- The major **Medical Genetics** focusses on in-depth insight in the newest developments in the field of human genetics; more specifically genetic diagnostics, the genetic basis of syndromes (e.g. neuroblastoma, connective tissue diseases, mental retardation, genetic cancers) and the fast evolving genetic research techniques will be studied extensively.
- The major **Immunity and infection** studies the normal functioning of the human immunity on cellular and molecular level. A large number of current topics are dealt with: immuno pathologies, infection diseases, molecular pathogenesis of viruses and bacteria, the development of therapeutic vaccines and immuno modulators.
- The major **System Biology** studies the functional system as a whole: the human being, the exemplary organism, the organism or the cell as a whole are objects of the study. Attention is paid to the comparison of a 'system' in disease and health as to objectively mapping out the disruption and its effects in the molecular mechanisms. The major strongly relies on the explosive technological developments in the last decennium, more specifically in the highly advanced execution technologies and bio-informatics.
- The major **Cancer** deals in five complementary subjects both with biological aspects (genetics, proliferation and survival, communication and metastasis) and clinical aspects of cancer. Special attention is paid to personalised medicine.
- The major **Education and communication** allows you to follow a part of the teacher's training (30 credits).

LABOUR MARKET

Research in the field of biomedics will remain very important due to the major social relevance for healthcare. A biomedical researcher will be able to contribute to the understanding of the mechanism of diseases and will be able to improve the molecular diagnostic techniques of clinical treatments. Personalised medicine will gradually gain importance and the professional future in biomedical research looks promising.

If you are looking for a job as a biomedical researcher, you have different options. You can choose for an academic research environment by starting a PhD at a university or you aim at working in research oriented companies or in a university hospital. Besides universities and research oriented companies, there is also the option of working in research institutions run by the government. Finally, also teaching jobs, both in secondary schools as in higher education, are an option for masters in biomedical sciences.

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TOELATINGSVOORWAARDEN VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

Rechtstreeks:
- Ba biomedische wetenschappen

Via voorbereidingsprogramma:
- Ba bio-ingenieurswetenschappen: cel- en genbiotechnologie (58 sp)
- Ba biochemie en biotechnologie (50 sp)
- Ba diergeneeskunde (55 sp)
- Ba geneeskunde (66 sp)

PRAKTISCHE INFORMATIE

Studieprogramma:
https://studiegids.ugent.be
> faculteiten > opleidingstypes
> ga naar de opleiding van je keuze

Voorbereidende initiatieven
Als student in het voorbereidingsprogramma kun je een bijscholingsdag wiskunde volgen om je basiskennis bij te spijkeren. Meer informatie op https://studiekiezer.ugent.be. Selecteer deze opleiding en je vindt toelichting en praktische details onder de rubriek 'Vlot van start'.

Infomomenten
Masterbeurs
www.ugent.be/masterbeurs

ADMISSION REQUIREMENTS FOR INTERNATIONAL DEGREE STUDENTS

An academic diploma of Bachelor (or Master) in Biomedical Sciences or an equivalent to this.

LANGUAGE
More information regarding the required knowledge of English:
www.ugent.be/languagerequirements

PRACTICAL INFORMATION

Study programme:
www.ugent.be/coursecatalogue
> by faculty > programme types > select your programme

Application deadline for international degree students
- for students who need a visa: 1st of March
- for students who do not need a visa: 1st of June

www.ugent.be/deadline

Enrolling institution
Ghent University

Tuition fee
More information on:
www.ugent.be/tuitionfee

Contact
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