

MASTER IN BIOMEDICAL SCIENCES

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

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

CONTENT AND STRUCTURE

A master in Biomedical Sciences has the expertise to contribute to translational research regarding current biomedical problems on an international academic level. To reach this we offer a program entirely in English. You will have the knowhow to develop, in a critical and creative manner, new insights regarding human health thereby bridging the gap between 'pure' sciences and the medical-clinical practice.

The master of 120 credits consists of specialised biomedical topics, courses that prepare for the professional life, 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 routes aiming at: your growth as an independent researcher and preparing you for a liaison function between scientists, engineers and medical-clinical practitioners.

There are eight majors to choose from: each deals 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 complementary subjects. They start from fundamental research and lead to clinical applications and insights, the so-called translational research.

- 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 neurophysiological principles of brain activity, diseases of the nerve system (origins and treatment), neurogenetics, experimental behavioral sciences and research of cognitive and mental functions.
- The major **Tissue engineering and regenerative medicine** is an ever-emerging interdisciplinary field of biomedical research; which combines life, engineering and materials sciences, to progress the maintenance repair and replacement of diseased and damaged tissues. The major provides in-depth training in this branch of biomedical science, including cell death, stem cell biology, biomaterials, and tissue/organ engineering.
- The major **Medical 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, radiation dosimetry and radiochemistry will be studied as well as the technological innovations in radiation sciences.
- The major **Medical Genetics** provides deeper insights into the newest developments in human medical genetics including the mono- and polygenetic basis of inherited disorders, developmental genetics and cancer genetics. Further focus goes to state-of-the-art sequencing technology, data processing and analysis both in clinical and research setting, and emerging functional genomics technology.

- 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 object of study are the complex interactions that occur at the molecular level within a human being, a model organism, or a cell. Attention is being paid to changes that cause such a system to transition from health to disease, and to quantify the impact of these changes by analyzing their disruptive effects on the underlying molecular mechanisms. The major strongly relies on the key technological developments that have pushed molecular biology forward in the last decennium, specifically regarding advanced high-throughput 'omics' technologies and bioinformatics.
- The major **Cancer** studies the biological aspects (genetics, proliferation and survival, communication and metastasis) and clinical aspects of cancer. Biological and clinical knowledge is applied into personalized medicine.

As a biomedical master student you have the opportunity to perform your internship (1st master – 1st semester) or your master's dissertation (2nd master – 2nd semester) at one of our partner universities abroad (Coimbra, Zurich, Dublin, Varese, Sassari, Paris ...).

Because all courses of the master in Biomedical Sciences are offered in English, (part of) the programme can be taken up by exchange students from other international universities.

If you want to combine your master's degree with a teacher's degree, there is the option of following an 'Educatieve master' instead of the above described master. The 'Educatieve master' however is an exclusively Dutch taught programme. More information can be found on www.ugent.be/educatievemaster.

CAREER PERSPECTIVES

Research in the field of biomedical sciences 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. Personalized 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. There are also opportunities of working in pharmaceutical, biotechnology companies or in research institutions run by the government. Finally, jobs in the public health, environmental, food industry and bioinformatics sector 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

Infosessie

zaterdag 9 mei 2020 - 10u.-12u. UZ Gent, campus UZ, auditorium A

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/language/requirements

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

Trajectbegeleiding

Evelien Van Waes – Sofie De Bonte

T 09 332 53 69 of 09 332 11 04 – traject.ge@ugent.be

www.ugent.be/ge > monitoraat

Contact

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