Looking for an internationally respected master programme that will open up exciting career opportunities in the pharmaceutical industry and research? Potential employers hold our Medical and Pharmaceutical Biotechnology programme in high regard thanks to its broad curriculum.

www fh-krems ac at
MEDICAL AND PHARMACEUTICAL BIOTECHNOLOGY

Developing high-level expertise in identifying, characterising and manufacturing biopharmaceuticals is an essential aspect of this master programme. Manufacturing biopharmaceuticals also requires extensive knowledge of the applicable legal framework and the quality assurance procedures which play a vital part in an interdisciplinary setting. In order to prepare our students for the upcoming trends, we also offer complementary training in development, application and production methods for quality- assured tissue and organ replacements.

AT A GLANCE

Full-time
Courses usually take place from Monday to Friday.

English
The language of instruction is English. This prepares you for a career in a multi-cultural environment.

Four semesters
The degree programme lasts two years, with a total workload of 120 ECTS. Graduates receive the academic degree of Master of Science in Engineering (MSc).

Admission
Undergraduate degree in a relevant natural sciences or engineering discipline (bachelor’s degree or equivalent, minimum 180 ECTS). Amongst others, these disciplines are accepted: Biotechnology or Biomedical studies, Biochemistry, Molecular Biology or Pharmacology, Biomedical Analytics, Chemical Engineering, Nanotechnology, Bioinformatics, Biology, Chemistry, Physics

Study fee
EU/EEA citizens pay a study fee of EUR 363.36 per semester, plus the student union fee.
On the master programme, you enhance your methods-based and problem-solving competencies, putting you in a position to overcome the challenges associated with developing and producing innovative treatments for cancer, autoimmune conditions and neurodegenerative diseases. You use cutting-edge and interdisciplinary methods, such as culturing “mini tumours” to help predict the effects of cancer treatments.

Medical biotechnology has seen some major breakthroughs in recent years, such as immune checkpoint inhibitors (PD-1) for the treatment of advanced melanomas. Small interfering RNA (siRNA) molecules are currently being tested for use in potential treatments for cancers and viral diseases, which are expected to come on to the market in the next few years. High-throughput technologies in areas such as next-generation sequencing (NGS), mass spectrometry and imaging are becoming increasingly important in the development of new treatments. This means there is going to be an ever greater focus on linking together large data sets, and integrating the clinical results of treatment.

If you take this elective, you will gain detailed insights into bioprocess engineering, process automation, and especially fermentation. This expertise will give you the skills required to take on positions at all types of biotech companies – large pharmaceutical businesses as well as small start-ups specialising in innovative products such as nutraceuticals. You’ll be able to contribute in a wide range of areas encompassing the development, testing and large-scale manufacturing of brand-new substances.

In the bioprocess engineering lectures and practicals, you’ll use cutting-edge analytical techniques, ranging from simple online methods – which you’ll also evaluate – through to liquid LC-MS for proteomics work.

Bioprocess Engineering

Advanced Therapeutics Development

Tip

Double Degree Option: A particularly attractive option is the double degree we offer in conjunction with Linköping University in Sweden. Besides obtaining a Master of Science at IMC Krems, you will also be accredited with completing the “Experimental and Medical Biosciences” programme at our esteemed partner institution.
Raphaela Wagner is studying for a master degree programme in Medical and Pharmaceutical Biotechnology after completing her bachelor’s degree at IMC Krems.

Top job prospects
My keen interest in science and medical research as well as a stay in the US reassured me that the English-language study programme Medical and Pharmaceutical Biotechnology at IMC Krems was the perfect solution for me. The ideal conditions for my professional life also made the master’s degree attractive.

Unmatched team spirit
The enthusiasm of students and teachers are a real highlight for me. We even meet with professors during our free time to chat about the latest findings in cancer research. The programme also organises the annual Life Science Meeting, which brings together international research projects from academia and industry. The team spirit at IMC Krems is incomparable.

Practical laboratory courses
I benefit most from the applied laboratory courses, which make it possible to apply the theory in practice. In small groups we learn, for example, how to genetically modify bacteria and yeast species, to breed human 3D tumours or to work with a mass spectrometer.

Insights into processes
For me, the quality and quantity of the processes that are necessary to develop, produce and market a drug are surprising. Probably only few people know that it takes at least 13 years and costs around 2.5 billion euros to develop a possible innovative idea into a safe drug.

Diverse future prospects
I would like to specialise in the development of drugs in the field of neurodegenerative diseases. No matter if you study for a doctorate or a career in a pharmaceutical company – I know I’m in good hands with my education.