Faculty of Medicine

VABME, Master Programme in Biomedicine, 120 credits

Masterprogram i biomedicin, 120 högskolepoäng

Second cycle degree programme requiring previous university study / *Program med akademiska förkunskapskrav och med slutlig examen på avancerad nivå*

Decision

The programme syllabus is established by Undergraduate Education Board, Faculty of Medicine 04-03-2021 (U 2021/204) to be valid from 11-03-2021, autumn semester 2021.

Programme description

The Master's programme consists of courses in the main field of biomedicine. It is designed to provide students with both breadth and specialisation through combinations of compulsory and elective courses. The programme is based in an internationally competitive research environment including world-leading infrastructures in which most of the teaching is conducted by active researchers at the faculty. It results in a degree of Master (120 credits) in biomedicine specialising in either industrial or academic research. Irrespective of specialisation, the programme will provide knowledge and expertise that prepares the student for both an academic and industrial career.

The objective of the programme is to provide students with cutting-edge expertise in biomedicine that makes them well prepared to independently contribute to biomedical research and development in teams as well as in leadership positions, in academic environments as well as in private sector companies and the public sector.

Second-cycle courses in a number of fields of biomedical research are intended to prepare students for medical research and development. There are also opportunities for specialisation in adjacent and supplementary subject fields through collaboration.

The language of instruction on the programme is English.

Goals

On completion of the programme, the student must have achieved the learning outcomes specified in the Higher Education Ordinance (2006:1053), Annex 2, Qualifications Ordinance:

Knowledge and understanding

For a Degree of Master (120 credits) the student shall

- demonstrate knowledge and understanding in the main field of biomedicine, including both broad knowledge of the field and a considerable degree of specialised knowledge in certain areas of the field as well as insight into current research and development work
- demonstrate specialised methodological knowledge in biomedicine.

Competence and skills

For a Degree of Master (120 credits) the student shall

- demonstrate the ability to critically and systematically integrate knowledge and analyse, assess and deal with complex phenomena, issues and situations even with limited information,
- demonstrate the ability to identify and formulate issues critically, autonomously and creatively as well as to plan and, using appropriate methods, undertake advanced tasks within predetermined time frames and so contribute to the formation of knowledge as well as the ability to evaluate this work,
- demonstrate the ability in speech and writing both nationally and internationally to clearly report and discuss his or her conclusions and the knowledge and arguments on which they are based in dialogue with different audiences,
- demonstrate the skills required for participation in research and development work in biomedicine or autonomous employment in some other qualified capacity,
- demonstrate the ability to engage in teamwork, also in the capacity of manager, with other staff categories within the field of biomedicine, and
- demonstrate the ability to provide popular science presentations and applications of biomedicine

Judgement and approach

For a Degree of Master (120 credits) the student shall

- demonstrate the ability to make assessments in the main field of biomedicine informed by relevant disciplinary, social and ethical issues and also to demonstrate awareness of ethical aspects of research and development work
- demonstrate insight into the possibilities and limitations of research, its role in society and the responsibility of the individual for how it is used, and
- demonstrate the ability to identify the personal need for further knowledge and take responsibility for his or her ongoing learning.

Specific learning outcomes for the Lund University Master's programme in Biomedicine

For a degree of Master of Medical Science (120 credits) specialising in Biomedicine the

student shall be able to

- fit into a research team or the equivalent and actively contribute to its activities,
- apply methods of relevance to experimental and/or translational industry-based or academic research in biomedicine,
- independently process scientific problems in biomedicine and provide theoretical and practical solutions in relation to global challenges, and
- ead biomedical projects in academic or industry-based research and reflect on their value from perspectives of science, innovation and/or entrepreneurship.

Course information

The Master's programme in Biomedicine consists of four semesters of second-cycle studies primarily conducted as student-centred learning. The courses in the first semester are compulsory and include skills training in experimental design and research communication enabling students to develop their ability to use scientific methods to address and solve problems. Furthermore, students are enabled to develop skills in presentation technique, information retrieval and academic writing in medicine as well as provided with training in modern biomedical methods such as biostatistics, bioinformatics, image analyses and animal experiments. Altogether, this provides a firm foundation for the following semesters and a professional career in industry-based and experimental research. In semester 2, the students will have the opportunity to broaden and/or specialise their expertise through elective courses within the faculty's strong research environments or through external courses.

The second year of the programme provides the students as a group with broader and professional skills such as project management, patents, health economics, bioethics, application procedures and professional networking using a CV and creating an individual portfolio before they commence specialised studies. The specialisation in industrial biomedical research starts with elementary drug development and clinical trials before a project of 45 credits is initiated, preferably within a pharmaceutical company or equivalent corporate organisation. The specialisation in experimental biomedical research starts with project management in preparation of research and includes assessed training in drafting applications for ethical permission and research funding, and preparing a project plan before a project of 45 credits is initiated, preferably at an academic biomedical research laboratory or equivalent organisation. A place within a specific specialisation cannot be guaranteed but the aim is to grant the students' wishes.

An overview of the courses available within the programme can be found in appendix 1. Elective specialisation courses and project courses are included in semester 2.

Degree

Degree titles

Degree of Master of Medical Science (120 credits)
Major: Biomedicine
Major: Biomedicine with specialization in Experimental Research
Major: Biomedicine with specialization in Industrial Research

Medicine masterexamen
Huvudområde: Biomedicin
Huvudområde: Biomedicin med inriktning akademisk experimentell forskning

Huvudområde: Biomedicin med inriktning industriell forskning

For the degree of Master of Medical Science (120 credits) in Biomedicine, students must complete a degree project of at least 30 credits and other courses within the programme amounting to at least 30 credits. No more than 60 credits of project courses may be credited for a degree, including the degree project. The remaining courses must have a clear specialisation in biomedicine or science. A maximum of 15 credits can be credited for courses within other disciplines.

For the degree of Master of Medical Science (120 credits) in Biomedicine specialising in experimental biomedical research, the students must take the courses Experimental Design and Scientific Communication 15 credits, Biomedical Methods and Experimental Animal Models 15 credits, Innovation and entrepreneurship 7.5 credits, Research Project Management 7.5 credits and a degree project of at least 45 credits with a clear link to biomedicine and academic research. For the degree of Master of Medical Science (120 credits) in Biomedicine specialising in industrial biomedical research, the student must take the courses Experimental Design and Scientific Communication 15 credits, Biomedical Methods and Experimental Animal Models 15 credits, Innovation and entrepreneurship 7.5 credits, Drug Development and Clinical Trials 7.5 credits and a degree project of at least 45 credits based at a company in the life science sector.

The name of the degree is Master of Medical Science (120 credits) with a Major in Biomedicine. The name of the specialisation can be added (Master of Medical Science, with a Major in Biomedicine and specialisation in industrial biomedical research or experimental biomedical research) if the courses defining the relevant specialisation are included in the degree certificate.

Requirements and Selection method

Requirements

To be admitted to the programme, students must

- meet the general entry requirements and have a Bachelor's degree of 180 credits in biomedicine, bioengineering, cell and molecular biology or medicine, including an independent project (degree project) of at least 15 credits in biomedicine or science. Furthermore, the student's previous studies must include at least 15 credits in biochemistry, at least 20 credits in basic cell biology (cell biology, molecular biology, microbiology, immunology, genetics and/or developmental biology), at least 5 credits in immunology, at least 5 credits in microbiology, at least 7.5 credits in human physiology and at least 30 credits in molecular medicine, pathobiology, pharmacology and/or toxicology, and
- have proficiency in English corresponding to a pass in English B/English 6 at a Swedish upper secondary school or equivalent.

Selection method

A combined qualitative assessment is made of the student's previous education, relevant professional and/or research experience and reasons for applying to the programme. The applicant must attach a letter of intent and degree project to the application. Other research qualifications must be documented by a certificate of employment or written research paper in which their individual contribution is clearly indicated.

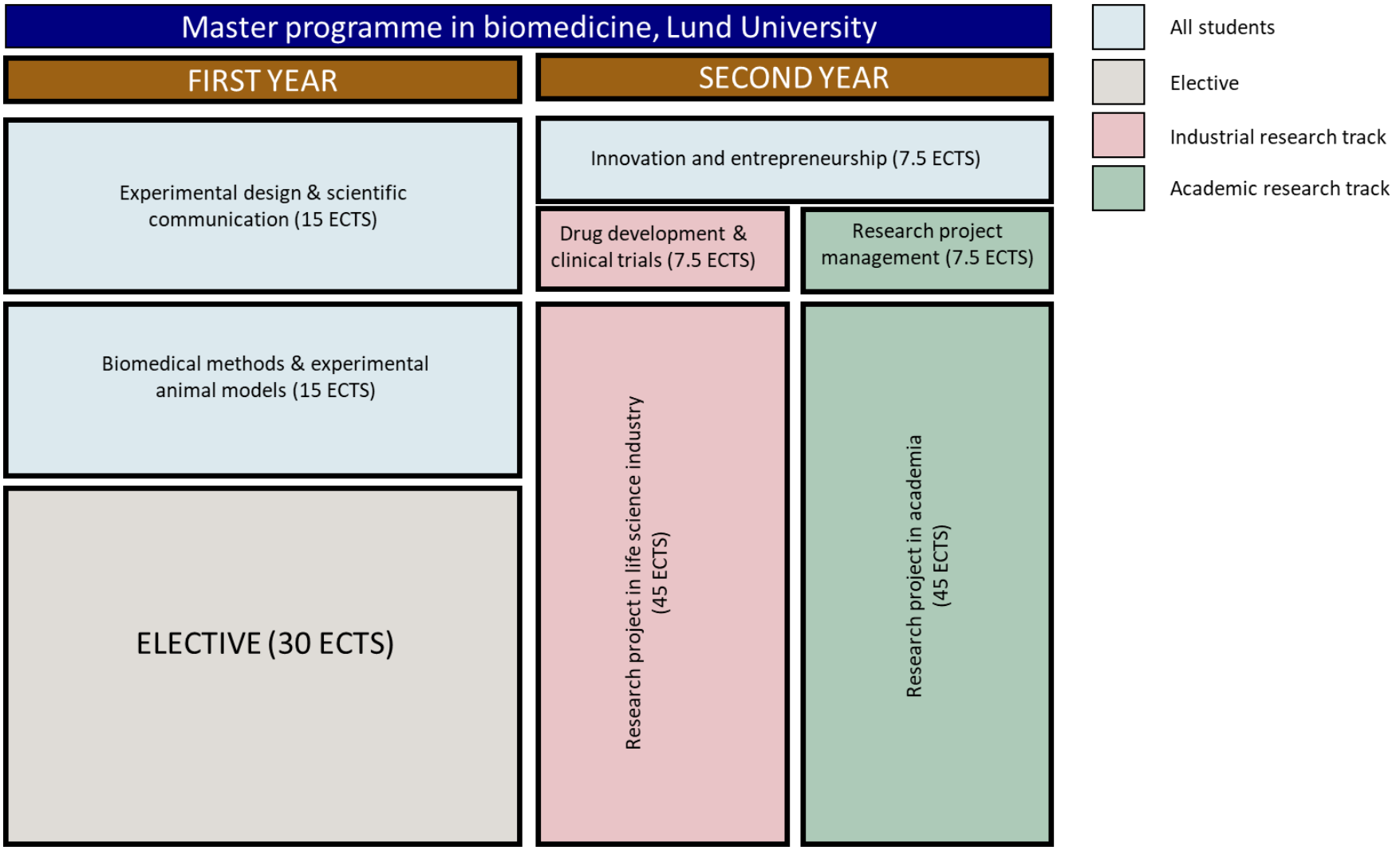
Other information

Additional information in appendix VABME-Course-overview-autumn-2021-revised-march-2021.

FACULTY OF MEDICINE

Master's Programme in Biomedicine (120 credits)

Course overview, applies from autumn semester 2021



Revised 2021-03-04