Biosciences

See study programme

Autumn 2023 (1. semester)

Laboratory Safety Master	KJ301F 0 sp
Scientific Communication and Research Methods	BI300F 10 sp

Recommended elective courses - on campus	
Elective courses Steinkjer	MABIO-H23-VALG-STE 0 sp
Elective courses Bodø	MABIO-H23-VALG-BOD 0 sp
Specialization	
Specialization - Marine Ecology	MABIO-H23-SPESIAL1 0 sp
Specialization - Livestock science - Steinkjer	MABIO-H23-SPESIAL5 0 sp
Specialization - Terrestrial Ecology and Nature Management	MABIO-H23-SPESIAL4 0 sp
Specialization - Genomics	MABIO-H23-SPESIAL3 0 sp
Specialization - Aquaculture	MABIO-H23-SPESIAL2 0 sp

Spring 2024 (2. semester)

Recommended elective courses - on campus	
Elective courses Steinkjer	MABIO-H23-VALG-STE 0 sp
Elective courses Bodø	MABIO-H23-VALG-BOD 0 sp
Specialization	
Specialization - Marine Ecology	MABIO-H23-SPESIAL1

	0 sp
Specialization - Livestock science - Steinkjer	MABIO-H23-SPESIAL5 0 sp
Specialization - Terrestrial Ecology and Nature Management	MABIO-H23-SPESIAL4 0 sp
Specialization - Genomics	MABIO-H23-SPESIAL3 0 sp
Specialization - Aquaculture	MABIO-H23-SPESIAL2 0 sp

Autumn 2024 (3. semester)

Recommended elective courses - on campus	
Elective courses Steinkjer	MABIO-H23-VALG-STE 0 sp
Elective courses Bodø	MABIO-H23-VALG-BOD 0 sp
Specialization	
Specialization - Marine Ecology	MABIO-H23-SPESIAL1 0 sp
Specialization - Livestock science - Steinkjer	MABIO-H23-SPESIAL5 0 sp
Specialization - Terrestrial Ecology and Nature Management	MABIO-H23-SPESIAL4 0 sp
Specialization - Genomics	MABIO-H23-SPESIAL3 0 sp
Specialization - Aquaculture	MABIO-H23-SPESIAL2 0 sp

Spring 2025 (4. semester)

Recommended elective courses - on campus	
Elective courses Steinkjer	MABIO-H23-VALG-STE 0 sp
Elective courses Bodø	MABIO-H23-VALG-BOD 0 sp

Programme description

A Master in Biosciences provides you with in depth knowledge within a chosen biological field, but will also improve your critical thinking and analytical skills. During the project phase of the programme you will be a part of a local scientific research group, conducting an original piece of scientific research. Master students can investigate the marine, terrestrial, and anthropogenic environments, gaining proficiency in the use of analytical tools in areas such as statistics and genomics.

This flexible study programme provides advanced knowledge in biosciences with specialisations available in the following five fields: aquaculture, genomics, marine ecology, terrestrial ecology, and livestock science. A Master of Biosciences will give you a competitive edge in the job market, and ability to choose a range of potential career paths.

Master of Biosciences has five specialisations:

Aquaculture
Genomics
Marine Ecology
Terrestrial Ecology and Nature Management
Livestock Science

Specialisation in Aquaculture: Aquaculture is the breeding, rearing, and harvesting of plants and animals in all types of aquatic environments. Aquaculture is probably the fastest growing food-producing sector globally, currently supplying almost 50 percent of the fish consumed worldwide. This specialisation will give students an in-depth knowledge of selected areas of aquaculture. You will be a part of a research team studying different aspects of aquaculture such as nutrition, physiology, health, and welfare. The master project can make use of the University's research station at the Bodø campus, or can be run in close cooperation with the regional industry. This specialisation prepares you for a career in research, consulting, or industry.

Specialisation in Marine ecology: Study of functioning ecosystems and how organisms interact within marine environments is becoming increasingly important as human activity continues to exploit and affect marine ecosystems. Life under water is fascinating, but challenging to study. In this specialisation, you will be part of a research team studying different marine environments from various perspectives: using molecular techniques to study evolutionary processes, molecular population ecology, conservation biology, dynamics of diversity and communities, and modelling of hydrodynamical regimes. An understanding of these areas is essential to those sustainably managing marine resources in the future and, therefore, this programme prepares you for a career in research, consulting, industry or environmental authorities.

Specialisation in Genomics: Defined as the study of structure, function and evolution of genomes, genomics is at the forefront of modern biology. Technological breakthroughs over the past decade have revolutionised the area and all related fields of biosciences. Master projects in genomics target a range of organisation levels in biology, from the molecular level to that of populations, via cells and organisms. Exciting research questions that were previously intractable can now be addressed. You will gain knowledge on how to collect, analyse and interpret large data sets using bioinformatics. Projects in genomics are often interdisciplinary, relating to a wide range of biological disciplines, such as ecology, reproduction, development, physiology, evolutionary biology, toxicology, and ethology. A specialisation in genomics prepares you for career opportunities in biotechnology, medicine, management, or academia.

Specialisation in Terrestrial Ecology and Nature Management: Sustainable, responsible use of natural resources is a challenge and critical to ensure the human population in the future. It includes use of natural resources and land areas of the Earth that secures biodiversity and healthy ecosystems, as recognised by the Brundtland Commision some 25 years ago. To meet the challenges we need people with knowledge and skills in this field of scientific research and management who are able to communicate and find innovative management solutions. This programme prepares you for a career in nature management and research through familiarisation and deep knowledge of the tools available to secure sustainable use of nature resources. This specialisation prepares you for careers in conservation biology, ecological consultancy, management policy, or academia.

Specialisation in Livestock Science: A specialisation offering scientific and professional training that provides the knowledge and skills required to pursue a top career within livestock industries, scientific research and education,

or consultancy services. Satisfying future demands of food quality, quantity and security can be solved by development and implementation of innovative concepts and ideas by well-qualified postgraduates driving developments in livestock science. Specifically, animal welfare, climate footprint, biodiversity, OneHealth, and rapidly developing high-tech and robotisation are all areas that the livestock sector must relate to. The specialisation in Livestock Science offers opportunities to work with such issues and learn more about challenges for the livestock industry in the future.

Learning outcomes

Learning outcomes:

On completion of the programme graduates will possess advanced knowledge within the field of biology depending on the specialisation within aquaculture, genomic, marine or terrestrial ecology, or livestock science. The training offers a thorough knowledge of relevant scientific methods used in biological research

Skills

Graduates of the programme can:

analyse and critically relate to various information sources and apply them to structure and formulate questions in biology
objectively assess existing theories, methods and research strategies within the field
use relevant methods in an independent way to collect, analyse, interpret and understand biological data
carry out an independent, limited research project under supervision and in accordance with applicable norms for research ethics

General competence

Graduates can:

analyse relevant biological and ethical issues
apply their knowledge and skills to participate in scientific research and professional research related to the master's specialisation
perform advanced tasks and projects within the field
communicate extensive independent work and master's level language and terminology in the academic field
communicate about academic biological problems to both scientists and the general public
contribute to new thinking and innovation processes

Admission requirements

Higher education entrance qualification

Documented proficiency in English language

Bachelor's degree within a biological field with an average grade of C or better. Of the 180 ECTS students need a minimum of 60 ECTS in biosciences courses and must also have a basic knowledge of mathematics, statistics and chemistry at university level.

How to apply

Career possibilities

As a Biosciences graduate and depending on your specialisation, you will be qualified to, for example, carry out laboratory work, environmental consultancy, work in the aquaculture sector, and work in all levels of the public sector, from municipal authorities to national government and agencies.

Further education

Graduates qualify to apply for admission to PhD programmes at Norwegian and foreign universities. By taking an additional teacher training programme graduates are qualified to teach in secondary schools.

Study abroad

Ever thought of spending part of your degree in another part of the world?

To promote international competence, it is expected that candidates will spend at least 3 months (usually in the 2nd semester) with our collaborating universities in Europe and other parts of the world. These institutions offer you exciting opportunities to study for one semester abroad, allowing a broader scope and diversity of topics than can be offered by a single university alone.

We are flexible and have dedicated staff who will do their best to help you with your stay abroad. The world is yours to explore!

Please contact the international coordinator at FBA, Jose de Pool, for more information

Costs

In addition to the semester fee and syllabus literature, students are expected to have a laptop with microphone and camera. Students must purchase their own laboratory coat for use in courses with laboratory exercises.

Cost for some elective couses may apply, max. NOK 3000,-.

Assessment methods

The courses offered in the Master have different forms of evaluation and may take the form of written and oral exams, home exam and assignments. After submission of the Master thesis, the student presents their thesis in a public trial lecture. Usually sometime after the lecture, there will be an oral defence with two examiners. The Master thesis and courses on Master level are evaluated by internal and external sensors.

Graduation requirements

The final examination for graduation from the study programme is the Master thesis, trial lecture and oral examination.

Programme evaluation

Students evaluate the study programme annually by using course evaluation studies and via feedback through the programme director. The evaluations are included in the university's quality assurance system.

Qualifications requirements and regulations

Refer to: https://www.nord.no/en/about/rules-regulations/Pages/default.aspx