**Fakultet for biovitenskap**

# Master in Aquaculture (M-AA)

# Admissions 2024

## Master in Aquaculture (M-AA)

A master's degree is awarded on 120 credits. Equivalent of two years full study. Students who lack knowledge about general aquaculture from their bachelor's degree need to take AQX251 in the master's degree. To obtain a master's degree in Aquaculture, the following is required:

- Minimum 30 credits courses at 300-level
- Compulsory courses at 300-level
- Optional courses at 200 or 300 level
- A compulsory master thesis of 60, 45 or 30 credits

## Compulsory courses:

| Code | Name | ECTS | Period |
|------|------|------|--------|
| AQX251 | Sustainability and welfare in aquaculture | 5 | August |
| BIO314 | Fish physiology | 5 | Autumn |
| AQX300 | Applied Aquaculture | 10 | Spring |

Master thesis 60 ECTS or
Master thesis 45/30 ECTS + optional courses

Study plan examples

| Year | Semester | 5 ECTS | 5 ECTS | 5 ECTS | 5 ECTS | 5 ECTS | 5 ECTS |
|------|----------|--------|--------|--------|--------|--------|--------|
| **2** | June | | | | | | |
| | Spring | Master thesis | | | | | |
| | January | | | | | | |
| | Autumn | Master thesis or courses if 45/30 ECTS thesis | | | | | |
| | August | | | | | | |
| **1** | June | | | | | | |
| | Spring | | AQX300 | | | | |
| | January | | | | | | |
| | Autumn | | BIO314 | | | | |
| | August | AQX251 | | | | | |

## Optional courses from the two specializations area:

- **Production Biology**
  - Select courses in product quality/nutrition/feeding technology, genomics/breeding and welfare/behavior/health

- **Management and Farming Technology**
  - Select courses in economy, management, leadership and farming technology (RAS)

# Production biology

## Genome Biology and breeding

| Code | Name | ECTS | Period |
|------|------|------|--------|
| AQB250 | Sustainable aquaculture – breeding and genetics | 5 | Autumn |
| BIN300 | Statistical Genomics | 10 | Spring |
| BIN301 | Genomic and pedigree-based prediction of genetic value | 10 | Autumn |
| BIN302 | Advanced Analysis for High Throughput Phenotyping and Precision Farming | 10 | Autumn |
| BIO200 | Molecular Genetics in Eukaryotes | 5 | January |
| BIO322 | Advanced Topics in Genomics | 10 | Autumn |
| BIO325 | CRISPR genome editing | 10 | Spring |
| BIO326 | Genome Sequencing; Tools and Analysis | 10 | Spring |
| HFA300* | Animal Breeding and Conservation Plans* | 15 | Spring + June |
| HFA303* | Biological Consequences of Selection in Animal Breeding | 5 | Autumn |
| HFA304 | Theory and Application of Inbreeding Management* | 5 | June |

\* Prerequisites HFA200

## Ethology, Behavioral and fish health

| Code | Name | ECTS | Period |
|------|------|------|--------|
| AQX301 | Fish Health | 5 | Spring |
| BIO315 | Behavioral biology in fishes | 10 | January + Spring |
| HET300 | Scientific Methods in Ethology | 10 | Autumn |
| HET301 | The Biology of Animal Stress and Its Implications for Animal Welfare | 10 | Spring |

## Nutrition, product quality and feed technology

| Code | Name | ECTS | Period |
|------|------|------|--------|
| AQQ253 | Product Quality in Aquaculture | 5 | June |
| AQN350 | Aquaculture Nutrition | 10 | Autumn |
| AQN351 | Sustainable ingredients in aquafeeds | 5 | Autumn |
| HFE200 | General Nutrition (Norwegian) | 10 | Spring |
| HFE202 | Kraftfôr (Norwegian) | 5 | Spring |
| HFE303 | Nutrition and Optimisation of Diets for Monogastric Animals | 10 | Autumn |
| HFE305 | Feed Manufacturing Technology | 10 | Aug + Autumn |
| HFE308 | Optimalization of Feed Processing for Different Animal Species | 10 | Spring |
| HFE314 | Experimental animal nutrition and physiology | 10 | Spring |
| MVI261 | Process Technology II (Norwegian) | 5 | Spring |
| MVI274 | Muscle Food- Science and Technology | 10 | Spring |
| MVI310 | Macronutrients, Their Structure and Functionality | 10 | Autumn |
| MVI320 | Fish Processing Technology | 10 | Autumn |

## Management and Farming Technology

| Code | Name | ECTS | Period |
|---|---|---|---|
| AQP311 | Production technology in aquaculture | 10 | January + Spring |
| AQP350 | Planning and Design of Intensive Fish Farms | 10 | Spring |
| AQT251 | Laboratory course in international aquaculture | 5 | Autumn |
| AQT254 | Basic Aquaculture Engineering | 5 | Autumn |
|  | Special syllabus | 10 | All |

## General courses

| Code | Name | ECTS | Period |
|---|---|---|---|
| AQX252 | Produksjonsstyring i Akvakultur (digitalt/samling) (Norwegian) | 5 | Spring |
| BINT302 | Internship Aquaculture | 5,10,15 | All |
| ECOL340 | Exploring and Analyzing Data in Ecology and Natural Resource Management | 5 | Autumn |
| KJM220 | Vannkjemi (Norwegian) | 10 | Autumn |
| MTH300 | E-learning Course: Planning and Scientific Writing of a Master's Thesis in Natural Sciences | 5 | Autumn |
| MINA310 | Methods in Natural Sciences | 5 | Spring |
| NATF240 | Fish Ecology and Management (Norwegian) | 10 | Spring |
| LNG250 | Akademisk skriving (Norwegian) | 5 | Autumn |
| SDG300 | Sustainable development goals in plant and animal food systems | 5 | January |
| STIN300 | Statistical Programming in R | 5 | January |
| STIN370 | Selected topics in bioinformatics and applied statistics | 5 | Spring |