



Programme jointly offered by Ghent University, Norwegian University of Science and Technology, Wageningen University, Autonomous University of Barcelona, University of Barcelona

International Master of Science in Health Management in Aquaculture

Language of instruction: English

Programme version 4

| 1 General Courses | | | | | | 30 credits | |
|-------------------|---------|---|------|-----|-----|------------|-------|
| Nr | Course | | CRDT | Ref | MT1 | Session | Study |
| 1 | I003023 | Basic Principles in Aquaculture Techniques <i>Annelies Declercq -- Department of Animal Sciences and Aquatic Ecology</i> | 4 | | 1 | A:1 | 120 |
| 2 | I002796 | Diseases in Aquaculture <i>Annelies Declercq -- Department of Animal Sciences and Aquatic Ecology</i> | 6 | | 1 | A:1 | 180 |
| 3 | I002084 | Viral Disease Management <i>Hans Nauwynck -- Department of Translational Physiology, Infectiology and Public Health</i> | 3 | | 1 | A:1 | 90 |
| 4 | I002797 | Fish and Shellfish Immunology <i>Daisy Vanrompay -- Department of Animal Sciences and Aquatic Ecology</i> | 4 | | 1 | A:1 | 120 |
| 5 | I002086 | Aquatic Microbial Community Management <i>Tom Defoirdt -- Department of Biotechnology</i> | 3 | | 1 | A:1 | 75 |
| 6 | I003027 | Aquaculture Genetics <i>Annelies Declercq -- Department of Animal Sciences and Aquatic Ecology</i> | 5 | | 1 | A:1 | 150 |
| 7 | I002756 | Applied Statistics <i>Louis Coussement -- Department of Data Analysis and Mathematical Modelling</i> | 5 | | 1 | A:1 | 150 |

| 2 General Courses | | | | | | 60 credits |
|-------------------|--|--|--|--|--|------------|
|-------------------|--|--|--|--|--|------------|

Subscribe to 1 elective learning track from the following list. Subject to approval by the faculty.

Learning tracks:

- Ecosystems and Health
- Disease Prevention Management and Health
- Physiology and Health

The chosen learning track determines the mobility path.

Depending on the mobility path chosen, students will additionally enrol at the host university per semester or per academic year they take part of the programme taught by this university.

| 2.1 Ecosystems and Health | | | | | | 60 credits |
|---------------------------|--|--|--|--|--|------------|
|---------------------------|--|--|--|--|--|------------|

Students taking the learning track Ecosystems & Health additionally enrol at NTNU in both the second and third semester of the study programme. They reside in Trondheim, Norway throughout the second and third semester.

All course units in this module are mandatory.

30 ECTS are taken up in the first year master (MT1 = 1); 22,5 ECTS in the second year master (MT1 = 2).

| Nr | Course | | CRDT | Ref | MT1 | Session | Study |
|----|---------|---|------|-----|-----|---------|-------|
| 1 | I002858 | Fish Welfare and Health <i>Grete Kristine Følsvik Hansen Aas -- Norwegian University of Science and Technology</i> | 7.5 | | 1 | A:2 | 200 |
| 2 | I002859 | Recirculating Aquaculture Systems RAS <i>Sharada Navada -- Norwegian University of Science and Technology</i> | 7.5 | | 1 | A:2 | 200 |
| 3 | I002860 | Expert in Teams <i>Karl Klingsheim -- Norwegian University of Science and Technology</i> | 7.5 | | 1 | A:2 | 200 |
| 4 | I002927 | Environmental Biotechnology <i>Ingrid Bakke -- Norwegian University of Science and Technology</i> | 7.5 | | 1 | A:2 | 200 |
| 5 | I002862 | Aquaculture in the Ecosystem <i>Kjell Inge Reitan -- Norwegian University of Science and Technology</i> | 7.5 | | 2 | A:1 | 200 |

| | | | | | | |
|---|---------|--|-----|---|-----|-----|
| 6 | I002865 | AquaHealth Club <i>Bengt Finstad -- Norwegian University of Science and Technology</i> | 7.5 | 2 | A:1 | 200 |
| 7 | I002866 | Internship Project <i>Kjell Inge Reitan -- Norwegian University of Science and Technology</i> | 7.5 | 2 | A:1 | 200 |

2.1.1 Elective Courses 7.5 credits

Subscribe to 7,5 credit units from the following list in the second year master (MT1 = 2). Subject to approval by the faculty.

| Nr | Course | | CRDT | Ref | MT1 | Session | Study |
|----|---------|--|------|-----|-----|---------|-------|
| 1 | I003094 | Principles in Animal Experimentation <i>Anna Solvang Båtnes -- Norwegian University of Science and Technology</i> | 7.5 | | 2 | A:2 | 200 |
| 2 | I002864 | Environmental Assessment Methods and Quality of Coastal Water <i>Yngvar Olsen -- Norwegian University of Science and Technology</i> | 7.5 | | 2 | A:1 | 200 |

2.2 Disease Prevention Management and Health 60 credits

Students taking the learning track Disease Prevention Management & Health additionally enrol at WU in the second semester of the study programme. During the second semester they reside in Wageningen, The Netherlands, in the third semester where the internship is taken.

All course units in this module are mandatory.

24 ECTS are taken up in the first year master (MT1 = 1); 30 ECTS in the second year master (MT1 = 2).

| Nr | Course | | CRDT | Ref | MT1 | Session | Study |
|----|---------|---|------|-----|-----|---------|-------|
| 1 | I002868 | Nutrition and Health in Aquaculture <i>Johan W Schrama -- Wageningen University</i> | 6 | | 1 | A:2 | 168 |
| 2 | I002869 | Frontiers in Animal Health <i>Maria Forlenza -- Wageningen University</i> | 6 | | 1 | A:2 | 168 |
| 3 | I002870 | Academic Consultancy Training and MOS Modules <i>Camilla Kaempgaard -- Wageningen University</i> | 12 | | 1 | A:2 | 336 |
| 4 | I002929 | Internship Comprehensive Project <i>Annelies Declercq -- Department of Animal Sciences and Aquatic Ecology</i> | 24 | | 2 | A:1 | 600 |
| 5 | I002928 | AquaHealth Club <i>Annelies Declercq -- Department of Animal Sciences and Aquatic Ecology</i> | 6 | | 2 | A:1 | 180 |

2.2.1 Elective Courses 6 credits

Subscribe to no less than 6 and no more than 9 credit units from the following list in the first year master (MT1 = 1). Subject to approval by the faculty.

Students that need to take the course 'Laboratory Animal Science: Design and Ethics in Animal Experiments' in order to be allowed to handle laboratory animals in the framework of the thesis at WU will subscribe to 9 credit units and accumulate 33 credit units in semester 2 and hence 123 credit units in the complete curriculum.

| Nr | Course | | CRDT | Ref | MT1 | Session | Study |
|----|---------|---|------|-----|-----|---------|-------|
| 1 | I002871 | Sustainability in Fish and Seafood Production <i>Geertje LH Schlamann -- Wageningen University</i> | 6 | | 1 | A:2 | 168 |
| 2 | I002873 | Laboratory Animal Science: Design and Ethics in Animal Experiments <i>Ellen Kranenborg-Stolte -- Wageningen University</i> | 3 | | 1 | A:2 | 84 |
| 3 | I002874 | Short Research Projects in Biology <i>Leo AJ Nagelkerke -- Wageningen University</i> | 6 | | 1 | A:2 | 168 |

2.3 Physiology and Health 60 credits

Students taking the learning track Physiology & Health additionally enrol at UAB in both the second and third semester of the study programme. They reside in Barcelona, Spain throughout the second and third semester.

All course units in this module are mandatory.

28,5 ECTS are taken up in the first year master (MT1 = 1); 31,5 ECTS in the second year master (MT1 = 2).

| Nr | Course | | CRDT | Ref | MT1 | Session | Study |
|----|---------|--|------|-----|-----|---------|-------|
| 1 | I002875 | Fish Laboratory Course <i>Joaquim Gutiérrez Fruito -- University of Barcelona</i> | 2 | | 1 | A:2 | 50 |
| 2 | I002876 | Fish Health Laboratory Course <i>Nerea Roher Armentia -- Autonomous University of Barcelona</i> | 2 | | 1 | A:2 | 50 |
| 3 | I002877 | Basic Marine Aquaculture Facility Management <i>Maria Lourdes Reig Puig -- Universitat Politècnica de Catalunya • BarcelonaTech</i> | 2 | | 1 | A:2 | 50 |
| 4 | I002931 | Internship Comprehensive Project <i>Maria Constenla Matalobos -- Autonomous University of Barcelona</i> | 22.5 | | 1 | A:2 | 600 |
| 5 | I002878 | Production and Health Management in Aquaculture Facilities <i>Ingrid Masaló Llora -- Universitat Politècnica de Catalunya • BarcelonaTech</i> | 8 | | 2 | A:1 | 200 |
| 6 | I002879 | Stress, Pathology, Immune Response, and Environmental Health <i>Maria Constenla Matalobos -- Autonomous University of Barcelona</i> | 8 | | 2 | A:1 | 200 |

| | | | | | | |
|---|---------|---|-----|---|-----|-----|
| 7 | I002880 | Physiology of Aquaculture Species <i>Isabel Navarro -- University of Barcelona</i> | 8 | 2 | A:1 | 200 |
| 8 | I002930 | AquaHealth Club <i>Maria Constenla Matalobos -- Autonomous University of Barcelona</i> | 7.5 | 2 | A:1 | 200 |

3 Master's Dissertation

30 credits

The fourth semester of the study programme consists of the master's dissertation, which is taken at one of the full consortium partner universities. Students additionally enrol at that university.

Exception: For students having chosen the track Disease Prevention Management & Health, the master's dissertation must be taken under the supervision of WU.

During the fourth semester, students reside where the consortium partner university at which they take the master's dissertation, is located, or at the location of the associated university, research institution or NGO where they carry out the experimental work for the master's dissertation.

| Nr | Course | CRDT | Ref | MT1 | Session | Study |
|----|--|------|-----|-----|---------|-------|
| 1 | I002881 Master's Dissertation <i>Annelies Declercq -- Department of Animal Sciences and Aquatic Ecology</i> | 30 | | 2 | A:2 | 900 |

Teaching

When a course is not taught (solely) in the programme's language of instruction, the effectively used languages are indicated in square brackets following the course name, using the following ISO codes:

| | | | | | | |
|---------------|-------------|-------------|---------------|----------------|----------------------|-------------|
| bg: Bulgarian | de: German | es: Spanish | ja: Japanese | pl: Polish | sh: Croatian/Serbian | zh: Chinese |
| cs: Czech | el: Greek | fr: French | nl: Dutch | pt: Portuguese | sl: Slovene | |
| da: Danish | en: English | it: Italian | no: Norwegian | ru: Russian | sv: Swedish | |

Semester

Semesters are indicated by their number (1 or 2); semester 3 represents the summer period and J indicates a course spanning semesters 1 and 2. When a capital letter precedes a semester number, the course has multiple offerings. The letter indicates the offering concerned.

When a semester is shown in brackets, the course is not offered this year in the specific offering.

The offering frequency and first year of offering are indicated by the following codes:

| | | | |
|-----------------|---------------------------------|---------------------------------|---------------------------------|
| a: bi-annually | c: annually, from 2026-2027 | f: annually, from 2027-2028 | i: annually, from 2028-2029 |
| b: tri-annually | d: bi-annually, from 2026-2027 | g: bi-annually, from 2027-2028 | j: bi-annually, from 2028-2029 |
| | e: tri-annually, from 2026-2027 | h: tri-annually, from 2027-2028 | k: tri-annually, from 2028-2029 |