

## Fish Welfare and Health (I002858)

**Course size** (nominal values; actual values may depend on programme)

<b>Credits 7.5</b>	<b>Study time 200 h</b>	<b>Contact hrs</b>	60.0h
--------------------	-------------------------	--------------------	-------

**Course offerings in academic year 2022-2023**

A (semester 2)	English	Gent
----------------	---------	------

**Lecturers in academic year 2022-2023**

Olsen, Rolf Erik	TRONDH01	lecturer-in-charge
Stene, Anne	TRONDH01	co-lecturer

**Offered in the following programmes in 2022-2023**

<a href="#">International Master of Science in Health Management in Aquaculture</a>	<b>crdts</b>	<b>offering</b>
	7.5	A

**Teaching languages**

English

**Keywords**

*Salmon farming, welfare, diseases, disease spreading, stress management, health management, infectious agents and mechanisms for spread, biosecurity, aquaculture*

**Position of the course**

Products from fish farming and other aquaculture constitute an increasing proportion of the production of food for human consumption globally. Fish farming has developed to be one of the most important export industries in Norway, and it is clearly stated from the authorities that it is a main goal to increase this production significantly. However, it is a prerequisite that the production is sustainable. This implies that the production shall not affect the marine environment, including wild fish populations, to a degree that makes significant changes to fish stocks, and farming should also be sustainable in terms of welfare, disease, mortality and losses of farmed fish.

**Contents**

- Sustainability in terms of welfare, disease, mortality and losses of farmed fish
- Specific infectious diseases of high importance
- Infectious agents and mechanisms for spread of infection
- Health and marine environment
- Methods of disease control
- Principles for biosecurity in farmed fish.
- Manipulation and stressors of handling experienced in aquaculture
- Methods for measuring or evaluating cultured fish stress and welfare
- Water quality aspects.

**Initial competences**

*Competence for admission to EM AquaH study program and first semester courses at UGent. Bachelor of marine science and aquaculture for national program MSOCEAN*

**Final competences**

- 1 The candidate shall obtain an overview of different categories of causes of disease in farmed fish.
- 2 He/she should especially be able to understand how infectious diseases develop and spread in populations, as well as general principles and measures to prevent the introduction and further spread of infectious agents.

- 3 The candidate should also have knowledge of important, specific infectious diseases.
- 4 Furthermore, the candidate should have knowledge of the importance of good welfare and methods for measuring/documenting welfare.
- 5 The candidate should be able to describe general principles for spread of infection and disease control of infectious diseases in farmed fish, as well as the importance of specific infectious diseases with emphasis on conditions important for preventing introduction of infectious agents.
- 6 The candidate should also be able to explain different methods for documenting fish welfare.
- 7 The candidate shall have general knowledge and understanding of fish health and fish welfare as important elements in sustainable fish farming, as well as the importance of disease control and monitoring of welfare.

#### **Conditions for credit contract**

This course unit cannot be taken via a credit contract

#### **Conditions for exam contract**

This course unit cannot be taken via an exam contract

#### **Teaching methods**

Practicum, Demonstration, Group work, Lecture

#### **Extra information on the teaching methods**

*The course involves 24 lectures, with a high number of teachers involved, and a mandatory 30h laboratory course. The course has been intensively taught in January to March. 20 students have so far been admitted*

#### **Learning materials and price**

*The course has a mandatory 30h laboratory course with some costs related to chemicals and maintenance*

#### **References**

#### **Course content-related study coaching**

*Teaching support by PhD students in the laboratory. Guiding upon request, student advice on agreement*

#### **Assessment moments**

continuous assessment

#### **Examination methods in case of periodic assessment during the first examination period**

#### **Examination methods in case of periodic assessment during the second examination period**

#### **Examination methods in case of permanent assessment**

Portfolio, Oral examination, Assignment

#### **Possibilities of retake in case of permanent assessment**

examination during the second examination period is possible

#### **Extra information on the examination methods**

*The exam is oral, counting 75/100 while the assigned laboratory course counts 25/100*

#### **Calculation of the examination mark**

The normal grades are A-F and 7.5 ECTS achieved if passed (E and better, 40%)  
*Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.*