GHENT UNIVERSITY

Course Specifications

Valid as from the academic year 2024-2025

Fish and Shellfish Immunology (I002797)

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

Credits 4.0 **Study time 120 h**

Course offerings in academic year 2024-2025

A (semester 1) English Gent

Lecturers in academic year 2024-2025

Vanrompay, Daisy LA22 lecturer-in-charge

Offered in the following programmes in 2024-2025	crdts	offering
International Master of Science in Health Management in Aquaculture	4	A
International Master of Science in Marine Biological Resources	4	A
Master of Science in Aquaculture	4	A
Exchange Programme in Bioscience Engineering: Agricultural Sciences (master's level)	4	A

Teaching languages

English

Keywords

Immunobiology, innate and adaptive immunity, humoral and cellular immunity, inflammation, infectious diseases

Position of the course

This course aims at providing a detailed overview of immunology of fish and shellfish.

Contents

1 History of immunology
2 Antigens
3 Immune organs of fish
4 Inflammation
5 Innate immunity
6 Key cells
7 Cell based innate immune sensing fish
8 Cellular effectors in fish
9 Humoral-based immune sensing in fish
10 Cytokines and chemokines
11 MHC in fish
12 Ag presentation
13 T cell response in fish
14 Immunoglobulines of fish
15 B cell response in fish
16 Hemocytes in shellfish and tissues of their immune system
17 PRR of shellfish
18 ProPO in shellfish
19 Coagulation in shellfish
20 Anti-viral mechanisms in shellfish

Initial competences

An adequate knowledge of basic concepts of general biology, cell biology, microbiology and aquaculture is crucial to be able to follow along and for the proper understanding of the lectures

Final competences

1 The student possesses a broad knowledge at an advanced level in a number of basic disciplines (biology, immunology) relevant to aquaculture

2 The student understands the processes ongoing in different forms and systems of aquatic production in relation to disease prevention
3 The student understands the ethical issues of animal production and experimentation
4 The student can design and implement strategies for future development in aquaculture with emphasis on prevention of infectious diseases
5 The student is able to interact with peers, with various stakeholders in the aquaculture sector, and with a general public concerning personal research, thoughts, ideas, and research proposals, both written and orally

Conditions for credit contract

Access to this course unit via a credit contract is determined after successful competences assessment

Conditions for exam contract

This course unit cannot be taken via an exam contract

Teaching methods

Lecture

Extra information on the teaching methods

Theory lectures: lectures based on powerpoint presentations.

Study material

Type: Syllabus

Name: FISH AND SHELLFISH IMMUNOLOGY
Indicative price: € 15
Optional: no
Language : English
Number of Pages : 179
Available on Ufora : No
Online Available : No
Available in the Library : No
Available through Student Association : No
Additional information: Available for sale during the first lecture.

Type: Slides

Name: FISH AND SHELLFISH IMMUNOLOGY
Indicative price: Free or paid by faculty
Optional: no
Language : English
Number of Slides : 825
Available on Ufora : Yes
Online Available : No
Available in the Library : No
Available through Student Association : No
Additional information: Available on UFORA a few days before each lecture

References

1) Fish Defenses, Vol I: Immunology. Edited by G. Zaccone et al., (2017). CRC Press, Taylor & Francis Group
2) Fish vaccination. Edited by R. Gudding, A. Lillehaug and O. Evensen (2014). John Wiley & Sons, Ltd. , 9600 Garsington Road, Oxford, OX4 2DQ, UK. ISBN 978-0-470-67455-0.
3) Immunobiology. Kenneth Murphy and Casey Weaver. 9th Edition, (2016). Garland Science Publishing. Book is also known as Janeway's Immunobiology
4) Essential Immunology. P.J. Delves, S.J. Martin, D.R. Burton, Roitt, I.M. (eds) (2011). Wiley-Blackwell 12th edition.
5) Abul K. Abbas & Andrew H. Lichtman, S. Pillai (2017). Cellular and Molecular Immunology. 9th edition. Elsevier Science/Saunders, Philadelphia.

Course content-related study coaching

Teacher available for student counselling

Assessment moments

end-of-term assessment

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

Written assessment

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

Written assessment

Examination methods in case of permanent assessment

Possibilities of retake in case of permanent assessment

not applicable

Extra information on the examination methods

Theory: written examination

Calculation of the examination mark

Out of 20:
20 points attributed to written exam
Students who eschew period aligned evaluations for this course unit may be failed by the examiner.