

## Fish Health Laboratory Course (I002876)

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

<b>Credits</b> 2.0	<b>Study time</b> 50 h	<b>Contact hrs</b>	12.5h
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**Course offerings in academic year 2022-2023**

A (semester 2)	English	Gent
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**Lecturers in academic year 2022-2023**

Roher Armentia, Nerea	BARCELO7	lecturer-in-charge
Constenla Matalobos, Maria	BARCELO7	co-lecturer
Padrós Bover, Francesc	BARCELO7	co-lecturer
Sala Pallares, Roser	BARCELO7	co-lecturer
Teles Pereira, Mariana	BARCELO7	co-lecturer

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

	<b>crdts</b>	<b>offering</b>
<a href="#">International Master of Science in Health Management in Aquaculture</a>	2	A

**Teaching languages**

English

**Keywords**

*Health management, immunity, mucosal immunity, leucocytes, fish pathology, necropsy, bacterial diseases, viral disease, parasitic diseases, diagnostics, immunoprophylaxis, vaccines, nutritional management for health, nutraceuticals & health, therapeutics*

**Position of the course**

*This course is a practical course in which the student will get training in fish necropsy, diagnostics for pathogens, parasites and alterations in fish, blood and mucus sampling and blood leucocyte separation.*

**Contents**

- *Fish necropsy*
- *Pathologic and parasite diagnostic methods*
- *Observation and recognition of main histopathological alterations in fish*
- *Blood and mucus sampling*
- *Immune cell separation*
- *Vaccines*
- *Water quality: microbiology*
- *Food management for fish health*

*The activities will be accompanied by specialized visits (research center and a vaccine company) and/or selected conferences related to the topics dealt in the course.*

**Initial competences**

*General biology, general physiology, zoology, animal health, histopathology*

**Final competences**

- 1 *Sampling procedures for blood and mucus and cell separation*
- 2 *Observation and sampling procedures for detecting the main symptoms of diseases and being able to make a good diagnosis*
- 3 *Detecting the main histopathological alterations*
- 4 *Knowing the process of producing and administering fish vaccines*

**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, Clinical lectures, Online discussion group, Group work, Guided self-study, Excursion, Seminar: coached exercises

## Learning materials and price

*syllabus*

## References

- Brown, L. 1993. *Aquaculture for Veterinarians*. Pergamon Press, Oxford. U.K.
- Ferguson, H.W. 1989. *Systemic pathology of fish: a text and atlas of comparative tissue responses in diseases of teleosts*. Iowa State Univ.Press. Ames. Iowa. USA.
- Flajnik MF. A cold-blooded view of adaptive immunity. *Nat Rev Immunol*. 2018;18(7):438-453. doi:10.1038/s41577-018-0003-9
- Nakagawa, H., Sato, M., Gatlin III, D.M. 2007. *Dietary supplements for the health and quality of cultured fish*. CABI books.
- Noga, E.J. 1996. *Fish Disease. Diagnosis and treatment*. Iowa State University Press, Ames. Iowa. USA.
- Roberts, R.J. (2012). *Fish pathology*. Wiley-Blackwell
- Schreck, C., Moyle, P.B. 1990. *Methods for fish Biology*. Amer. Fish Soc. Bethesda.
- Smith Nicole C., Rise Matthew L., Christian Sherri L. (2019). *A Comparison of the Innate and Adaptive Immune Systems in Cartilaginous Fish, Ray-Finned Fish, and Lobe-Finned Fish*. *Frontiers in Immunology*. DOI=10.3389/fimmu.2019.02292
- Treves-Brown, K.M. 2000. *Applied Fish Pharmacology*. Kluwer Academic Publishers. Dordrecht. The Netherlands.
- Woo, P.T.K., Bruno, D.W., Lim, L.H.S., 2002. *Diseases and disorders of finfish in cage culture*. Cabi Publishing, U.K.

## Course content-related study coaching

*Teacher available for student counselling*

## Assessment moments

end-of-term and continuous assessment

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

Report, Written examination, Participation, Portfolio

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

Written examination, Oral examination

## Examination methods in case of permanent assessment

Skills test, Report, Written examination, Participation, Portfolio, Oral examination, Job performance assessment

## Possibilities of retake in case of permanent assessment

examination during the second examination period is possible in modified form

## Calculation of the examination mark

*Report of lab activities 40%; Written exam 40%; Visits and conferences questions 15%; Whole duties attendance and accomplishment 5%.*

*Students who eschew period aligned and/or non-period aligned evaluations for this course unit may be failed by the examiner.*