

## Comparative Endocrinology and Endocrine Disruption (C004295)

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

**Credits 4.0** **Study time 100 h**

**Course offerings in academic year 2026-2027**

A (semester 2) English Gent

**Lecturers in academic year 2026-2027**

Ortiz-Zarragoitia, Maren

LEIOA01 lecturer-in-charge

Izagirre, Urtzi

LEIOA01 co-lecturer

**Offered in the following programmes in 2026-2027**

[International Master of Science in Marine Biological Resources](#)

crdts	offering
4	A

**Teaching languages**

English

**Keywords**

molluscs, crustaceans, fish, reproduction, sexual determination, pollution, health assessment

**Position of the course**

Fish reproduction, sex determination and differentiation. Endocrinology of marine fish and shellfish. Endocrine and reproductive effects of pollutants. Applications to fisheries, aquaculture and environmental pollution assessment.

Aims (a) to introduce the students to the wide diversity and variability existing in fish reproduction and sexual determination and differentiation processes; (b) to offer to the students basic knowledge on endocrinology of marine fish and shellfish; (c) to show the students the effects of environmental pollutants on endocrine system and reproduction of fish and shellfish; and (d) to develop skills to estimate reproductive stages in fish and shellfish and understand modern tools on aquaculture of fish and shellfish species.

At the end of the Unit, you should be able to identify sex and gonad development in fish and shellfish and to identify effects of pollutants in reproductive and endocrine system in fish and shellfish

**Contents**

1. Reproduction in the marine environment: Fish and shellfish
2. Reproduction strategies and cycles in fish
3. Sex determination and differentiation in fish
4. Endocrinology of fish
5. Hormones and their function in fish
6. Impact of environmental pollutants on fish reproduction and endocrine system
7. Aquaculture strategies in fish: tools to improve fish reproduction
8. Endocrinology of main marine shellfish groups (crustaceans, molluscs and echinoderms)
9. Hormones in shellfish: participation on reproduction
10. Endocrine disruption on marine invertebrates
11. Shellfish aquaculture: modern tools and techniques

**Initial competences**

Basis of bioscience or animal science and environmental sciences

**Final competences**

- 1 Understand reproduction strategies in fish.
- 2 Identify reproduction strategies and reproductive gonad stages in fish and shellfish.
- 3 Have gained a knowledge of impact of environmental pollutants on fish and shellfish reproduction and endocrine system, as well as of hormonal regulation in aquaculture.

**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**

Seminar, Lecture, Practical

**Extra information on the teaching methods**

Lectures 20  
Practicals 6  
Seminars 6  
Computer class 4  
Tutorials 4

**Study material**

None

**References**

to be provided during the course

**Course content-related study coaching****Assessment moments**

end-of-term assessment

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

Oral assessment, Written assessment

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

Oral assessment, Written assessment

**Examination methods in case of permanent assessment****Possibilities of retake in case of permanent assessment**

not applicable

**Calculation of the examination mark**