



COURSE DATA

DATA SUBJECT

Code: 43279
Name: Limnology
Cycle: Master's Degree
ECTS Credits: 3
Academic year: 2026-27

STUDY (S)

Degree	Center	Acad. year	Period
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SUBJECT-MATTER

Degree	Subject-matter	Character
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COORDINATION

ARMENGOL DIAZ JAVIER

SUMMARY

The "Master in Biodiversity: Conservation and Evolution" is a postgraduate programme aimed at training professionals and researchers dedicated to the maintenance of biological diversity. The previous training of the students must have provided them with the knowledge, skills and abilities that serve as a basis for the more specialised developments that are carried out in this Master.

The subject LIMNOLOGY aims to provide students with knowledge about the structure and functioning of aquatic ecosystems that will enable them to understand the ecological processes and their role in the maintenance of biodiversity, as well as to study in depth the problems of these ecosystems in relation to their conservation and biodiversity.

PREVIOUS KNOWLEDGE

RELATIONSHIP TO OTHER SUBJECTS OF THE SAME DEGREE

There are no specified enrollment restrictions with other subjects of the curriculum.

OTHER REQUIREMENTS

The student's prior knowledge should include a broad background in Biology, including the basic knowledge of Ecology taught in undergraduate studies or adaptation from an undergraduate degree other than Biology or Environmental Sciences. Environmental Sciences.



COMPETENCES / LEARNING OUTCOMES

2148 -

Be able to access the information required (databases, scientific articles, etc.) and to interpret and use it sensibly.

Favour intellectual curiosity and encourage responsibility for one's own learning.

Stimulate the capacity for critical reasoning and for argumentation based on rational criteria.

Students should apply acquired knowledge to solve problems in unfamiliar contexts within their field of study, including multidisciplinary scenarios.

Students should communicate conclusions and underlying knowledge clearly and unambiguously to both specialized and non-specialized audiences.

Students should demonstrate self-directed learning skills for continued academic growth.

To acquire basic skills to develop laboratory work in biomedical research.

DESCRIPTION OF CONTENTS

1. LIMNOLOGY I: Environmental variables.

Hydrological cycle. Hydrographic basin. Morphometry. Light. Temperature. Oxygen. Conductivity. Salinity. pH. Alkalinity. Carbon. Dissolved and total nutrients (N-P). Sediment (organic matter, nutrients...).

2. LIMNOLOGY II: Biological communities.

Typology and diversity of aquatic organisms. Consumers: Zooplankton, Zoobenthos. Aquatic vertebrates. Primary producers: Phytoplankton, periphyton, macrophytes.

3. LIMNOLOGY III: Models of trophic networks and Succession.

Trophic network models. Alternative equilibrium in shallow lakes. Periodicity and succession in plankton.

4. LIMNOLOGY IV: Lotic systems, reservoirs and wetlands.

Rivers: Continuous river model. Nutrient spiral. Riverbank forest. Bioindicators. Reservoirs. Characteristics and zoning. Colonisation, filling effect and age of reservoirs. Environmental impact. Natural and artificial wetlands. Characterisation and typology. Ecology of fluctuating, temporary and permanent ecosystems.

**WORKLOAD****PRESENCIAL ACTIVITIES**

Activity	Hours
Total hours	0,00

NON PRESENCIAL ACTIVITIES

Activity	Hours
Attendance at other activities	6,00
Individual or group project	6,00
Independent study and work	20,00
Preparation of lessons	4,00
Preparation for assessment activities	4,00
Resolution of case studies	5,00
Total hours	45,00

TEACHING METHODOLOGY

The methodology to be used will include:

- Lectures given by the professor to provide the fundamental knowledge and methodology to be used.
- Laboratory practicals for the study and analysis of samples.
- Seminars on theoretical and practical aspects of the syllabus.

EVALUATION

- Attendance and participation in programmed activities such as: classes, field trips, practicals, seminars, debates, etc. (5 % of the final mark).
- Written exercise in an undefined proportion of closed-answer multiple-choice questions, short answer questions and/or long answer questions, on the theoretical-practical syllabus (30 % of the final mark).
- Elaboration and defence in oral presentation in class, of works carried out such as workshops and seminars on scientific articles and other aspects of interest in limnology (30 % of the final mark).
- Report, structured as a scientific article, on the activities carried out during the practical sessions in the



field and laboratory (35 % of the final mark).

The evaluations corresponding to the first and second call will have the same basis.

REFERENCES

- Bronmark, C. & Hansson, L. 2010. The biology of lakes and ponds. Ed. Oxford University Press. - Casado, S. & Montes, C. Guía de los lagos y humedales de España. Ed. J..M. Reyero. -Closs, G. Downes, B., Boulton, A. 2004. Freshwater ecology. Blackwell Publishing. -Dodds W. K. 2003. Freshwater Ecology. Academic Press. -Frid, C. L. & Dobson, M. 2002. Ecology of Aquatic Management: Aquatic Resources, Pollution and Sustainability. Prentice Hall. -Horne A. J. & Goldman Ch. 1994. Limnology. Mac Graw Hill. -Kalff, J. 2002. Limnology. Prentice Hall. -Kumagai M. & Vicent W.F. 2003. Freshwater management. Global versus local perspectives. Springer. - Lampert W. & Sommer, U. 1997. Limnology. Ecology of lakes and streams. Ed. Oxford University Press. -Maitland P.S. & Morgan N.C. 1997. Conservation and management of freshwater habitats: lakes, rivers and wetlands. Chapman & Hall-Kluwer. New York. -Margalef, R. 1981. Limnología. Omega. Barcelona. -Miller, G. T. 2002. Introducción a la ciencia ambiental. Thomson - Moss, B. 1998. Ecology of fresh waters. Man and medium, past to future. Blackwell. Oxford. - Petts, G. & Calow, P. 1996. River biota. Diversity and dynamics. Blackwell Science. -Scheffer, M. 1998. Shallow lakes. Chapman & Hall. -Wetzel, C. 2001. Limnology. Elsevier. -Wetzel R.G. & Likens G.E. 2000. Limnological analyses. Springer-Verlag, New York.