Master IDEA academic structure

	C.C.	C.I.
MODULE I – Transverse skills	15	15
MODULE II – Water quality indicators, assessment and environmental laws	15	15
MODULE III - Biomonitoring and restoration of stressed water bodies	0	12
MODULE IV – Water treatment technology	0	12
MODULE V – Applied Computational Techniques in Water Quality Modelling and Prediction	0	12
MODULE VI – Advanced Research Topics	0	30
MÓDULE VII- Professional Experience	0	12
MODULE VIII- Master Thesis	6	6
Total number of credits needed for the Master's Degree	**60**	

C. C.: compulsory ECTS credits

C. I.: imparted ECTS credits

Master Exchange Programs

- Erasmus Agreement with Osnabruck University (Germany). The student is required to be proficient in German.
- Virtual Exchange Program among the Universities of Oporto (Portugal) and Leuven (Belgium). The student is required to be proficient in English.

Pre-enrolment *:

- Phase I: February
- Phase II: July-August
- Phase III: September

*Distrito Único Andaluz

http://www.juntadeandalucia.es/economiainnovacionyciencia/sguit

Limited number of students : 30

General information:

Areas of knowledge: SCIENCE/TECHNOLOGY

Ministry code: 4313365

Credits (ECTS): 60

Code: M96/56/1

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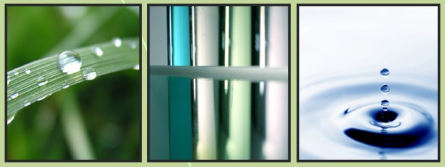
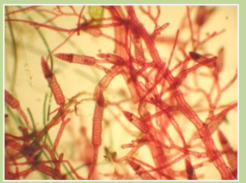
Masters Programe offered by the University of Granada
MASTER IDEA (60 ECTS)



Water Quality Science and Technology: Diagnosis Treatment Prediction



www.calidaddelagua.es/mastercalidad/

mastercalidaddelagua@ugr.es

Masters Programme in Water Quality Science and Technology

The masters programme in **Water Quality Science and Technology** (Master IDEA) will allow you to gain a **general understanding**, as a professional or as a researcher, **of methods, techniques and advanced tools to**:

- **implement efficiently** environmental laws arising from the **Water Framework Directive**

- **analyze complex problems** affecting **water quality** rivers, lakes and reservoirs, transition and coastal waters, and, aquifers

- **assess** the **cost** of **water pollution problems**, and **implement remediation measures**

- **Major in DIAGNOSIS**

Biomonitoring and restoration of stressed water bodies

You will learn (1) to describe and quantify the human impact on ecosystem services; (2) to design and implement biomonitoring strategies for early detection of water quality problems; and (3) to design and implement conservation programs

Subjects in this major include:

M3.1.1. *Molecular indicators* (3 ECTS)

M3.1.2. *Microbial indicators* (3 ECTS)

M3.1.3. *Ecotoxicological methods* (3 ECTS)

M3.1.4. *Conservation of aquatic ecosystems* (3 ECTS)

- **Major in WATER TREATMENT TECHNOLOGIES**

Water technologies

You will learn (1) to design and apply treatment technologies to meet precise water quality targets, and (2) to design and manage water networks

Subjects in this major include:

M4.1.1. *Water Treatment Plants: design and construction* (3 ECTS)

M4.1.2. *Advanced technologies for waste-water treatment* (3 ECTS)

M4.2.1. *Industrial waste-water treatment* (3 ECTS)

M4.3.1. *Source water quality management, drinking- and sewage water network design* (3 ECTS)

- **Major in PREDICTION**

Tools and techniques for water quality modelling and prediction

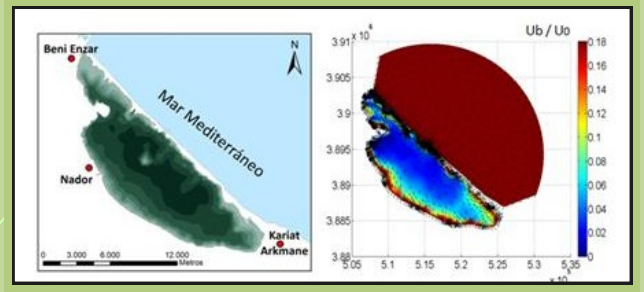
You will learn to develop advanced transport and water quality models, based on numerical methods applied to the solution of conservation laws or by means of statistical analysis, and use them (1) to assess the human impact on water quality and ecosystem services, and (2) to design and optimize restoration programs and water treatment operations

Subjects in this major include:

M5.1.1. *Numerical analysis applied to the prediction and treatment of water quality* (3 ECTS)

M5.2.1. *Pollution of water bodies* (5 ECTS)

M5.2.2 *Contaminant flows across interfaces* (4 ECTS)



Academic staff:

Our instructors are university professors from the U.S. and Europe with **strong academic and professional experience in wide range of fields** (ecology, civil engineering, biology, environmental law, economics, etc.)