GHENT UNIVERSITY

Course Specifications

From the academic year 2024-2025 up to and including the academic year

Marine GIS and Spatial Planning (C003875)

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

Credits 3.0 **Study time 75 h**

Course offerings in academic year 2025-2026

A (semester 1) English Gent

Lecturers in academic year 2025-2026

Da Costa Monteiro, Luana	WE11	lecturer-in-charge

Offered in the following programmes in 2025-2026	**crdts**	**offering**
International Master of Science in Marine Biological Resources	3	A

Teaching languages

English

Keywords

Position of the course

Introduction to maps and GIS
- Basic cartographic notions
- Map viewers vs. GIS software

Data
- Data structure, types
- Data sources
- Remote sensing servers

Layers
- Common vector operations. Data tables
- Common raster operations
- Map calculators (algebra)
- Interpolation
- Overlays between discrete (vectors) and surface (raster) layers

Intro and overview of satellite remote sensing
- Ocean color
- Infrared sensors and sSST [restricted now to Ocean Color datasets]

Case studies and interfacing GIS and R: spatial patterns, basic habitat modeling (within GIS software), home-ranges, etc.
- Spatial planning
- Coastal Zone: planning and integrated management
- The coastal zone. Problems and risks
- Elements of spatial planning
- The general model. Phases: planning, diagnosis, implementing and evaluation
- Coastal zone management in the European Union: policy and laws
- The Mediterranean Protocol
- The green book on Maritime Policy
- Examples and case studies

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Initial competences

Basic understanding of major abiotic and biotic variables in marine science. Basic understanding of the dynamics of marine ecosystems. User-level ease with computers. Basic knowledge of data processing and analysis.

Final competences

1 Competence and autonomy with data types and availability in GIS and remote sensing.
2 Understanding of tools and algorithms common to most software in the field.
3 Understanding of the main tools in spatial planning; coordination and decision in practical case studies.

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

Study material

None

References

Course content-related study coaching

Assessment moments

end-of-term assessment

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

Skills test, Written assessment

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

Skills test, 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

Computer-based exam, including short questions on concepts and practical exercises. Students can use all their course materials and the Internet during the exam.

Calculation of the examination mark

The grades will be quantitative; one third of the marks would be based on short, concept questions, and two-thirds would be based on practical exercises.