

## Marine GIS and Spatial Planning (C003875)

<b>Course size</b>	<i>(nominal values; actual values may depend on programme)</i>		
<b>Credits</b> 3.0	<b>Study time</b> 75 h	<b>Contact hrs</b>	48.0h

### Course offerings in academic year 2022-2023

A (semester 1)	English	Gent
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### Lecturers in academic year 2022-2023

O'Connor, Ian	GALWAY02 lecturer-in-charge
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### Offered in the following programmes in 2022-2023

	crdts	offering
<a href="#">International Master of Science in Marine Biological Resources</a>	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

### Contents

Introduction to maps and GIS

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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**

Lecture, Seminar: practical pc room classes

### **Learning materials and price**

### **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 examination, Open book examination

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

Skills test, Written examination, Open book examination

### **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.