Université de Bretagne Occidentale

MASTER BIOLOGIE

PARCOURS INTERNATIONAL MASTER OF SCIENCE IN MARINE BIOLOGICAL RESOURCES (IMBRSEA)

semestre 7

Marine GIS and spatial planning

Objectifs

Students shall get enough understanding of the rationale, techniques and software tools as to use them in the respective master projects, as well as to boost self-learning afterwards.

3 crédits ECTS

Volume horaire

Cours Magistral : 20h
Travaux Pratiques : 20h

Pré-requis nécessaires

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.

Compétences visées

- Data search and retrieval
- Relevance of each type of data and their combinations to the specific nature and spatial scale of marine questions
- Ability and autonomy using algorithms to perform spatial analyses

Descriptif

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

Modalités de contrôle des connaissances

Session 1 ou session unique - Contrôle de connaissances

Nature de l'enseignement	Modalité	Nature	Durée (min.)	Coefficient	Remarques
	Contrôle ponctuel	Travaux Pratiques	240	50%	
	CT	Ecrit - devoir maison		50%	

Session 2 : Contrôle de connaissances

Nature de l'enseignement	Modalité	Nature	Durée (min.)	Coefficient	Remarques
	CT	Ecrit et/ou Oral		100%	