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Introduction to GIS application in Marine resources management

No. of credits: 4,5 ECTS

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I- Prerequisites

Students need to have knowledge about

+ Cartography

+ Fundamental of GIS

II- Objectives of the module

- Understanding the basic knowledge of database management and applications of GIS in MRM
- Exploring various sources of geographic data and the types of spatial data
- How to collect & input geographical data into GIS system.
- Techniques for processing and analysing spatial data
- Methods for visualizing and presenting spatial data
- Organising and managing spatial datasets, databases.
- Final GIS project and present student's findings.

III – Content of the module

Topic 1 - Systematize basic knowledge of GIS and the ability to apply GIS in marine resources management

Topic 2- Some GIS software, content and data structure of GIS database

Topic 3 - Get familiar with the ARCGIS interface

Topic 4: Building a geodatabase

Topic 5- Visualising database

Topic 6- Database queries

Topic 7- Spatial analysis

Topic 8- Map conversion

Topic 9- Map editor

Topic 10- Building database

IV – References

- [1] Lecture of GIS application in marine resources management
- [2] Trần Vĩnh Phước (2003), GIS đại cương -phần lý thuyết, Nxb ĐHQG TPHCM, TP.HCM.
- [3] Nguyễn Kim Lợi, Trần Thống Nhất (2008), Hệ thống thông tin địa lý, Nxb. Nông nghiệp, TP.HCM.
- [4] Đặng Văn Đức (2001), Hệ thống Thông tin Địa lý, Nxb Khoa học Kỹ thuật Hà Nội, Hà Nội.
- [5] Trần Trọng Đức (2010), GIS căn bản, Nxb. ĐHQG TP. HCM, TP.HCM.
- [6] Nguyễn Hồng Phương -Đinh Văn Ưu (2008), Hệ thống tin địa lý và một số ứng dụng trong hải dương học
- [7] Ian Heywood, Sarah Cornelius Steve Carver (2006), An Introduction to Geographical Information Systems, 3rd edition, Pearson Education Limited.
- [8] Jochen Albrecht (2007), Concepts and techniques in GIS, Sage.
- [9] Paul Longley, Michael Goodchild, David Maguire, David Rhind (2004), Geographic Information and Science, 2nd edition, John Wiley & Son.

IV – References

- [10] Rolf A. de By et al. (2001), Principles of geographic information systems – An introductory textbook, ITC, Netherland.
- [11] Stavros Kolios, Andrei V. Vorobev, Gulnara R. Vorobeva, Chrysostomos Stylios (auth.) (2017), GIS and Environmental Monitoring: Applications in the Marine, Atmospheric and Geomagnetic Fields.
- [12] Paul Bolstad (2019), GIS Fundamentals: a First Text on Geographic Information Systems
- [13] Tian, Bai (2017), GIS technology applications in environmental and earth sciences
- [14] Patrick McHaffie (Author); Sungsoon Hwang (Author); Cassie Follett (Author) (2017), GIS: An Introduction to Mapping Technologies
- [15] Darius Bartlett, Louis Celliers (2016) Geoinformatics for marine and coastal management

V- Subject assessment form

Progress assessment (40%):

- Exercise in class (10%):
- Homework (15%):
- Semi- examination (15%)

Final assessment (60%):

- Group report (30%):
- Final examination (30%)



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