



MANGALORE UNIVERSITY
DEPARTMENT OF MARINE GEOLOGY
MSc GEOINFORMATICS

GIE 508: GEOINFORMATICS OF COASTAL ENVIRONMENTS
(OPEN ELECTIVE)

Course Outcome: Students from different disciplines will understand the basics of geoinformatics and they can make use of this technology quite effectively for the generation of maps related to coastal information system, coastal landforms etc.

CO1: Concepts of Geoinformatics. Outlines of Remote Sensing, Air Photo Interpretation, and Geographic Information System. Aerial photos and remote sensing of coastal environment

CO2: Various tools of Geoinformatics can be effectively used to understand the coastal environment. Geoinformatics of coastal environment will help the students in understanding the coastal environment in a better way.

Unit 1	Introduction: Concepts of Geoinformatics. Outlines of Remote Sensing, Air Photo Interpretation, and Geographic Information System. Aerial photos and remote sensing of coastal environment	06 hrs
Unit 2	Outlines of Indian Satellites: Indian space Program, Scientific Payloads from India and abroad, Bhuvan: Description of 3D Satellite Mapping . IRS-P4, Ocean Sat-II: Description and Payloads. IRS-IC/D. A brief note on Hyperspectral Remote Sensing. Resourcesat, Cartosat-I & II etc.	06 hrs
Unit 3	Data and Data products: List of Data and Data Models. Digital Data Products, Topographic Sheets and Theme Analysis, Hydrographic Sheets, Outlines of the I.H.O. Bathymetric measurements and outlines of Echosounders and Multibeam unit.	06 hrs
Unit 4	Coastal Environments: Geomorphology of Coasts. Classification of Coastal Environments. Relevance Geology and Geotectonics to the genesis of coasts.	06 hrs
Unit 5	Spatial Analysis of Coastal Environments: Collection of Spatial Data from Coastal Environments. Data Interpretation and use of GIS in modeling studies.	06 hrs

Unit 6	Coastal Regulations and Zones: Outlines of CRZ-I, CRZ-II, CRZ-III and CRZ-IV. Amendments to the CRZ norms	06 hrs
Unit 7	Coastal Development: Definition and Description of Ports and Harbours. Application of EIA and CRZ to development Ports and Harbours. EIA Norms and Criteria for Recreation and Water sports.	06 hrs
Unit 8	Coastal Information System: Concepts of a Coastal Information System. Use of GIS in developing a Coastal Information System. Use of RS and GIS in developing coastal information system.	06 hrs

References

1. Áine Ryall 2009, Effective Judicial Protection and the Environmental Impact Assessment Directive in Ireland. Hbk, 1-332.
2. Aradhana, A. 2006, "Special Economic Zones: Revisiting the Policy Debate",. Economic and Political Weekly, Vol. XLI Nos. 43 and 44, 4-10
- 3 Aradhana, A. 2009, Genesis, Evolution, and the Changing Role of SEZs in Asi : 4. A Comparative Analysis of Taiwan. Korea and India, Mimeo, Korean Institute of Economic Policy (KIEP).2-12.
5. Berling, G.L. and Roy, W.W. 1989.Application of Aerial Photographs and Remote sensing Imagery in Urban research and studies. Monticell,6-33.
7. Bonham- Carter G.F., 1994. Geographic Information System for Geoscientists, Pergamon Press, Tarrytown, New York, 6-9.
- 9 Brench, M. C., 1971 City. Planning and Aerial information. Harvard University, Cambridge.12-45.
- 10 Burough, P. A., 1986. Principles of Geographic Information systems for Land Resources Assessment, Clarendon Press, Oxford, 1-194.
- 11 Land, T. G.,1999 1999 ArcView-3D Analyst. ESRI press.6-23.
- 12 Michael Zeiler 1999 The ESRI Guide to GIS Analysis Vol I. ESRI press.4-16.
- 13 Michael Zeiler, Modeling Our World: The ESRI Guide to Geodatabase Design. ESRI press. 3-7.
- 14 [Prabha Shastri Ranade](#), 2009, *Special Economic Zones: Global And Indian Experiences*, ISBN: 8131411559, Publ: ICFAI, 324pp.
- 16 Sabine Latteman, 2010, Development of an Environmental Impact Assessment and Decision Support System.12-23.
- 17 Wood, C., 1995, Environmental Impact Assessment –Acomparative Review. 1-337.