

GI8015 GEOINFORMATICS APPLICATIONS FOR CIVIL ENGINEERS

DETAILED SYLLABUS

OBJECTIVE:

- To solve the Civil Engineering problems with the help of Geoinformatics technique.

UNIT I LAND RESOURCE MANAGEMENT

Total Station and GPS Surveys – Topographic and Bathymetric Surveys – Cadastral Information – Soil and Land Use Surveys - Land Information System (LIS) – Real Estate Information System

UNIT II STRUCTURAL STUDIES

Deformation studies of deflection - Dam deformation - structural movement - Pavement yield - shifting sand-bank and shoreline – Landslide Risk Analysis

UNIT III SOIL CONSERVATION AND MANAGEMENT

Soil survey interpretation and mapping - impact of agricultural and industrial activity on soil properties - soil erosion - factors influencing soil erosion - soil contamination using Hyper spectral Remote Sensing - mining pollution- EMR responses with contaminated soil - modeling soil characteristics using satellite data - soil degradation assessment using Remote Sensing and GIS - Land reclamation studies

UNIT IV URBAN AND TRANSPORTATION MANAGEMENT

Monitoring Urban Growth through Remote Sensing - Geo-demographic Analysis – Property Market Analysis Urban Renewal - traffic analysis - accident analysis - site suitability analysis for transport infrastructure –transportation databases: creation and maintenance - Vehicle routing – Highway maintenance system – Intelligent Transportation System

UNIT V WATER RESOURCES PLANNING AND MANAGEMENT

Location of storage/diversion works – capacity curve generation – sediment yield - modelling of catchments – Delineation of watershed - Watershed modelling for sustainable development - Rainfall – Runoff modelling –LiDAR Mapping for Urban area –Water quality mapping and monitoring – Flood Risk Zoning - Flood damage assessment – Flood Modelling - Assessment of droughts and mitigation

TEXTBOOKS:

1. Basudeb Bhatta, 'Remote Sensing and GIS', Second edition, Oxford University Press 2011.
2. Lo. C.P., Albert K.W. Yeung, Concepts and Techniques of Geographic Information Systems, second edition, PHI Learning Private Limited, Delhi, 2014.

REFERENCES:

1. Andrew N. Rencz, Manual of Remote Sensing: Remote Sensing for Natural Resource Management and Environmental Monitoring, John Wiley & Sons Inc, April 2004

Diploma, Anna Univ UG & PG Courses

Notes
Syllabus
Question Papers
Results and Many more...

Available @

www.AllAbtEngg.com

2. Rashed, Tarek; Jürgens, Carsten (Eds.), Remote Sensing of Urban and Suburban Areas, Springer, 1st Edition. 2010.
3. Harvey J. Miller, Shih-Lung Shaw, Geographic Information Systems for Transportation – Principles and Applications, Oxford University Press, 2001.
4. Gert A. Schulitz Edwin T. Engman, Remote Sensing in hydrology and Water Management, Springer - verlag Berlin Heidelberg Germany - 2000.