

GUJARAT TECHNOLOGICAL UNIVERSITY
M. E. Construction Management (Branch Code - 49)

Year – II (Semester – III) (W.E.F. June 2013)

Subject: Application of Geoinformatics in Construction Management (734903)

Sr. No.	Course Content	hours
1	Remote sensing: Introduction, Multi concept, Electromagnetic radiation, energy interaction in the atmosphere and with, earth surface features, resolution, pixel, Sensors and Platforms. data products: data reception, transmission, and processing, Digital image processing:	16
2	GIS: Introduction, component of GIS, input data, data acquisition, georeferencing, spatial data structures, modeling surfaces, networks, Spatial data analysis: data integration, spatial interpolation, surface analysis, network analysis, digital terrain visualization, Global Positioning System(GPS) and Ground-Penetrating Radar (GPR).	16
3	Applications in Infrastructure Construction and Management : (i) Planning and Developing Infrastructure, Infrastructure Life Cycle, data acquisition, design, construction, infrastructure data continuum, (ii) Emerging Trends in Building Automation and Control Systems for Facilities Management, construction material procurement, network analysis. (iii) Transport infrastructure, Existing Underground Utilities, georeferencing, preventing Utility Damages, Safety of Construction crews, or the Public, Tunnel construction, site layout and inventory management. (iv) Strategic spatial development, Regional and urban planning, Reducing construction waste and improving construction efficiency. GIS- based construction quality management.	06 06 06 06

Tutorials:

Assignment work is based on above subject contents contain:

1. Preparation of presentation for the assigned task.
2. Orientation of functional tools of ILWIS/ Erdas Imagine/ ArcGIS/ Garmin GPS.

References:

1. P.A. Burrough and R.A. McDonnell, Principles of Geographical Information Systems, 2nd ed. Oxford, England, Oxford University Press.
2. B. Bhatia, Remote Sensing and GIS, Oxford University Press, New Delhi
3. J.R. Jensen, Introductory Digital Image Processing, Prentice-Hall, New Jersey
4. Prescribed Web references