SARDAR PATEL UNIVERSITY
Programme: MSC (Information Technology)
Semester: II
Syllabus with effect from: June 2014

Paper Code: PS02EINT04	Total Credits: 4
Title Of Paper: Geographic Information Systems	

Unit	Description in detail	Weightage (%)
1	**Introduction** The Concept of Spatial information System, Definitions & Technology Map and GIS, Components of GIS, The Four Ms of GIS. **Data Types and Spatial Relationship** Point, Line, Polygon / Area, Surface, Non-spatial Attribute Data, Topology **Data Sources** Maps, Satellite Imageries, GPS and Survey Measurements, Tabular, Repositories : Global Spatial Data Infrastructure (GSD), National Spatial Data Infrastructure (NSD), Natural Resources Repository (NRR) **Geo-referencing** Datum, Coordinate System, Projection, Datum / Projection Transformations	20 %
2	**Special Data Model and Data Injection** Raster Models, Vector Models and Attribute Classification **Database Creation and Organization** Database Design, Spatial Database Creation, Database Editing and Error sources and Error Handling, Edge Matching and Rubber Sheeting, Linking of Attribute Data, Database Partitioning and indexing.	20 %
3	**Data Quality** Accuracy, Precision and Resolution, Consistency, Completeness and Lineage **Basic Spatial Analysis** Queries (Spatial, Non- Spatial Topology), Measurement, Classification, Point Data Analysis, Line Data Analysis, Polygon Data Analysis, Data Generalization, Data Reduction and Smoothing **Map Generation** Template Selection, Title and Content, Page Size and Scale, Label, Legend and Symbology	20 %
4	**Advanced Spatial Analysis** Grid Analysis, Network Analysis, 3 D Analysis	20 %
5	**GIS Packages** **GIS Project Design & Management** **Technology Trends** Mobile GIS, Internet / WEB GIS, Standards and Inter operability, SDI **Applications** Location Based Services, Disaster Management, Utility Management, E-governance	20 %

Basic Text & Reference Books:

> Geographical Information Systems Principles, Techniques, Management & Applications Second Edition, Abridged By Paul A. Longley, Michael F. Goodchild, David J, Maguire, David W. Rhind by John Wiley & Sons Inc.