GUJARAT UNIVERSITY

K. S. SCHOOL OF BUSINESS MANAGEMENT
[Five Years' (Full-time) Integrated Degree Course]

Semester-9 [M.Sc. (CA & IT)]

Subject Code: - KS_C_CC - 593
Subject Name: - GEOGRAPHIC INFORMATION SYSTEM
Course Credit: - 3

Unit No.	Course Content	Weight-age (%)
1	A. Theoretical concepts of GIS Basic concepts: Definition and history , Components of GIS, Hardware & Software requirements ; Representation of Geographical data in computer, Data structure and formats ; Spatial data-maps and its characteristics ; Map Projection.	**(20%)**
2	Spatial data models – Raster and Vector Data ; Attribute data management- database and data model ; Data input and editing- methods, editing,integration ; Geometric rectification ; Digitization, error identification, Errors: Types, sources, Correction ; Editing and topology building.	**(20%)**
3	Vector over raster analysis ; Data analysis- measurements, queries, reclassification , buffering, map ,overlay, map manipulation ; Raster data analysis ; interpolation ; analysis of surfaces, network analysis,Path analysis.	**(20%)**
4	Mapping Concept – Map Elements, Map scales and representations, Output from GIS -maps, non-cartographic output, spatial multimedia, decision support . Web-GIS applications : WMS, WFS and other OGC statndards Issues in GIS -data quality, human and organizational issues .	**(20%)**
5	**B. Practical aspects of GIS** Study of the GIS related tools and packages such as QGIS, for data storage and analysis and display. Development of a typical application of GIS with suitable database engine.Development of web map service using Geoserver.	**(20%)**

Main Reference Books / References:

1. Burrough, P. A. and McDonnell, R. A. (2000): Principles of Geographical Information Systems, Oxford University Press, New York
2. Chang, K. T. (2008): Introduction to Geographic Information Systems, Avenue of the Americas, McGrawHill, New York Longley.
3. Heywood, I., Cornelisus, S., Carver, S. (2011): An Introduction to Geographical Information Systems, Pearson Education, New Delhi
4. Korte, G. B. (2001): The GIS Book, Onward Press, Bangalore
5. Lo, C. P., Yeung, A. W. (2002): Concepts Techniques of Geographical Information Systems, Prentice-Hall of India, New Delhi
6. ArcGIS Developer's Guide for Visual Basic Applications, Razvi, Onword Press,2002
7. Developing GIS Solutions with MapObjects and Visual Basic, Bruce Ralston, Onwors Press,2002.
8. Geoserver Beginer's Guide, Brian Youngblood and Stefano Lacovella

Recommended Lecture Scheme: Approximately 30 to 35 hours in a semester

Recommended Practical Scheme: QGIS (Open Source GIS) software demonstration as a part of Unit V and assignment can be given based on this.

Assignment: Minimum five assignments should be given.