

HEMCHANDRACHARYA NORTH GUJARAT UNIVERSITY, PATAN

B.C.A. Semester – V

BCA-504(Elective-III) : Geographic Information System

Teaching Scheme (per week)		Teaching Scheme (per semester)		Examination Scheme					
				INT		EXT		TOTAL	
Th. (hours)	Pr. (hours)	Total Hours	Credit	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)	Th. (marks)	Pr. (marks)
4	--	40	4	30	--	70	--	100	--

Unit – I

[18 MARKS]

Fundamentals of GIS

Defining GIS, components of GIS, spatial data, spatial data -maps, characteristics, spatial data modelling, attribute data management -database data model, GIS applications and developments in database.

Unit-2

[17 MARKS]

Input-Output and Data Analysis in GIS

Data input and editing– methods, editing, integration, Data analysis -measurements, queries, reclassification, buffering, map overlay, interpolation, analysis of surfaces, network analysis, spatial analysis, Analytical modeling in GIS -physical, environment and human processes, output from GIS –maps, non-cartographic output, spatial multimedia, decision support.

Unit – 3

[18 MARKS]

Issues in GIS

Development of computer methods for spatial data, Issues in GIS –data quality and errors, sources of errors, human and organizational issues, GIS project design and management – problem identification, designing a data model, project management, Implementation, evaluation, the future of GIS, Internet resources of GIS.

Unit – 4

[17 MARKS]

Remote Sensing and GPS

Principles of remote sensing, remote sensing system classification, Imaging characteristics, extraction of information from images – metric and thematic, Integration of RS and GIS, GPS, accuracy of GPS, differential GPS, applications GPS, Integration of GIS and GPS.

TEXT BOOKS:

1. **Heywood, Cornelius and Carver: An Introduction to Geographical Information Systems** - Person Education Asia 2000
2. **C.P.Lo and Albert Yeung : Concepts and techniques of Geographic Information Systems** -PHI, New Delhi.
3. **George korte: The GIS Book** , 5th edition, Onword Press, 2001.
4. **Razvi: ArcGIS Developer's Guide for Visual Basic Applications** - Onword Press, 2002
5. **Bruce Ralston: Developing GIS Solution with Map objects and Visual Basic** - Onword Press, 2002

Question Paper Scheme:

University Examination Duration: 3 Hours

Q-1 – Unit -1 (18 Marks)

- M. Objective / Short Questions
- N. Descriptive / Long Questions

Q-2 – Unit -2 (17 Marks)

- M. Objective / Short Questions
- N. Descriptive / Long Questions

Q-3– Unit -3 (18 Marks)

- M. Objective / Short Questions
- N. Descriptive / Long Questions

Q-4 – Unit -4 (17 Marks)

- M. Objective / Short Questions
- N. Descriptive / Long Questions

Note: All Objective/ Short Questions are compulsory, no option will be given.