

Course No: NRG 179
 Course Title: **Advances in GIS and Current Trends**
 Number of Credits: 4 (2-1-1)
 No. of Lectures-Tutorial-Practical: 28-14-28
 Course Coordinator: Prof. PK Joshi

Aim

- Introduction to trends and advances in GIS.
- New ways of data collections, dissemination and applications of GIS technology.

Course Outline

The course will provide latest state of art in GIS technology. It will provide an opportunity to understand and work with latest developments in this. The curriculum covers wide range of software, hardware and application suits.

Pre-requisite

NRG 174 Spatial data modeling & applications

Evaluation Procedure

- 2 minor tests: 10% each
- Tutorials: 20%
- Practical: 20%
- Major exam: 40%

Details of course content and allotted time

SNo	Topic	Time (Hrs)		
		L	T	P
1.	Current Trends and advancement in GIS	6	4	
2.	Participatory GIS and Mobile GIS	4	4	8
3.	Internet GIS (Front page, Dreamweaver; scripting etc.)	4	6	6
4.	WebGIS (ArcIMS/MapServer/MapGuide)	6		6
5.	Strengthening Oracle and Macro Languages	6		6
6.	Distributed GIS systems	2		2
	Total	28	14	28

Textbooks

1. Berry J.K. (1993) *Beyond Mapping: Concepts, Algorithms and Issues in GIS*, Fort Collins, CO, GIS World Books.
2. Burrough P.A. and McDonnell R.A. (1998) *Principles of Geographical Information Systems*, Oxford University Press, Oxford, 327 pp.
3. ESRI (1995) *ARC Macro Language*, ESRI Press, 828 p.

Suggested Readings

1. Malczewski J. (1999) *GIS and Multicriteria Decision Analysis*, New York: John Wiley and Sons.
2. Menno-Jan K. and Brown A. (2001) *Web Cartography–Developments and Prospects*, Taylor & Francis, New York.
3. Michael P.P. (ed.) (2003) *Maps and the Internet*, Elsevier.
4. Michael W. and Duckham M. (2004) *GIS: A Computing Perspective*, Boca Raton, CRC Press.
5. Ott T. and Swiaczny F. (2001) *Time-integrative GIS, Management and Analysis of Spatio-temporal Data*, Berlin/Heidelberg/New York, Springer.
6. Ott T. and Swiaczny F. (2001) *Time-integrative GIS, Management and Analysis of Spatio-temporal Data*, Berlin/Heidelberg/New York, Springer.
7. Roy P.S. () *Geoinformatics for Tropical Ecosystems*, Bishen Singh Mahendra Pal Singh, Dehradun.
8. Thurston J., Poiker T.K. and Moore J.P. (2003) *Integrated Geospatial Technologies: A Guide to GPS, GIS and Data Logging*, Hoboken, New Jersey, Wiley.
9. Tyler M. (2005) *Web Mapping Illustrated*, O'Reilly, Sebastopol, 350 pages. This book discusses various Open Source WebMapping projects and provides hints and tricks as well as examples.

Magazines

1. Coordinates
2. GIM International
3. GIS World
4. GIS@development
5. Goespatial today
6. GPS World

Journals

1. Asian Journal of Geoinformatics
2. Geocarto International
3. International Journal of Geoinformatics
4. International Journal of Remote Sensing
5. ISPRS Journal of Photogrammetry and Remote Sensing
6. Journal of Indian Society of Remote Sensing
7. Remote Sensing of Environment