Course title: Advances in GIS and Current Trends				
Course code: NRG 179	**No. of credits:** 4	**L-T-P:** 28-14-28		**Learning hours:** 56

Pre-requisite course code and title (if any): NRG 174 Spatial data modeling & applications

Department: Department of Natural Resources

Course coordinator: Dr Neeti	**Course instructor**: Mr Piyush Dubey

Contact details:

Course type: Core	**Course offered in:** Semester 3

Course Description

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.

Course objectives

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

Course content

SNo	Topic	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**

Evaluation criteria

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

Learning outcomes

1. Provide latest state of art in GIS technology.
2. Software, hardware and application suits

Pedagogical approach

Materials

Required text

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.

Case studies
Websites

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

Additional information (if any)
Magazines
1. Coordinates
2. GIM International
3. GIS World
4. GIS@development
5. Goespatial today
6. GPS World

Student responsibilities
Attendance, feedback, discipline, guest faculty etc