AMITY UNIVERSITY
UTTAR PRADESH

COURSE CURRICULUM

Course Title: GIS & Remote Sensing in Regional & Urban Planning
Course Code:
Credit Units: 3
Course Level: PG

L	T	P/S	SW/FW	TOTAL CREDIT UNITS
2		1	-	3

Course Objectives:
This course describes the various mapping techniques used for urban planning and management.

Pre-requisites : Student should have basic of geography and planning with remote sensing.

Student Learning Outcomes:

- Choose and possibly develop appropriate methods for geospatial framework for data collection and processing for better urban planning..
- Use geo-information science and earth observation technology to generate, integrate, analyze and visualize spatial data.
- Formulate and carry out independent research in the general field of Geinformatics, possibly as part of a multi-disciplinary research and development project.

Course Contents/Syllabus:

	Weightage (%)
Module I	

Descriptors/Topics Introduction, Importance and relevance of Remote Sensing data for Urban and Regional Planning- visual and digital data analysis techniques. Scale and Resolution concepts- Scope and limitations of remote sensing application to urban and regional plans.	**20**
Module II	**20**
Descriptors/Topics Urban and regional mapping, Base map preparation, regional, city, intra –city, scale, methodology. Urban and regional plans formulation, Application of remote sensing techniques, Regional plan. master plan, detailed development plan- Methodologies and stages – Case studies, coastal and wasteland development plans.	
Module III	**20**
Descriptors/Topics Urban analysis, Urban growth, trend analysis, change detection, slum development, housing typology and density analysis population estimation, environmental quality rating- Transportation network analysis- Case studies	
Module IV	**20**
Descriptors/Topics Information system, Database Organisation- Geographic Information System- Large scale data entry- Interpretation manipulation- Retrieval- Suitable software Package- Attribute information for urban planning Urban analysis and modeling with GIS, Decision support system for urban and regional management.	
Module V	**20**
Descriptors/Topics **AM/FM Applications:** GIS/GPS applications in Automated mapping (AM) and Facility management (FM) - Water and sewage related- GIS based urban water demand analysis, pipeline planning and alignment, Electric and power supply related, fuel and food supply related, Telecom applications, Radio coverage Prediction, Signal Strength Mapping.	

Pedagogy for Course Delivery:

The course is designed to be taught through the lecture mode and laboratory exercises. However seminar presentations on various themes related to the course and discussion on various case studies. Class room interaction will definitely have to be an integral part of the learning experience.

Lab/ Practicals details, if applicable:

List of Experiments:

- Urban land use mapping
- Determination and delineation of settlement – Urban, rural from satellite images
- Road Network analysis using GIS
- Land use / land cover mapping and change detection analysis
- Site suitability analysis of Urban Planning using GIS.
- Urban Green space mapping using GIS and remote Sensing

Assessment/ Examination Scheme:

Theory L/T (%)	Lab/Practical/Studio (%)	End Term Examination
30 %	NA	70 %

Theory Assessment (L&T):

Continuous Assessment/Internal Assessment					End Term Examination
Components (Drop down)					
Weightage (%)	10	05	10	05	70

Lab/ Practical/ Studio Assessment:

	Continuous Assessment/Internal Assessment			End Term Examination			
Components (Drop down	**Class Test (Practical Based)**	**Attendance**	**Mid Term Viva**	**Major Lab Exercise**	**Minor**	**Practical Records**	**Viva**
Weightage (%)	15	05	10	35	15	10	10

Text & References:

Brench M.C., 1972, City Planning and Aerial Information, Harvard University, Cambridge,

Maik Netzband, William Stefanov, Charles Redman (Eds.) Applied remote sensing for urban planning, governance and sustainability, Springer, 2007 - 278 p

Jensen, J.R., 2006 "Remote Sensing of the Environment – An Earth Resources Perspective", Pearson Education, Inc. (Singapore) Pte. Ltd., Indian edition, Delhi.

George Joseph, 2004 "Fundamentals of remote sensing", Universities press (India) Pte Ltd., Hyderabad.

Sabins, F.F. Jr., 2007 Edition. 'Remote Sensing – Principles and Interpretation", W.H. Freeman & Co.

Research Journals

- International Journal of Goeinformatics
- International Journal of Remote Sensing
- Environmental Earth Science
- Hydrogeology Journal
- Hydrological Science Journal
- Journal of Earth System Science
- Current Science
- Journal of Indian Society of Remote Sensing
- Remote Sensing of Environment
- IEEE Geoscience and Remote Sensing
- Applied Earth Observation and Geoinformation