

SEM VII

Generic Elective: (GE)

CREDIT DISTRIBUTION, ELIGIBILITY AND PRE-REQUISITES OF THE COURSE

Course title & Code	Credits	Credit distribution of the course			Eligibility criteria	Pre-requisite of the course (if any)
		Lecture	Tutorial	Practical/ Practice		
Environment Management (GE)	4	2	0	2	Class XII pass.	Nil

Learning Objectives

Course Objective: Provides an understanding of how to identify and evaluate the environmental impacts of developmental projects or product/service. Understanding the nature of environmental impact and minimizing the impact within the context of Environmental management. It demonstrates the types of information required for assessing the impacts of a proposal on specific environmental parameters. To impart knowledge of geospatial modelling in evaluating and mitigating the environmental impacts.

Learning outcomes

After completing this course, student should be able to;

- o to evaluate the Environmental Impact Assessment (EIA) &
- o to understand the legal frameworks associated with Environment in India.
- o to use Geospatial and environmental information through opensource.
- o to prepare basic maps e.g., elevation, vegetation etc.
- o to classify Land use and Land cover information and maps.
- o to assess urbanization through spectral band index.
- o to quantify the complex environmental impacts through GIS.

SYLLABUS

Unit I: Introduction to Environmental Impact Assessment (EIA) and Environmental Management (EM). EIA: Scoping, Public consultation, Expert appraisal committee and Environmental clearance of various projects; Introduction to Satellite remote sensing and Geographical information system (8 hours)

Unit II: Satellite image processing: Land use Land cover, Spectral bands of vegetation through Normalized difference vegetation index (NDVI), Ecosystem modelling: Satellite topographical data) and NDVI, Urbanization, Urban Planning and Growth - Central Place Theory (8 hours)

Unit III: Geometry and Ordering, Burgess Model for City Planning, Growth Pole and Growth Centre Theory and Demographic Transition Mode, Waste Management; Municipal Solid Waste Management, Hazardous Waste Management & Radioactive Waste Management, Waste Management: Physicochemical Treatment of Solid and Hazardous Waste, Biological Treatment of Solid and Hazardous Waste & landfill design (8 hours)

Unit IV: Environmental management tools and techniques of sustainable development. Environmental Law (6 hours)

Practical component – (30 hours)

- Environmental Impact modelling
- Environmental Index modelling
- Environmental Impact assessment using spatial database.
- Urbanization and urban sprawl assessment using satellite data.

Essential/recommended readings

1. Environmental Management: Principles and Practice (Routledge Environmental Management Series), Chris Barrow, Routledge, 2003.
2. Environmental Management in Organizations: The IEMA Handbook, John Brady, Alison Ebbage and Ruth Lunn, Earthscan, Washington, DC., 2011.
3. Essentials of Environmental Management, Paul Hyde and Paul Reeve, IOSH Services Ltd. (U. K.), 2004.
4. Textbook of Environmental Studies, Erach Bharucha, UGC 5. Fundamental Concepts in Environmental Studies, D D Mishra, S Chand & Co Ltd

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