

IV Year I Semester

Code: 17CE736

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## ENVIRONMENTAL IMPACT ASSESSMENT AND MANAGEMENT

### Course Learning Objectives

The objectives of this course are:

1. To impart knowledge on different concepts of Environmental Impact Assessment
2. To know procedures of risk assessment
3. To learn the EIA methodologies and the criterion for selection of EIA methods
4. To pre-requisites for ISO 14001 certification
5. To know the procedures for environmental clearances and audit
6. To appreciate the importance of stakeholder participation in EIA

### Course Learning Outcomes

Upon successful completion of this course, the students will be able to:

1. Prepare EMP, EIS, and EIA report
2. Identify the risks and impacts of a project
3. Selection of an appropriate EIA methodology
4. Evaluation the EIA report
5. Estimate the cost benefit ratio of a project
6. Know the role of stakeholder and public hearing in the preparation of EIA

## SYLLABUS

### UNIT-I

**Basic concept of EIA:** Elements of EIA-factors affecting EIA-Initial environmental Examination-life cycle analysis preparation of Environmental Base map-Classification of environmental parameters – role of stakeholders in the EIA preparation – stages in EIA

### UNIT-II

**E I A Methodologies:** Introduction, Criteria for the selection of EIA Methodology, E I A methods, Ad-hoc methods, matrix methods, Network method Environmental Media Quality Index method, overlay methods, cost/benefit Analysis – EIS and EMP

### UNIT-III

**Impact of Developmental Activities and Land use:** Introduction and Methodology for the assessment of soil and ground water, Delineation of study area, Identification of active-application of remote sensing and GIS for EIA.

### UNIT-IV

**Procurement of relevant soil quality,** Impact prediction, Assessment of Impact significance, Identification and Incorporation of mitigation measures - E I A with reference to surface water, Air and Biological environment: Methodology for the assessment of Impacts on surface water environment, Generalized approach for assessment of Air pollution Impact.

## **UNIT-V**

Assessment of Impact of development Activities on Vegetation and wildlife, environmental Impact of Deforestation. Environmental Risk Assessment and Risk management in EIA: Risk assessment and treatment of uncertainty-key stages in performing an Environmental Risk Assessment advantages of Environmental Risk Assessment

## **UNIT-VI**

**EIA notification by Ministry of Environment and Forest (Govt. of India):**Provisions in the EIA notification, procedure for environmental clearance, procedure for conducting environmental impact assessment report- evaluation of EIA report. Environmental legislation objectives, evaluation of Audit data and preparation of Auditreport. Post Audit activities, Concept of ISO and ISO 14000. Case studies and preparation of Environmental Impact assessment statement for various Industries.

### **Text Books:**

1. Environmental Impact Assessment, Canter Larry W., McGraw-Hill education Edi (1996)
2. Environmental Impact Assessment Methodologies, Y. Anjaneyulu, B. S. Publication, Sultan Bazar, Hyderabad.

### **References:**

1. Environmental Science and Engineering, J. Glynn and Gary W. Hein Ke – Prentice Hall Publishers
2. Environmental Science and Engineering, Suresh K. Dhaneja, S. K. ,Katania& Sons Publication., New Delhi.
3. Environmental Pollution and Control, H. S. Bhatia, Galgotia Publication (P) Ltd, Delhi.