

**4/4 B.Tech. EIGHTH SEMESTER**

**CE8T3B**

**ENVIRONMENTAL IMPACT ASSESSMENT**

**Credits: 3**

**Lecture: 3 periods/week**

**Internal assessment: 30 marks**

**Tutorial: 1 period /week**

**Semester end examination: 70 marks**

**Pre-requisites:** Environmental studies

**Learning objectives:**

- To gain knowledge on environment management of unanticipated impacts or other unforeseen changes.
- To learn methods of environmental impact assessment and the permissible Limits.
- To learn practices that maximize environmental benefits.

**Course outcomes:**

At the end of course the student will have:

1. Understanding of the elements of EIA and criteria for the selection of EIA methodology in different methods.
2. Assess Impacts on surface water environment, air pollution sources, suggest appropriate mitigation measures.
3. Comprehend Impact of development activities on vegetation & wildlife and prepare environmental audit report.
4. Awareness of the options to estimate environmental laws.
5. Analyze proposed development project case studies for possible environmental effects and prepare environmental impact assessment report for various industries.

**UNIT – I**

**INTRODUCTION TO EIA & METHODOLOGIES**

Basic concept of EIA, Initial environmental Examination, Elements of EIA, factors affecting the EIA, Impact evaluation and analysis, preparation of Environmental Base map, Classification of environmental parameters. Introduction, Criteria for the selection of EIA Methodology, EIA Methods, Ad-hoc methods, Matrix methods, Network method, Environmental Media Quality Index method, Overlay methods, Cost/benefit Analysis.

**UNIT – II:**

**PREDICTION AND ASSESSMENT OF IMPACTS ON GROUND WATER**

**ENVIRONMENT & SURFACE WATER & SOIL & AIR POLLUTION IMPACTS**

Impact of Developmental Activities and Land use, Introduction and Methodology for the assessment of soil and ground water, Delineation of study area, Identification of actives. E I A in surface water, Air and Biological environment: Methodology for the assessment of Impacts on surface water environment, Air pollution sources. Generalized approach for Assessment of Air Pollution Impacts.

**UNIT-III**

**DEFORESTATION & ENVIRONMENTAL AUDIT**

Assessment of Impact of development Activities on Vegetation and wildlife, Environmental Impact of Deforestation – Causes and effects of deforestation. Environmental Audit and objectives & types of environmental Audit, Audit protocol, stages of Environmental Audit, onsite activities, evaluation of Audit data and preparation of Audit report.

**UNIT – IV**

**POST AUDIT ACTIVITIES**

The Environmental pollution Act, The water Act, The Air (Prevention & Control of pollution Act.), Mota Act, Wild life Act.

## **UNIT-V**

### **EIA CASE STUDIES & MANAGEMENT REQUIREMENTS FOR THE PREPARATION OF EIA OF INDUSTRIAL PROJECTS**

Case studies on Land Use/ Land Cover, Development Projects for Initial Environmental Examination, Assessment of Impacts of Traffic & Transportation, and Preparation of Environmental Impact assessment statement for various Industries.

#### **Learning resources:**

##### **Text books:**

1. Environmental Impact Assessment Methodologies by Y.Anjaneyulu, B.S. Publication, Sultan Bazar, Kakinada.
2. Environmental Science and Engineering, (2nd edition) by Glynn, J. and Gary, W. Hein Ke., Prentice Hall Publishers, 1996.

##### **Reference books:**

1. Environmental Science and Engineering by Suresh, K. Dhaneja S.K. Katania & Sons Publication, New Delhi.
2. Environmental Pollution and Control by Dr.Bhatia H.S., Galgotia Publication Pvt Ltd, Delhi, 1998.

##### **e-learning resources:**

<http://nptel.ac.in/courses.php>

<http://jntuk-coerd.in/>