



IIT Mandi

Proposal for a New Course

Course number : CE515
Course Name : Environmental Impact Assessment
Credit Distribution : 3-0-0-3
Intended for : UG elective (3rd and 4th Year)/PG elective (M-Tech/PhD)
Prerequisite : NA
Mutual Exclusion : None

1. Preamble:

The objective of this course will be to provide knowledge of current environmental, social and economic impacts and methods relating to Environmental Impact Assessment (EIA), and consider in detail how these impacts can be quantified and analysed. EIA is a tool used to assess the positive and negative impacts of a project. This tool helps in predicting environmental impacts of a project in the pre-planning stage itself so that decisions can be taken to reduce the adverse impacts. This course will have following learning outcomes

- In this course students will develop basic understanding to assess the impact of project on the environment. Students will also learn criteria for selecting method for impact assessment, parameters for public participation and technique for writing EIA reports.
- Knowledge of EIA processes and stages and how it can be applied to specific areas of mining, thermal power plants, river valley, infrastructure (road, highway, ports, harbours and airports), soil, ecology and climate change, pollution problems.
- The course also provides an opportunity to review and appraise the EIA process and associated techniques through investigation of an EIA case study.

2. Course Modules with quantitative lecture hours:

Module 1-EIA Introduction

Introduction, definitions and concepts, rationale and historical development of EIA, Evolution of EIA; EIA at project; Regional and policy levels; EIA process in India and other countries **4 hours**

Module 2: EIA Procedure

Initial environmental examination, environmental impact statement, **8 hours**
environmental appraisal, environmental impact factors and areas of
consideration, Screening and scoping criteria; Rapid and Comprehensive EIA;
Environmental health impact assessment; Baseline collection of data; EIA
pertinent environmental factors

Module 3: EIA Methodologies

Generic steps, descriptive checklists, simple interaction matrix, stepped matrix, **12**
Networks, Overlays, uniqueness ratio, habitat evaluation system, EIA models **hours**

Module 4: Impact Identification, Management and Reporting

Impact Identification, Analysis & Prediction, Development of environment **10**
management plan; Post project monitoring ; Stakeholders consultation / Public **hours**
Involvement in EIA, Mitigation, elements of mitigation, structure and element
of EIA report, EIA documentation, Review process, EIA Regulations in India,
Environmental Management: Preventive policy of environment, waste
minimisation, conservation of water and energy, use of renewable, sources,
pollution audit, pollution control strategy

Module 5 : Case studies

Principles, problems and strategies and remedial actions, Applications for **8 hours**
industrial; Water resources and irrigation projects; ports and harbours, Mining,
Transportation and other projects sectors, Prediction & Assessment of Impacts
on the Water Environment, Air Environment and Soil Environment

Laboratory/practical/tutorial Modules: NA

3. Text books:

1. Canter, L. W. Environmental Impact Assessment, 2nd Ed., McGraw-Hill, 1997.
2. Glasson J., Therivel Riki, Chadwick Andrew, Introduction to Environmental Impact Assessment, Oxford Brookes University 2012/ 4th edition

4. References:

1. Judith,P. and Eduljee,G. Environmental Impact Assessment for Waste Treatment and Disposal Facilities, John Wiley & Sons, 1994.
2. Burke,G., Singh, B.R., and Theodore, L. Handbook of Environmental Management and Technology, 2nd Ed., John Wiley & Sons, 2000.
3. Eccleston, C.H.Environment Impact Statements: A Comprehensive Guide to Project and Strategic Planning, John Wiley & Sons, 2000.
4. Shrivastava A.K., Baxter Nicola, Grimm Jacob, “Environmental Impact Assessment”, APH Publishers, 2003
5. Anjaneyulu Y., Manickam Valli, “Environmental Impact Assessment Methodologies”, CRC Press 2011
6. Welford,R. Corporate Environmental Management - Systems and Strategies, Universities Press, 1996.
7. Whitelaw,K. and Butterworth, ISO 14001: Environmental System Handbook, 1997

4. Similarity with the existing courses:

(Similarity content is declared as per the number of lecture hours on similar topics)

S. No.		Course Code	Similarity Content	Approx. % of Content
1.	NA			

6. Justification of new course proposal if cumulative similarity content is >30%:

NA