GUJARAT TECHNOLOGICAL UNIVERSITY

Bachelor of Engineering
Subject Code: 3171311

Semester – VII
Subject Name: ENVIRONMENTAL IMPACT ASSESSMENT

Type of course: Professional Elective Course

Prerequisite: Knowledge of subjects Environmental studies, Ecology and remote sensing, Fundamentals of Air pollution

Rationale: In order to overcome the problems of environmental degradation, it is very necessary to plan the development process in a sustainable manner so that control and mitigation measures can be undertaken prior to occurrence of degradation. One important tool to do this is carrying out Environmental Impact Assessment. Hence knowledge of this subject is very important for an Environmental engineer.

Teaching and Examination Scheme:

Teaching Scheme			Credits	Examination Marks				Total Marks
				Theory Marks		Practical Marks		
L	T	P	C	ESE (E)	PA (M)	ESE (V)	PA (I)	
3	0	2	4	70	30	30	20	150

Content:

Sr. No.	Content	Total Hrs
1	Sustainable Development : Definition, Need, Methods to achieve Sustainable Development, Sustainable Development Goals	06
2	EIA Notification September 2006 and amendments: Categorization of projects, Procedure for getting environmental clearance, Public participation in environmental decision making process.	08
3	EIA Process 1. Concepts of EIA :Definitions , Environment; Environmental Impacts; Environmental Impact Analysis; Environmental Impact Assessment; Classification of impacts ;EIA as a four step methodology. 2. Generic structure of EIA :Introduction, Project Description, Description of environment , Anticipated Environmental Impacts And Mitigation Measures: Analysis of Alternatives; Environmental Monitoring Programme; Environmental Management Plan	08
4	Description of Environment : • Environmental Attributes : air; water; noise; land and soil ; socioeconomic; cultural & biological • Baseline studies : Purpose, Selection of parameters, Monitoring of physical	08

	environmental parameters, Collection and interpretation of baseline data for various environmental attributes	
5	EIA Methodologies : Criteria for selection of EIA methodology ; Checklist methodology and its types, Matrix and its types, Networks methodology , Overlay method , Cost Benefit analysis	**06**
6	Case Studies: • EIA for chemical industry • EIA for construction project • EIA for mining project	**06**

Suggested Specification table with Marks (Theory): (For BE only)

Distribution of Theory Marks					
R Level	U Level	A Level	N Level	E Level	C Level
10	25	25	25	15	

Legends: R: Remembrance; U: Understanding; A: Application, N: Analyze and E: Evaluate C: Create and above Levels (Revised Bloom's Taxonomy)

Note: This specification table shall be treated as a general guideline for students and teachers. The actual distribution of marks in the question paper may vary slightly from above table.

Reference Books:

1. Environmental Impact Analysis Handbook – by Rau Whooten; McGraw Hill publications
2. Environmental Impact Assessment – by Larry Canter; McGraw Hill publications
3. Environmental Impact Analysis – A Decision Making Tool by R K Jain
4. Handbook of Environment Impact Assessment by Judith Petts; McGraw Hill publications

Course Outcomes:

Sr. No.	CO statement	Marks % weightage
CO-1	Demonstrate the understanding of concept of Sustainable Development and justify the methods of achieving SD.	10
CO-2	Execute EIA Process as prescribed in EIA Notification	20
CO-3	Carry out EIA studies including description of environment using environmental attributes and prepare the EIA report.	40
CO-4	Apply the different methodologies to predict and assess the impacts of project on various aspects of environment.	30

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List of Practicals:

1. Case Study on EIA of building construction projects
2. Case Study on EIA of Mining Industry
3. Case Study on EIA of Cement Plants
4. Case Study on EIA of Chemical Industry
5. Case Study on EIA of CETP
6. Case Study on EIA of TSDF site
7. Categorization of given projects according to Recent EIA Notification.