

# GUJARAT TECHNOLOGICAL UNIVERSITY

## ENVIRONMENTAL MANAGEMENT (18)

ENVIRONMENTAL IMPACT ASSESSMENT

**SUBJECT CODE: 2721801**

SEMESTER: II

**Type of course:** Environmental Management

**Prerequisite:** Basics of Environmental Components, Sustainable Development

**Rationale:** Carrying out EIA & preparing EIA report forms one of the basic requirements of environmental engineer

### Teaching and Examination Scheme:

Teaching Scheme			Credits C	Examination Marks						Total Marks
L	T	P		Theory Marks		Practical Marks				
			ESE (E)	PA (M)	ESE (V)		PA (I)			
					ESE	OEP	PA	RP		
3	2#	0	4	70	30	30	0	10	10	150

### Content:

Sr. No.	COURSE CONTENT	Total Hrs	% Weightage
1	<b>Environmental Management:</b> Introduction, Environment and Development, Sustainable development; managing the environment, essentials of an environment policy and environment act, Environmental issues, priority tradeoffs and scanning approach priority settings.	6	14.3
2	<b>Concept of Environmental Impact Assessment:</b> Concept of Environment; Concept of Environmental impact Analysis and assessment; development of Environmental Impact Assessment, legislative basis, detailed contents of EIA/EIS; Environmental attributes.	4	9.52
3	<b>Institutional aspects of Environmental Assessment:</b> Interagency coordinates, enrolment of affected groups, and local NGOs, Strengthening capabilities financial intermediately lancing.	4	9.52
4	Management of Environmental Assessment, cost and time to prepare EIA, sources of financing, and procurement of consultants.	2	4.76
5	<b>Environmental costs and benefits:</b> Estimation of market value of environmental components, analysis of projects and policies with consideration of environmental cost and benefits, priority values and value function graphs, valuing the impacts in monetary terms, monetary objective decision making, issues of risk and uncertainty.	4	9.52
6	<b>Impact assessment methodologies:</b> Choosing a methodology, categorizing methodologies, review criteria, different assessment methods with relevant examples.	10	23.8

7	<b>Case histories:</b> Case histories related to power generation and transmissions, transportation, water resources development, mining, oil exploration, water and wastewater treatment plants, airports, ports and harbours etc.	6	14.3
8	Public hearing and the law, role of NGO in public hearing.	2	4.76
9	<b>Strategic Environmental Impact Assessment:</b> Concept of SEA, application of SEA in the field, developing the SEA document, case studies of SEA in different countries.	2	4.76
10	Application of GIS in carrying out EIA.	2	4.76

### Reference Books:

1. Handbook of EIA : By Rau Whooten
2. Environmental Impact Assessment: By Larry Canter
3. Environmental Impact Analysis - a Decision Making Tool: By R K Jain
4. Handbook of Environment Impact Assessment: By Judith Petts.
5. Theory and Practice of Environmental Impact assessment: By Abbasi and Ramesh
6. Environmental Impact Assessment: By Shrivastava

### Course Outcome:

After learning the course the students should be able to:

1. Quantify the impacts using value function graphs
2. To prepare EIA reports

### List of Tutorials:

Term Work will comprise of assignments, exercises and quiz based on basic concepts, interaction matrices, EIA methods and case studies.

**Review Presentation (RP):** The concerned faculty member shall provide the list of peer reviewed Journals and Tier-I and Tier-II Conferences relating to the subject (or relating to the area of thesis for seminar) to the students in the beginning of the semester. The same list will be uploaded on GTU website during the first two weeks of the start of the semester. Every student or a group of students shall critically study 2 papers, integrate the details and make presentation in the last two weeks of the semester. The GTU marks entry portal will allow entry of marks only after uploading of the best 3 presentations. A unique id number will be generated only after uploading the presentations. Thereafter the entry of marks will be allowed. The best 3 presentations of each college will be uploaded on GTU website.