

# GUJARAT TECHNOLOGICAL UNIVERSITY

BRANCH NAME: ENVIRONMENTAL ENGINEERING (17)

SUBJECT NAME: ENVIRONMENTAL IMPACT ASSESMENT

SUBJECT CODE: 3711708

M.E. 1<sup>st</sup>SEMESTER

**Type of course:** Engineering and Technology

**Prerequisite:** Sustainable Development, environmental studies, environmental statement etc

**Rationale:** The purpose of EIA is to identify potential environmental impacts from proposals, such as projects and programs, and to propose means to avoid or reduce the significant impacts.

**Teaching and Examination Scheme:**

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

**Content:**

Sr.No.	Topics	Total Hrs.	Percentage Weight age
1	<b>Introduction and Basic Concept of EIA:</b> Concept of Sustainable Development, Evolution of EIA, concepts, Screening, Scoping, Base line studies, Mitigation, General Structure of EIA, EIS, Limitation of EIA, Environmental Risk Assessment	6	15
2.	<b>Methodologies and strategies:</b> Impact prediction techniques, Adhoc Method, Checklist ,Matrix, Network methods, Cost benefit Analysis, Public participation, Public hearing procedure,	12	28
3.	<b>Practical Consideration and Case studies:</b> Economic development and environmental degradation, environmental impacts of typical industries, power plant, larger projects, present scenario of various government resolution on selecting the location of industries, case studies related to infrastructure, mining, thermal power plant, hydro electric, Nuclear power Plant.	12	30
4.	<b>EIA Notification by MOEF(Govt. of India):</b> Provision in the EIA notification, categorization of Industries for seeking environmental clearance	6	15

	from concern authorities, Procedure for environmental clearance, Procedure for conducting EIA Report, Rapid and Comprehensive EIA.		
<b>5</b>	<b>Environmental Management:</b> Environmental Management Plan, Post Environmental monitoring, Life cycle assessment, ISO-14000	<b>6</b>	<b>12</b>

### Reference Books:

1. Environmental Impact Assessment: By Larry Canter, Mc Graw Hill Pub.
2. Handbook of EIA by John Ray and Rau Whooten
3. Environmental Impact Analysis - a Decision Making Tool: By R K Jain, L. V. Urban and G.S. Stacey Publishers : van Nostrand reinhold New York
4. Handbook of Environment Impact Assessment: By Judith Prett
5. Theory and Practice of Environmental Impact assessment: By Abbasi and Ramesh
6. Environmental Impact Assessment: By Shrivastava Environmental Impact Assessment and Statement. John E. Heer, Joseph Hoggerty

### Course Outcome:

After learning the course the students should be able to:

- Prepare portions of environmental documents through administrative and legal Requirements and standards of professional practice
- Fully participate in interdisciplinary environmental report preparation teams
- Critically review an EIA document for completeness and adequacy.
- Analyze proposed development project plans for possible environmental effects and prepare appropriate initial studies.
- Utilize EIA documents for policy development, project planning or for legal or political action planning.

### List of Experiments:

1. Delphi technique for assigning significance to Environmental Attributes.
2. Adhoc Method of EIA
3. Matrices Method of EIA
4. Network Method of EIA
5. Overlays Method of EIA
6. Visit to a Project site/ Office of EIA expert
7. A report of EIA is to be prepared by a student on the project of his specialization.

### List of Open Source Software/learning website:

- [http://eia.unu.edu/course/index.html%3Fpage\\_id=173.html](http://eia.unu.edu/course/index.html%3Fpage_id=173.html)
- <http://elearning.vtu.ac.in/>