

INSTITUTE	FACULTY OF TECHNOLOGY
PROGRAM	BACHELOR OF TECHNOLOGY (CIVIL ENGINEERING)
SEMESTER	6
COURSE TITLE	ENVIRONMENTAL IMPACT ASSESSMENT
COURSE CODE	01CI0615
COURSE CREDITS	3

Objective:

- 1 To expose basic understanding to plan the development process in a sustainable manner.
- 2 To understand EIA frameworks
- 3 To know EIA process
- 4 To apply knowledge for Project Management and Decision-Making

Course Outcomes: After completion of this course, student will be able to:

- 1 Value the importance of EIA as part of the planning process.
- 2 Apply the different methodologies to predict and assess the impacts of the project.
- 3 Characterize the environmental attributes.
- 4 Demonstrate an understanding of the concept of Sustainable Development.

Pre-requisite of course: Basic knowledge of Environmental Studies, Fundamentals of air and water pollution, Environmental Policies

Teaching and Examination Scheme

Theory Hours	Tutorial Hours	Practical Hours	ESE	IA	CSE	Viva	Term Work
3	0	0	50	30	20	25	25

Contents : Unit	Topics	Contact Hours
1	Environmental Impact Assessment Need of EIA, methodology, environmental impact assessment techniques-ad-hoc method, checklist method, overlay mapping method, network method, simulation and modeling technique, matrix method, system diagram technique., Assessment of impacts –air, water, soil, noise, biological, social, cultural, economic, environmental factors., Public participation in decision making, EIA and sustainable development., Benefits & Drawbacks in EIA process	10

Contents : Unit	Topics	Contact Hours
2	Legislation and Procedures National Environmental Policy Act (NEPA) of 1969, USA. EIA notification 1994, 2006 for India and implementation, EIA Guidelines. EIA legislative requirements and administrative procedures in India / States of India, Accreditation of EIA consultants by Quality Control of India – requirements and guidelines	8
3	Environmental Impacts and Mitigation Anticipated environmental impacts and mitigation measures., EIA and sustainable development, environmental monitoring program, EIA notification September 2006 and amendments: categorization of projects, preparation of environment management plan (EMP), environmental clearance procedure	8
4	Environmental Economics Economy and the environment, economics of environmental issues, externalities, risk –benefit analysis, Global issues, economics of natural resource exploitation, integrating economic and ecological principles, Pollution economics, carbon tax, carbon trading, clean development mechanism, and ecomark concept	8
5	Case Studies of Environmental Impact Assessment and Risk Analysis Environmental Appraisal procedures in India, Impact identification methods, Environmental impacts of mining industry; nuclear power plant; textile industry; petroleum refining; fertilizer industry, Case study –EIA of Hydroelectric dam and river valley projects; thermal power plants., National river conservation plan –Namami Gange and Yamuna Action Plan. Risk assessment in EIA	8
Total Hours		42

Textbook :

- 1 Environmental Impact Analysis Handbook, Rau Whooten, McGraw Hill publications, .

References:

- 1 Environmental Impact Assessment, Environmental Impact Assessment, Larry Canter, McGraw Hill publications, .
- 2 Environmental Economics: An Indian Perspective, Environmental Economics: An Indian Perspective, Rabindra N, Bhattacharya, Oxford University Press, 2001

Suggested Theory Distribution:

The suggested theory distribution as per Bloom’s taxonomy is as follows. This distribution serves as guidelines for teachers and students to achieve effective teaching-learning process

Distribution of Theory for course delivery

Remember / Knowledge	Understand	Apply	Analyze	Evaluate	Higher order Thinking / Creative
10.00	25.00	30.00	25.00	10.00	0.00

Instructional Method:

- 1 The course delivery method will depend upon the requirement of content and the needs of students. The teacher, in addition to conventional teaching method by white board, may also use any of tools such as collaborative learning, demonstration, role play, Quiz, brainstorming, MOOCs, Active Learning Assignments etc.
- 2 The internal evaluation will be done based on continuous evaluation of students in the classroom.
- 3 Students will use supplementary resources such as online videos, Swayam, NPTEL videos, and E-Courses

Supplementary Resources:

- 1 https://onlinecourses.swayam2.ac.in/nou22_bt06/preview