	National Institute of Technology Meghalaya An Institute of National Importance	**CURRICULUM**

Programme	**Master of Technology**	Year of Regulation	**2025-2026**
Department	**Civil Engineering**	Semester	**II**

Course Code	Course Name	Pre-requisite	Credit Structure				Marks Distribution			
			L	T	P	C	INT	MID	END	Total
CE 546	**Environmental Impact and Risk Assessment**	**NIL**	**3**	**0**	**0**	**3**	**50**	**50**	**100**	**200**

Course Objectives	• Understand EIA principles, methods, and regulations. • Identify and assess environmental risks using standard tools. • Apply impact prediction, mitigation, and monitoring techniques. • Prepare and evaluate Environmental Impact Statements (EIS).	**Course Outcomes**	CO1 Able to learn basic concepts of EIA methods CO2 Able to brief the various methodologies involved in environmental impact assessment CO3 Able to identify the prediction tools for the assessment of different environmental impacts CO4 Able to describe the concepts of the environmental management system

SYLLABUS

No.	Content	Hours	COs
I	**Environmental impact assessment:** Introduction, definitions and concepts, rationale and historical development of EIA, EIA for civil engineers.	**10**	CO1
II	**Components of EIA:** Initial environmental examination, environmental impact statement, environmental appraisal, environmental impact factors and areas of consideration. Pertinent institutional information, unique pollution problems, existing visual quality, public participation techniques	**8**	CO1
III	**Methodologies:** Measurement of environmental impact, organization, scope and methodologies of EIA pertinent environmental factors, public involvement techniques, comprehensive environmental impact study, various project types, archaeological properties, leachate testing, evaluation species, proposing agency, EIA Models.	**9**	CO2
IV	**Environmental management and audit:** Principles, problems and strategies; Review of political, ecological and remedial actions. Future strategies; multidisciplinary environmental strategies, the human, planning, decision-making and management dimensions**.**	**8**	CO3
V	**EMS and Standardization:** Introduction to ISO and ISO 14000. EMAS regulations, Wider application of system based approach. Local infrastructure development and environmental management: A system approach, Regional environmental management system, Conversion plan development and implementation strategies, Environmental management systems in local government.	**7**	CO4
	Total Hours	**42**	

Essential Readings

1. Canter, L.W. – ***Environmental Impact Assessment***
2. Glasson, J., Therivel, R., & Chadwick, A. – ***Introduction to Environmental Impact Assessment***
3. Masters, G.M. & Ela, W.P. – ***Introduction to Environmental Engineering and Science***
4. UNEP/EPA EIA Guidelines & Manuals **(standard global reference)**

Supplementary Readings

1. Morris, P. & Therivel, R. – ***Methods of Environmental Impact Assessment***
2. Yoe, C. – ***Principles of Risk Analysis: Decision Making Under Uncertainty***
3. Kolluru, R.V. – ***Risk Assessment and Management Handbook***
4. Fischer, T.B. – ***The Theory and Practice of Strategic Environmental Assessment***