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| Image result for nit meghalaya logo | | | | **National Institute of Technology Meghalaya**  An Institute of National Importance | | | | | | | | | | | | | | | | | | | | | | | **CURRICULUM** | | | | | | |
| Programme | | | | **Bachelor of Technology in Civil Engineering** | | | | | | | | | | | | | Year of Regulation | | | | | | | | | | **2019-20** | | | | | | |
| Department | | | | **Civil Engineering** | | | | | | | | | | | | | Semester | | | | | | | | | | **IV** | | | | | | |
| Course  Code | | Course Name | | | | | | | | **Pre requisite** | | | | Credit Structure | | | | | | | | Marks Distribution | | | | | | | | | | | |
| L | | T | | | P | C | | INT | | | MID | | | END | | | | Total | |
| **CE 220** | | **Environmental Impact Assessment** | | | | | | | | **Nil** | | | | **3** | | **0** | | | **0** | **3** | | **50** | | | **50** | | | **100** | | | | **200** | |
| Course  Objectives | | 1. To introduce basic Identify the need to assess and evaluate the impact on environment. | | | | | | | | | | Course Outcomes | | | | CO1 | | | Able to explain the concepts about the Environmental Impact Assessment (EIA). | | | | | | | | | | | | | | |
| 1. To introduce major principles of environmental impact assessment | | | | | | | | | | CO2 | | | Able to evaluate the subjects which must be considered in EIA projects. | | | | | | | | | | | | | | |
| 1. To understand the different steps within environmental impact assessment | | | | | | | | | | CO3 | | | Able to overview of assessing risks posing threats to the environment | | | | | | | | | | | | | | |
|  | | | | | | | | | | CO4 | | | Able to access different case studies/examples of EIA in practice | | | | | | | | | | | | | | |
|  | | | | | | | | | | CO5 | | | Able to prepare EIA reports. | | | | | | | | | | | | | | |
| No. | COs | | Mapping with Program Outcomes (POs) | | | | | | | | | | | | | | | | | | | | | | | Mapping with PSOs | | | | | | | |
| PO1 | | PO2 | PO3 | PO4 | PO5 | PO6 | | PO7 | | PO8 | | PO9 | | | PO10 | | | PO11 | | PO12 | | | PSO1 | | | PSO2 | | | | PSO3 |
| 1 | CO1 | | 3 | | 0 | 0 | 0 | 0 | 0 | | 0 | | 0 | | 0 | | | 0 | | | 0 | | 0 | | | 0 | | | 3 | | | | 0 |
| 2 | CO2 | | 3 | | 0 | 0 | 0 | 0 | 0 | | 0 | | 0 | | 0 | | | 0 | | | 0 | | 0 | | | 0 | | | 3 | | | | 0 |
| 3 | CO3 | | 3 | | 0 | 0 | 0 | 0 | 0 | | 0 | | 0 | | 0 | | | 0 | | | 0 | | 0 | | | 0 | | | 3 | | | | 0 |
| 4 | CO4 | | 3 | | 0 | 0 | 0 | 0 | 0 | | 0 | | 0 | | 0 | | | 0 | | | 0 | | 0 | | | 0 | | | 3 | | | | 0 |
| 5 | CO5 | | 3 | | 0 | 1 | 0 | 0 | 0 | | 0 | | 0 | | 0 | | | 0 | | | 0 | | 0 | | | 0 | | | 3 | | | | 0 |
| SYLLABUS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| No. | Content | | | | | | | | | | | | | | | | | | | | | | | Hours | | | | | | | COs | | |
| I | **Introduction**  Environment and its components, Concept of Ecological imbalances, carrying capacity and sustainable development | | | | | | | | | | | | | | | | | | | | | | | **06** | | | | | | | **CO1, CO2, CO3** | | |
| II | **Legal, Policy & Regulatory framework**  Legislative and environmental clearance procedures in India and other countries, Impact Assessment Methodologies? Matrices, overlays, network analysis | | | | | | | | | | | | | | | | | | | | | | | **06** | | | | | | | **CO3** | | |
| III | **EIA Procedure ‐ Scoping & Screening**  Evolution of environmental impact assessment (EIA), Current screening process in India. A step-by-step procedure for developing EIA, Elements of Environmental Analysis. | | | | | | | | | | | | | | | | | | | | | | | **06** | | | | | | | **CO3** | | |
| IV | **EIA Methodologies and Impact Identification**  Public consultation, Post monitoring, Data collection for Air Quality Impact analysis, Environmental health impact assessment, Environmental risk analysis, Economic valuation methods, Cost-benefit analysis | | | | | | | | | | | | | | | | | | | | | | | **06** | | | | | | | **CO4** | | |
| V | **Prediction & Assessment of Impacts on the Water and Soil Environment**  Water Quality Impact Analysis and energy impact analysis, Impact Analysis of Water resources projects, Prediction & Assessment of Impacts on the Soil Environment | | | | | | | | | | | | | | | | | | | | | | | **06** | | | | | | | **CO5** | | |
| VI | **EIA Case Studies, EIA Reporting & Review of EIA**  Case studies of Industrial and other EIA projects, Brief introduction about Environment legislation and Environmental Audit, Practical applications of EIA methodologies. | | | | | | | | | | | | | | | | | | | | | | | **06** | | | | | | | **CO5** | | |
| **Total Hours** | | | | | | | | | | | | | | | | | | | | | | | | **36** | | | | | |  | | | |
| **Essential Readings** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Environmental Impact Assessment by C.W. Canter | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Environmental Impact Assessment for Developing Countries: Asit K. Biswas | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. A Chadwick, *Introduction to Environmental Impact Assessment*, Taylor & Francis , 2007 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Larry W. Canter, *Environmental Impact Assessment*, McGraw Hill Inc. Singapore , 1996 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| **Supplementary Readings** | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. R.Therirvel, E. Wilson, S. Hompson, D. Heaney, D.Pritchard, *Strategic Environmental Assessment*, Earthscan, London , 1992 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 1. Paul, A Erickson, A Practical Guide to Environmental Impact Assessment, Academic Press , 1994 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |