IV Year B.Tech. CEE-II Sem

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(A80124) ENVIRONMENTAL IMPACT ASSESSMENT

UNIT I

Definition of EIA, Types of EIA, Various types of Environmental Impacts: Direct Impacts, Indirect Impacts, Cumulative Impacts, Induced Impacts, EIA Principles, Process, Benefits and Flaws, Environmental Impact Statement, Objectives of EIA, Environmental Sustainability, Identification of Potential Impacts, Affected Environment, Impact prediction, Impact Assessment, Impact Mitigation, Selecting the Proposed Action, Environmental Monitoring, Public consultation.

UNIT II www.universityupdates.in

Creation of EIA Data Base, Compilation, Environmental Inventory: Baseline Data Generation, Environmental Monitoring Networking Design (EMND), Monitoring Stations, Data Products and Sources, Impact Identification (II) Methodologies, Interaction-Matrix Methods, Use of the Leopold Matrix, Checklist Methodologies: Simple Checklists, Descriptive Checklists, Uses of Checklists, Network Methodologies.

UNIT III

Meteorological Data, Ambient Air Quality Monitoring, Air Quality Standards and Regulations, Impact Prediction, Impact Prediction Approach, Utilization of Dispersion Models, Impact Prediction Tools, Impact Assessment (IA): Significance and Assessment of the Impacts, Impact Mitigation Measures, Impacts on Water Environment - Sources of Pollution, Major Pollutants- Water Quality parameters, Surface Water Contaminants and their Impacts, Existing Groundwater Quality Environment - Standards - Prediction and Assessment of Impacts - Mitigation measures.

UNIT IV

UNIT V

Soil Pollution, Causes, Soil erosion, Desertification, Salinisation, Acidification, Land Filling of Waste, Impacts on Soils, Conceptual Approach: Identification, prediction and assessment of Soil Quantity-Quality Impacts, Description of Existing Resources, Identification and Incorporation of Mitigation Measures, Impacts on Noise Environment: Basics of Noise Pollution, Noise Exposure Forecast (NEF), Standards and Guidelines, Impact Prediction, Assessment of Impact Significance, Identification and Incorporation of Mitigation Measures.

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Status of Wetlands, Threats to Wetlands, Ecology Impact Assessment System: Importance of Biological Impact Assessment, Identification,

Prediction and Assessment and Significance of Biological Impacts, Mitigation Measures, Conservation of Flora & Fauna, Impacts on Socio Economic and Other Environment: Components, Considerations, Human Environment: Socio Economic Factors - Advantages of Impact Assessment - Assessment of Impact on Historical Structures - Mitigation Measures.

TEXT BOOKS:

- Environmental Impact Assessment, Canter, L.W., 1977, McGraw Hills, New York.
- 2. Environmental Science and Engineering, by J. Glynn and Gary W. Hein Ke Prentice Hall Publishers.

REFERENCES:

- 1. Technological guidance manuals of EIA. MoEF, Gol.
- 2. Environmental Impact Assessment, 2003, Y. Anjaneyulu, B.S. Publications.
- Environmental Impact Assessment Principles and applications, Erickson, P.A.
- 4. Environmental Impact Assessment: Theory and Practice, Dr.M.Anji Reddy, BS Publications.

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(A80146) CONSTRUCTION MANAGEMENT

UNIT-I

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Management process- Roles . management theories . Social responsibilities. planning and strategic management . strategy implementation. Decision making: tools and techniques — Organizational structure. Human resource management- motivation performance- leadership.

UNIT-IL

Classification of Construction projects, Construction stages, Resources-Functions of Construction Management and its Applications .Preliminary Planning- Collection of Data-Contract Planning – Scientific Methods of Management: Network Techniques in construction management - Bar chart, Gant chart, CPM, PERT- Cost & Time optimization.

UNIT-III-

Resource planning - planning for manpower, materials, costs, equipment. Labour, -Scheduling .Forms of scheduling - Resource allocation budget and budgetary control methods

UNIT-IT

Contract - types of contract, contract document, specification, important conditions of contract - tender and tender document - Deposits by the contractor - Arbitration negotiation - M.Book - Muster roll -stores.

UNIT-V

Management Information System - Labour Regulations: Social Security - welfare Legislation - Laws relating to Wages, Bonus and Industrial disputes, Labour Administration - Insurance and Safety Regulations - Workmen's Compensation Act -other labour Laws - Safety in construction: legal and financial aspects of accidents in construction. occupational and safety hazard assessment. Human factors in safety legal and financial aspects of accidents in construction occupational and safety hazard assessment

TEXT BOOKS

- Ghalot, P.S., Dhir, D.M., Construction Planning and Management, Wiley Eastern Limited, 1992.
- Chitkara, K.K., Construction Project Management, Tata McGraw Hill Publishing Co, Ltd., New Delhi, 998.
- 3. Punmia,B,C., Project Planning and Control with PERT and CPM Laxmi Publications, new delhi,1987.

REFERENCES:

Construction Management And Planning by: sengupta, b. /guha, h. tata mcgraw-hill publications

IV Year B.Tech. CEE-II Sem.

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(A80127) GROUND IMPROVEMENT TECHNIQUES (Elective - IV)

UNIT - I

Introduction to Ground Modification: Need and objectives, Identification of soil types, In situ and laboratory tests to characterise problematic soils; Mechanical, Hydraulic, Physico-chemical, Electrical, Thermal methods, and their applications.

UNIT - II

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Mechanical Modification - Deep Compaction Techniques- Blasting Vibrocompaction, Dynamic Tamping and Compaction piles.

UNIT - III

Hydraulic Modification - Objectives and techniques, traditional dewatering methods and their choice, Design of dewatering system. Electro-osmosis, Electro-kinetic dewatering. Filtration, Drainage and Seepage control with Geosynthetics, Preloading and vertical drains.

UNIT - IV

Physical and Chemical Modification - Modification by admixtures, Shotcreting and Guniting Technology, Modification at depth by grouting, Crack Grouting and compaction grouting, Jet grouting, Thermal Modification, Ground freezing.

UNIT - V

Modification by Inclusions and Confinement F Soll reinforcement, reinforcement with strip, and grid reinforced soil. In-situ ground reinforcement, ground anchors, rock bolting and soil nailing.

TEXT BOOKS

1. Hausmann, M. R. (1990) - Engineering Principles of Ground Modifications, McGraw Hill publications. www.universityupdates.in

REFERENCES:

- 1. Koerner, R. M (1994) Designing with Geosynthetics Prentice Hall, New Jersey.
- Jones C. J. F. P. (1985) Earth Reinforcement and soil structures -2 Butterworths, London,
- 3. Xianthakos, Abreimson and Bruce - Ground Control and Improvement
- 4 Mosley - Ground Improvement.

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(A82805) GROUND WATER POLLUTION (Elective-IV)

UNIT - I

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Ground water Contamination and Transport, Ground Water remediation, Sources and Types of Ground water contamination

UNIT - II

Under Ground storage Tanks, Land fills, surface impoundment's, Waste disposal Injection wells Septic systems, Agricultural wastes, land applications, Radioactive contamination, other sources of contaminants, Data-collection methods: Introduction, Geological data acquisition, and hydrologic data acquisition, acquisition of soil and ground water quality data.

UNIT - III

Contaminant transport Mechanisms: Introduction, advection processes, diffusion and dispersion processes, Mass- transport equations, one dimensional model, Governing flow and transport equation in two dimensions, semi-analytical methods, test for dispersitivity, Natural gradient field test for dispersion.

UNIT -IV

Sorption and other Chemical Reactions: Introduction, the concept of sorption, factor influencing sorption, sorption sotherm, Hydrophobic theory for organic contaminant's

UNIT - V

Sorption effects on fate and transport of pollutants, Estimation of sorption, Redox reaction, Hydrolysis, volatilization, Acid-Base reaction, Ion exchange, dissolution and precipitation of solids, complication reaction, models incorporating chemical reactions.

TEXT BOOKS:

www.universityupdates.in

- Ground water contamination (Transport and remediation) -1. Phlip.B.Bedient, Hanadi.S. Rifai & Charles.J.Newell Publishers: Prentice Hall Publishers.
- Ground Water Hydrology by Devid Keith Todd, John Wiley & Sons. 2

IV Year B.Tech. CEE-II Sem

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(A82806) WATER QUALITY MANAGEMENT (Elective-IV)

Unit -I

Introduction – Water Quantity purification – Water sampling Analysis – Monitoring in rivers. Pollution of Surface water: Sources – Effects on receiving waters- Control of NPS Pollution – Approaches.

Unit - II

Modeling Pollutants – Self purification of rivers DO models, Critical deficit and time required to reach the critical deficit. Lake Water Quality Management: Effect of pollutants – Stratification of lakes – Problem in Urban Lakes – Eutrophication – Restoration Techniques.

Unit III

Groundwater pollution and management- Sources of ground water pollution and their effects- municipal, industrial, agricultural and miscellaneous, ground water basin investigations. Groundwater modeling techniques.

Unit - IV

Introduction to Urban storm water quality management – Estimation of funoff – Pollutants in urban run off – storm water treatment facilities. Rain Water harvesting – Ground water re-change – Estimation –Roof top water collection systems – re-change techniques – soak points.

Unit V

Watershed Management- concept of watershed – objectives, Runoff estimation – rainwater harvesting Methods – check dams, artificial re-change, form ponds, percolation tanks.

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TEXT BOOKS:

- 1. Water Quality by Vladimar Novotny- John Wiley & Sons, Inc.
- Water Supply and Sanitary Engineering by G.S. Birde- Dhanpath Rai Publishing Company Plt, Ltd., New Delhi.
- 3. Ground Water Hydrology by David Keith Todd- John Wiley & Sons.
- Watershed Management by N.D. Mani Dominant Publishers and Distributors.

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(A80087) INDUSTRY ORIENTED MINI PROJECT

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(A80089) SEMINAR

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(A80088) PROJECT WORK

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(A80090) COMPREHENSIVE VIVA