**NBKR INSTITUTE OF SCIENCE & TECHNOLOGY :: VIDYANAGAR**

*(AUTONOMOUS)*

**CIVIL ENGINEERING**

SCHEME OF INSTRUCTION AND EVALUATION

(With effect from the batch admitted in the academic year 2013-2014)

**IV YEAR OF FOUR YEAR B.TECH. DEGREE COURSE – II SEMESTER**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| S.No. | Course  Code | Course Title | Contact  Hours/  Week | | | Credits | Evaluation | | | | | | | | | |
| Sessional  Test-I | | | Sessional  Test-II | | Total Sessional Marks (Max. 40) | Semester  End Examination | | Max.  Total Marks | |
| **THEORY** | L | P | T |  | Duration  in Hours | | Max.  Marks | Duration  in Hours | Max.  Marks | 0.8(Better of two sessional tests)  +  0.2(Other) | Duration  in Hours | Max.  Marks |  | |
| 1 | 13CE4201 | Design & Drawing Of Irrigation Structures | 1 | 3 | - | 4 | 2 | | 40 | 2 | 40 | 3 | 60 | 100 | |
| 2 | 13CE4202 | Environmental Studies | 4 | - | - | 4 | 2 | | 40 | 2 | 40 | 3 | 60 | 100 | |
| 3 | 13CE42EX | Elective - III | 4 | - | - | 4 | 2 | | 40 | 2 | 40 | 3 | 60 | 100 | |
|  | | **PRACTICALS** |  |  | | | | | | | |  |  | | | |
| 1 | 13CE42P1 | CAAD Laboratory | - | 3 | - | 2 | | - | - | - | - | Day to day evaluation and a test  (100 Marks) |  | - | | 100 |
| 2 | 13CE42PR | Project Work | - | 3 | - | 6 | | - | - | - | - | Continuous Assessment and seminar  (80 Marks) |  | 120 | | 200 |
|  |  | **TOTAL** | **09** | **09** |  | **20** | | **6** | **-** | **6** | **-** | **300** | **9** | **300** | | **600** |

**Elective – III:**

13CE42E1 Remote Sensing & GIS 13CE42E2 Finite Element Analysis

13CE42E3 Advanced Highway Engineering 13CE42E4 Ground Improvement Techniques

13CE42E5 Environmental Pollution and Control

**13CE4202 - ENVIRONMENTAL STUDIES**

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| --- | --- | --- | --- |
| **Course category:** | Program core | **Credits:** | 4 |
| **Course Type:** | Theory | **Lecture - Tutorial - Practical:** | 3 - 1 - 0 |
| **Prerequisite:** | None | **Sessional Evaluation :**  **Univ.Exam Evaluation:**  **Total Marks:** | 40  60  100 |

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| **Course Outcomes** | CO1 | Be able to understand the features of ecosystem and bio-diversity. |
| CO2 | Understand the management of major natural resources. |
| CO3 | Be able to understand the causes, effects and remedial measures of environmental pollution. |
| CO4 | Be able understand effectives of elements on environment and disaster management. |
| CO5 | Be able to familiar with environmental acts and must be able to apply the knowledge of environmental studies to certain case studies. |
| **Course Content** | **UNIT – I**  **INTRODUCTION:** Definition-Scope and Importance of Environmental studies- Environmental components.  **ECOSYSTEM:** Introduction- types, characteristics- features- structure and functions of Ecosystems  Bio-diversity and its conservation - Value of bio-diversity consumptive and productive use, social, ethical, aesthetic and option values. Threats to biodiversity- Conservation of bio diversity.  **UNIT – II**  **ENVIRONMENT AND NATURAL RESOURCES MANAGEMENT**:   1. Land Resources and its importance, Land degradation, Soil erosion and desertification, Effects of modern agriculture, fertilizer and pesticide problems. 2. Forest Resources: Use and over- exploitation - Mining and dams- their effects on forest and tribal people. 3. Water Resources: Use and over- utilization of surface and ground water, Floods and droughts, Water logging and salinity, Conflicts over water sharing, Rain water harvesting, clouds seeding and watershed management. 4. Energy resources Energy needs: Renewable and non-renewable energy needs use of alternate energy sources, Impact of energy use of environment   **UNIT – III**  **ENVIRONMENTAL POLLUTION**:  Causes- Effects and control measures of Air pollution- Water Pollution-Soil pollution-Marine Pollution-Noise pollution. Nature of Thermal pollution and nuclear hazards-Global warming, Acid rain-Ozone depletion.  Solid waste management: Composting – Vermiculture - Urban and industrial Wastes - recycling and reuse.  **UNIT – IV**  **ENVIRONMENTAL PROBLEMS IN INDIA**:  Drinking water - Sanitation and public health- Effects of urbanization - transportation, Industrialization on the quality of environment, Green revolution.  **ECONOMY AND ENVIRONMENT:** The economy and environment interaction - Sustainability, Environment Impact Assessment - Social Issues.  **DISASTER MANAGEMENT:** Floods- Earth quakes – Cyclones – Tsunamis.  **UNIT – V**  **ENVIRONMENTAL ACTS:**  Water (Prevention and control of pollution) Act- Air (Prevention and control of pollution) Act - Environment protection Act, Wildlife protection Act, Forest conservation Act, Coastal Zone Regulations  **Case Studies:** Silent Valley Project, Madhura Refinery and Taj Mahal, Tehri Dam, Kolleru Lake Aquaculture, Fluorosis in Andhra Pradesh  **Field Work**: Visit to Local Area having river/ Forest/grass land/hill/mountain to document and environmental assets.  Study of local environment- common plants, insects, birds. Study of simple ecosystems- pond, visits to Industries, water treatment plants, effluent treatment plants. | |
| **Text Books and reference Books:** | **TEXT BOOKS:**   1. Environmental science by Anubha Kaushik and C.P. Kaushik. 2. Environmental science and Engineering by P. Anandan and R.Kumaravelan .   REFERENCES BOOKS:   1. Introduction of Envioromental Science by Y. Anjaneyulu. 2. Environmental studies by Dr.B.S. Chauhan. 3. Environmental Science by M Chandra Sekhar. | |