**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**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| S.No. | CourseCode | Course Title | ContactHours/Week | Credits | Evaluation |
| SessionalTest-I | SessionalTest-II | Total Sessional Marks (Max. 40) | SemesterEnd Examination | Max.Total Marks |
| **THEORY** | L | P | T |  | Durationin Hours | Max.Marks | Durationin Hours | Max.Marks | 0.8(Better of two sessional tests)+0.2(Other) | Durationin 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:** | 4060100 |

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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 EcosystemsBio-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.
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