**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 – I 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 | 13CE4101 | Environmental Engineering – II | 4 | - | - | 4 | 2 | 40 | 2 | 40 | 3 | 60 | 100 |
| 2 | 13CE4102 | Irrigation & Hydraulic Struc.. | 4 | - | - | 4 | 2 | 40 | 2 | 40 | 3 | 60 | 100 |
| 3 | 13CE4103 | Quantity Surveying & Valuation  | 3 | - | 1 | 4 | 2 | 40 | 2 | 40 | 3 | 60 | 100 |
| 4 | 13CE4104 | Construction Planning & Management | 3 | - | 1 | 4 | 2 | 40 | 2 | 40 | 3 | 60 | 100 |
| 5 | 13SH4101 | Economics & Accountancy | 4 | - | - | 4 | 2 | 40 | 2 | 40 | 3 | 60 | 100 |
| 6 | 13CE41EX | Elective – II | 4 | - | - | 4 | 2 | 40 | 2 | 40 | 3 | 60 | 100 |
|  | **PRACTICALS** |  |  |  |  |
| 1 | 10CE41P1 | Concrete Technology Laboratory  | - | 3 | - | 2 | - | - | - | - | Day-to-day Evaluation and a test | 3 | 60 | 100 |
| 2 | 10CE41P2 | Environmental Engineering Laboratory | - | 3 | - | 2 | - | - | - | - | 3 | 60 | 100 |
|  |  | **TOTAL** | **22** | **06** | **02** | **28** | **12** | **320** | **12** | **320** | **24** | **480** | **800** |

**Elective – II:**

13CE41E1 Prestressed concrete structures

13CE41E2 Advanced structural design

13CE41E3 Solid waste management

13CE41E4 Traffic engineering

13CE41E5 Applied soil mechanics

13CE41E6 Bridge engineering

**13CE4104 -CONSTRUCTION PLANNING AND MANAGEMENT**

|  |  |  |  |
| --- | --- | --- | --- |
| **Course category:** | Program core | **Credits:** | 4 |
| **Course Type:** | Theory | **Lecture - Tutorial - Practical:** | 3 - 1 - 0 |
| **Prerequisite:** | Concrete Technology (3-2) | **Sessional Evaluation :****Univ.Exam Evaluation:****Total Marks:** | 4060100 |

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| --- | --- | --- |
| **Course Outcomes** | CO1 | .Be able to understandthe basics of construction management. |
| CO2 | Be able to schedule various components of project and apply CPM/ PERT techniques. |
| CO3 | Be able to demonstrate the working of various equipments in construction industries. |
| CO4 | Be able to perform quality control and prepare audit statement. |
| CO5 | Be able to demonstrate the importance of safety and risk in construction. Be able to understand the organizational structures and roles. |
| **Course Content** | **UNIT - I****INTRODUCTION:** Significance of construction management, Objectives and functions of construction management. Types of construction, Resources for construction industry. Stages of construction, Construction team. Engineering drawings **UNIT - II****CONSTRUCTION PLANNING:** Stage of planning, Scheduling, Preparation of material, Equipment, labour and finance schedules, Bar charts, Mile stone charts. Network Techniques In Construction Management: Critical Path Method (CPM), Programe Evaluation and Review Technique (PERT) – Network techniques breakdown structures. Classification of activities, Rules, for developing net works. Network development. Network analysis. Critical activities and critical path - Cost optimization **UNIT – III****CONSTRUCTION AND EQUIPMENT MANAGEMENT** Equipment requirement in construction industry, heavy earth moving equipment Bulldozer Scrapers, loaders Excavator, shovels and Cranes; Compaction equipment; Grading equipment. Aggregate production equipment; Asphalt mixing plant; Asphalt laying equipment; Hauling equipment, Concrete mixing equipment; Material handling devices; Pneumatic equipment; Bridge construction equipment; Drilling and blasting equipment; Pumping and dewatering equipment. **UNIT – IV****INSPECTION AND QUALITY CONTROL:** Need for inspection and quality control Principals of inspection. Enforcement of specifications Stages of inspection and quality control Ethical Audit: Introduction - Aspects of project realization - Ethical audit procedures - The decision makers - Variety of interests - Formulation of briefs - The audit statement- the audit reviews **UNIT – V****SAFETY AND RISK:** Introduction – Safety and risk - Concept and importance of safety - Types of risk - Safety and engineers - Safety measures in construction works - Design for safety - Risk benefit analysis – Accidents. **ORGANISING CONSTRUCTION:** Principals of organization. Communication Leadership and human relations. Types of organization. Organization for a construction firm. Temporary services. Job layout**.**  |
| **Text Books and reference Books:** | **TEXT BOOKS:** 1. Construction Planning and Management by P.S. Gahlot and B.M Dhir. 2. Construction Equipment and its Management by S.C. 3. Construction Management and Accounts by J.L. Sharma **REFERENCE BOOKS:** 1. Engineering Ethics by M. Govinda Rajan. 2. Construction Engineering and Management by S. Seetharaman. 3. Construction Management and Accounts by Haripal Singh. |