**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)

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

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
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| S.No. | Course  Code | Course Title | Contact Hours/  Week | | | | Cred-its | | 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 | 13SH2102 | Computational Techniques, Statistics and Complex Analysis | 3 | - | 1 | | 4 | | 2 | | 40 | | 2 | | 40 | | 3 | 60 | | 100 | |
| 2 | 13CE2101 | Engineering Mechanics | 3 | - | 1 | | 4 | | 2 | | 40 | | 2 | | 40 | | 3 | 60 | | 100 | |
| 3 | 13CE2102 | Fluid Mechanics - I | 3 | - | 1 | | 4 | | 2 | | 40 | | 2 | | 40 | | 3 | 60 | | 100 | |
| 4 | 13CE2103 | Building Technology | 4 | - | - | | 4 | | 2 | | 40 | | 2 | | 40 | | 3 | 60 | | 100 | |
| 5 | 13CE2104 | Surveying – 1 | 3 | - | 1 | | 4 | | 2 | | 40 | | 2 | | 40 | | 3 | 60 | | 100 | |
| 6 | 13CE2105 | Engineering Geology | 4 | - | - | | 4 | | 2 | | 40 | | 2 | | 40 | | 3 | 60 | | 100 | |
|  | | **PRaCTICALS** |  |  | | | | | | | | | | | | |  |  | | | | |
| 7 | 13CE21P1 | Surveying Laboratory – I | - | 3 | | - | | 2 | | - | | - | | - | | - | Day-to-day Evaluation and a test | 3 | | 60 | | 100 |
| 8 | 13CE21P2 | Engineering Geology Laboratory | - | 3 | | - | | 2 | | - | | - | | - | | - | 3 | | 60 | | 100 |
|  |  | **TOTAL** | **20** | **06** | | **04** | | **28** | | **-** | | **-** | | **-** | | **-** | **-** | | **-** | | **800** |

**13CE2103 - BUILDING TECHNOLOGY**

|  |  |  |  |
| --- | --- | --- | --- |
| **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 | Understand the characteristics of the natural building materials, bricks and tiles. |
| CO2 | Understand the characteristics of various types of cements of, special material and laboratory testing of common building materials. |
| CO3 | Understand the terminology in the general building construction and construction practices using stone and brick. |
| CO4 | Understand and recognize types of frames structures and various building compounds. |
| CO5 | Understand and apply various types of building finishes. |
| **Course Content** | **UNIT – I**  **BUILDING MATERIALS -I:** Stones: Uses – Natural bed – Qualities of good building stones – common building stones of India – Bricks: Composition of good brick earth – Harm full ingredients – Manufacture of bricks – Classification of bricks – Size and shape – Aggregate – Sand – Tiles – Wood.  **UNIT – II**  **BUILDING MATERIALS–II:** Ordinary and Special Cements – Plain & Reinforced Cement Concrete – Concrete and Mortar Admixtures – I.S.I. Standards and Laboratory Testing of Building Materials – Bricks, Stones, Aggregate, Sand and OPC – Modern renovation materials: Cement bound – polymer cement bound and pure polymer bound materials – their properties & uses.  **UNIT – III**  **BUILDING STRUCTURES–I:** Types of foundation – Definitions of terms used in Stone and brick masonry – stone masonry: Classification – Supervision – Dressing – Brick masonry: Types of bonds – Defects in brick masonry– Brick Laying – Damp proof course – plinth beam – types of flooring.  **UNIT – IV**  **BUILDING STRUCTURES–II:** Types of Framed Structures – lintels – arches – sunshades – Types of roofs and roof coverings – Staircases – Form works – doors – windows.  **UNIT – V**  **BUILDING FINISHES:** Plastering and Pointing – Color Washing – Distempers – Painting and Varnishing: Characteristics – Ingredients – Types – Painting and Varnishing on Different Surfaces – Water Supply and Sanitary arrangements – Electrification and Weather proof Courses. | |
| **Text Books and reference Books:** | **TEXT BOOKS:**  1. Building Construction by B.C. Punmia.  2. Building Construction by Sushil Kumar.  3. Materials of construction by RC Smith.  **REFERENCE BOOKS:**  1. A Text Book of Building Construction by S.K. Sharma & B.K.Kaul.  2. Building Materials by Gurucharan Singh.  3. Concrete Technology by M. S. Shetty. | |