**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)

**III YEAR OF FOUR YEAR B.TECH. DEGREE COURSE – I 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 | 13CE3101 | Structural Analysis - I | 3 | - | 1 | 4 | 2 | | 40 | 2 | 40 | | 3 | | 60 | 100 | |
| 2 | 13CE3102 | R.C.C. Structural Design – I | 3 | - | 1 | 4 | 2 | | 40 | 2 | 40 | | 3 | | 60 | 100 | |
| 3 | 13CE3103 | Steel Structural Design | 3 | - | 1 | 4 | 2 | | 40 | 2 | 40 | | 3 | | 60 | 100 | |
| 4 | 13CE3104 | Foundation Engineering | 3 | - | 1 | 4 | 2 | | 40 | 2 | 40 | | 3 | | 60 | 100 | |
| 5 | 13CE3105 | Transportation Engineering - II | 4 | - | - | 4 | 2 | | 40 | 2 | 40 | | 3 | | 60 | 100 | |
| 6 | 13CE3106 | Advanced Hydraulics | 4 | - | - | 4 | 2 | | 40 | 2 | 40 | | 3 | | 60 | 100 | |
|  | | **PRACTICALS** |  |  | | | | | | | |  | | |  | | | | |
| 1 | 13CE31P1 | Soil Mechanics Laboratory | - | 3 |  | 2 | | - | - | - | - | | Day-to-day Evaluation and a test | | 3 | | 60 | | 100 |
| 2 | 13CE31P2 | Material Testing Laboratory | - | 3 |  | 2 | | - | - | - | - | | 3 | | 60 | | 100 |
|  |  | **TOTAL** | **20** | **06** | **04** | **28** | |  |  |  |  | |  | |  | | **800** |

**13CE3105 - TRANSPORTATION ENGINEERING – II**

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| **Course category:** | Program core | **Credits:** | 4 |
| **Course Type:** | Theory | **Lecture - Tutorial - Practical:** | 3 - 1 - 0 |
| **Prerequisite:** | Transportation Engineering – I(2-2) | **Sessional Evaluation :**  **Univ.Exam Evaluation:**  **Total Marks:** | 40  60  100 |

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| **Course Outcomes** | CO1 | Understand the basics of traffic engineering. |
| CO2 | Understand the components of permanent way. |
| CO3 | Understand types of stations, yards, crossing and turnouts. |
| CO4 | Understand the elements of airport engineering. |
| CO5 | Understand the elements of harbour engineering. |
| **Course Content** | **Unit - I**  **TRAFFIC ENGINEERING:** Road user and vehicular characteristics, Traffic studies (uses, field methods and presentation of data only) – Volume, speed, origin & destination, parking; Traffic control devices – signs and signals, Highway capacity  **Unit - II**  **RAILWAY ENGINEERING I:** Comparison of railway and Highway transportation, classification of Indian railways, permanent way – components, gauges, coning of wheels, ballast types and functions.  **Unit - III**  **RAILWAY ENGINEERING II:** Classification and layout of different types of stations, station yards, types of crossings, Type of switches, Turnouts – factors affecting speed at turnouts.  **Unit - IV**  **AIRPORT ENGINEERING:** Airport planning – Master plan, Regional plan, data for site selection Air craft characteristics  **AIRPORT LAYOUT AND TERMINAL AREA:** Terminal area, Building area, parking area, Blast considerations, Typical airport layouts and their features.  **Unit - V**  **DOCKS AND HARBOUR ENGINEERING:** Tides–winds–waves–currents–classification of harbours–site selection classification of ports–Docks – types of docks–Breakwaters–types of Break waters–quays jetties–wharves–dolphins–fender aprons–transit sheds and ware houses–dredging. | |
| **Text Books and reference Books:** | **TEXT BOOKS**:   1. Traffic Engineering and Transport Planning by L.R. Kadiyali. 2. A text book of Railway Engineering by Saxena S.C. and Arora S.P. 3. Airport Planning and Design by Khanna S.K., Arora M.G. and Jain S.S.   4. Docks and Harbour Engineering by R. Srinivasan.  **REFERENCE BOOKS**:   1. Traffic Engineering Vol. I & II by Hobbs F.D. and Richardson P.R. 2. A text book of Railway Engineering by Rangwala. 3. Airport Engineering by Norman J, Ashford, Saleh A. Mumayiz and Paul H Wright. 4. A Course in Docks and Harbour Engineering by S.P.Bindra. 5. Railway Engineering by [Satish Chandra](http://www.google.co.in/search?tbo=p&tbm=bks&q=inauthor:%22Satish+Chandra%22&source=gbs_metadata_r&cad=4), [M. M. Agarwal](http://www.google.co.in/search?tbo=p&tbm=bks&q=inauthor:%22M.+M.+Agarwal%22&source=gbs_metadata_r&cad=4). | |