DEPARTMENT OF CIVIL ENGINEERING

FACULTY OF ENGINEERING, M. B. M. ENGINEERING COLLEGE
JAI NARAIN VYAS UNIVERSITY, JODHPUR 342011(Rajasthan)

No. JNVU/FE/Civil/2014/ Dated: 02-08-2014

PH.D ENTRANCE SYLLABUS

Plane Table Surveying, Theodolite Surveying, Theodolite Traversing, Tacheometric Surveying, Contours and Contouring, Element of Simple circular curves, Triangulation: Principle, Theory of errors and Survey adjustments, Photographic Surveying, Aerial Photogrammetry,

Foundation: Principle, Design of Foundation, Floors, Various types of floors, Fire Protection, Damp Proofing, Ventilation and air conditioning, Roof, Stair Case, Shoring, underpinning and scaffolding, Water supply and drainage, Acoustics and Sound insulation,

Elements of fluid mechanics, Pressure at a point, Pressure on planes, Lock gate, Kinematics of Flow, Equation of Motion, Flow through pipes, Flow measurement, Notches and Weirs, Laminar Flow, Turbulent Flow, Introduction to boundary layer theory, Flow through open channels, Uniform, steady flow in prismatic channels, Dynamic equation of gradually varied flow in prismatic channels, Rapidly varied flow, Hydraulic turbines, Centrifugal Pumps,

Hydrology, Precipitation, Hydrograph analysis, River Engineering, River training, Reservoir planning, Hydro-Power, Dams, Various types of dams, Geology of dam site, Gravity dams, Embankment dams, Earth dams, Canal irrigation, Lacey's theories, Canal Head Works, Canal regulators, falls, flumes and cross drainage structures, energy dissipation, Canal outlets, Spillways, gates and outlet works, General introduction, Importance of study of Ground water in hydrologic cycle,

Soil classification, Classification of composite soils, major soil classification systems and their use and limitations, diffused double layer theory, Field compaction, control and specifications, Effect of compaction on soil properties, Permeability of soils, Consolidation, Consolidation tests, Identification and behaviours of expansive soils, Flexible pavement design, Characteristics of Mohr circle, Theories of failure, Elastic theories of stress distribution in soils, stability of slopes, Theories of earth pressure-Rankine's , Coulomb's, Shallow Foundation, Pile Foundation, dynamics of soils: Theory of vibration, Seepage through dams, Casagrende's solution, Soil Stabilization and ground improvement

Filtration, Disinfection, Different types of pipes used in water supply practice, Sources of water supply, joints in pipes distribution system, Systems of drainage, Surface drainage, Under drainage, Layout of sewerage systems, Design of sewers, Ventilation of sewers, Disposal of sewage by dilution and land sedimentation with chemical precipitation. Septic tank,

Sanitary Biology, Microbiology, General history of water supply and sewerage systems in India development in different five year plan. Future scope, Environmental Chemistry, Advanced Water Treatment, Advanced Sewage Treatment and Disposal, Solid waste and management, Air Pollution, Water and Waste Water Pollution, Noise Pollution, automobile Pollution, Hazardous Waste Treatment and disposal, Radio active waste treatment, E-waste and related issues, Global Warming, Causes and control measures.