COURSE CODE	COURSE NAME	COURSE OUTCOMES
15A54301	Mathematics - III	CO-I Explain the concepts of matrices and its applications CO-II Solve algebraic & transcendental equations using appropriate numerical methods (L3). CO-III Analyze a problem using different interpolation formulae (L4). CO-IV Construct various types of curves using different numerical techniques (L5). CO-V Find numerical solutions of ordinary differential equations (L1).
15A01301	Electrical and Mechanical Technology	C01Analyze the Basics Of Electrical Circuits C02.Understand the Basic Principle And Operation Of DC Generators & Motors C03.Understand the Basic Principle And Operation Of Transformers, Induction Motors And Alternators C04.study the Basics of welding process C05.Understand the Operation and working of steam engines and steam turbines, refrigeration system.
15A01302	Building Materials and Construction	CO-I understand the quality of various construction materials. CO-II prepare plan of staircase block CO-III supervise the various construction activities at the time of actual execution CO-IV identify and select the materials for construction activities CO-V identify the paints and clay materials for construction activities
15A01303	Strength of Materials – I	**Co1:** Find the stresses and strains of axially loaded members and elastic constants C**o2**:Determine shear force and bending moment in determine beams subjected to transverse loading **CO3**:Determine bending and shearing stress variations in determine beam cross-sections **CO4:**Determine the slope and deflections in determinate beams using double integration ,maculay's method and moment area method C**O5**:Evaluate the direct and bending stresses in members subjected to direct compression and bending
15A01304	Surveying – I	C01carry out preliminary surveying in the field of civil engineering applications such as structural, highway engineering and geotechnical engineering C02plan a survey, taking accurate measurements, field booking, plotting and adjustment of traverse C03use various conventional instruments involved in surveying with respect to utility and precision C04plan a survey for applications such as road alignment and height of the building C05undertake measurement and plotting in civil engineering

15A01305	Fluid Mechanics	**CO-I**: Develop a basic understanding about the properties of fluid their behavior under static and dynamic condition and measure the fluid pressure in manometer **CO-II**: Explain the concept buoyancy and state of equilibrium and classify the different type of flow and solve the problem on continuity equation, stream function and velocity potential function **CO-III**: Apply the Bernoulli's eqation to solve the problem of fluid **CO-IV**: Demonstrate fluid measuring devices like venture meter, orifice meter, notches,orifice and mouthpiece **CO-V**: Explain the concept of dimensional analysis and develop basic concept related to laminar and turbulent flow

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COURSE CODE	COURSE NAME	COURSE OUTCOMES
15A54401	Probability and Statistics	CO-I Apply the concepts of probability in different distributions (L3). CO-IITest the hypothesis and its significance (L3). CO-IIIAnalyze different sampling tests (L4). CO-IV Analyze statistical quality control (L4). CO-VUse queuing theory to solve the related problems (L3).
15A52301	Managerial Economics & Financial Analysis	CO-I Explain the scope of managerial economics and types of elasticity of demand and measurements of elasticity of demand. CO-II Understand the production and cost concepts - normal cost, variable cost and total cost. CO-III Explain about markets and new economic environment. CO-IV Explain the importance of double entry book system in different types of business and the concept of financial accounting with solutions. CO-V Explain the importance of Capital and capital budgeting techniques for taking long term decisions in investments.
15A01401	Strength of Materials – II	Co-1 Find principal stress and shearing stress across an oblique plane CO-2 Analyze stresses across the section of a thin or thick cylindrical shells Co-3 Solve the problems in circular shafts and springs under the influence of torsion and bending Co-4 Determine the load carrying capacity in columns and struts Co-5Analyze the sections subjected to unsymmetrical bending
15A01402	Surveying – II	CO-I Able to determine the RL of objects. Co-2 Get knowledge on methods of tacheometric surveying.

		Co-3 Get knowledge on triangulation and setting out works. Co-4 Carrying out of various curves alignment. Co-5 Get knowledge on EDM, remote sensing elements and their applications, GIS and applications.
15A01403	Structural Analysis – I	CO-I Apply the knowledge of various energy theorems. CO-II Analyse the indeterminate structures. CO-III Understand the analyzation conceptes of fixed beams and continuous beam. CO-IV Derive the final end moments by slope deflection method. CO-V Derive the final end moments by moment distribution method.
15A01404	Hydraulics & Hydraulic Machinery	C01visualize fluid flow phenomena observed in Civil Engineering systems such as flow in a pipe, flow measurement through orifices, mouth pieces, notches and weirs C02calculate forces and work done by a jet on fixed or moving plate and curved plates C03select the type of turbine required with reference to available head of water and discharge c04determine the characteristics of centrifugal pump, the Reciprocating pump c05identify dimensions of L,M,N and calculate the physical quantities

IIIYEAR-I SEM

COURSE CODE	COURSE NAME	COURSE OUTCOMES
15A01501	Design and Drawing of RCC Structures	**CO-I**: Analyze the basic concepts of Reinforced Cement Concrete Design theories. **CO-II:** Apply the IS 456:2000 code provisions to RCC beam sections in Limit state Method. **CO-III:** Make use of IS 456:2000 code provisional Coefficients to the RCC slabs in Limit state Method. **CO-IV:** Take part in the Design of RCC Columns in Limit state Method by using IS 456:2000 Code provisions. **CO-V:** Inference the Design of RCC Footings & Stair cases in Limit state Method by using IS 456:2000 code provisions.
15A01502	Estimation, Costing and Valuation	CO-I Explain the building construction elements and their mode of estimation CO-II Solve the quantities of different construction items in a building CO-III Determine the quantities of Road and Cannel earthworks

		CO-IV Analyze the contract & tendering systems CO-V Estimate the rate of individual items and as whole
15A01503	Geotechnical Engineering-1	CO-I Find index properties of soils CO-II Interpret the concepts of permeability and seepage through soils CO-III Identify the stress distribution in soils and mechanism of soil compaction CO-IV Analyze the consolidation and time rate of settlement CO-V Estimate the shear strength of soils by laboratory experiments
15A01504	Engineering Geology	CO-I Explain the importance of geology and compare the geological features with engineering importance CO-II Apply knowledge regarding the underline rock formation to complete idea about rocks CO-III Explain the importance of ground water regarding the civil engineering poin of view CO-IV Analyze the importance of geo physical studies and principles CO-V Apply knowledge related with the dams ,tunnes,bridges, reservoirs and roads/ railways with the help of these for making of engineering projects
15A01505	Structural Analysis	CO-I Apply the knowledge of differet tyypes arches CO-II Dirive the final end movements by using slope deflection CO-III Dirive the final end movements by using movement distribution method CO-IV Dirive the final end movements by using rotatrion contrtibution method CO-V Understand the concepts of plastic theory
15A01507	Water Harvesting and Conservation	CO-I Define the concepts of hydro-geological cycle and classification of groundwater. (L1) CO-IIDesign the rainwater harvesting structures.(L6) CO-IIIExplain the non-portable water treatment process and reuse.(L2) CO-IVClassify the agriculture integrated farming methods and principles of watershed management.(L2) CO-VDesign of soil and water harvesting structures. (L6)

IIIYEAR-II SEM

COURSE CODE	COURSE NAME	COURSE OUTCOMES
15A01601	Concrete Technology	CO-I Classify & recommend different constituents of concrete

		CO-II Inspect strength & quality of plastic & harder concrete CO-III Apply the basics of concrete properties to develop new generation concrete CO-IV Evaluate the factors influencing the elasticity creep & shrinkage CO-V Design the mix proportions of concrete based on standard codes
15A01602	Design and Drawing of Steel Structures	**CO-I:** Make use of IS 800:2007 code provisions in the designing of Steel Tension Members in Limit State Method. **CO-II:** Apply the IS 800:2007 code provisions to the design of Steel Compression Members in Limit state Method. **CO-III:** Make use of IS 800:2007 code provisions to the design of Steel Beams & Purlins in Limit state Method. **CO-IV:** Take part in the Designing of Connections between structural steel elements by using IS 800:2007 Code provisions. **CO-V:** Inference the Design of Plate Girder & Gantry Girder in Limit state Method by using IS 800:2007 code provisions
15A01603	Geotechnical Engineering -2	Co-1 Knowledge on soil exploration methods. Co-2 To analyze and design of slopes. Co-3 To analyze the earth retaining structures. Co-4 To design shallow foundations. Co-5 To design deep foundation
15A01604	Transportation Engineering - I	**CO-I**: Explain the surveys involved in planning and highway alignment **CO-II**: Identify the cross section element, sight distance, horizontal and vertical alignment **CO-III**: Analyze traffic studies, traffic regulations and control **CO-IV**: Evaluate the design of intersection **CO-V**: Design flexible and rigid pavements as per IRC
15A01605	Water Resources Engineering – I	1. Remembering The Basic Concept Of Hydrologic Cycle And Its Applications. 2. Understand the basic types of irrigation, irrigation standards and crop water

		assessment. 3. Evaluate Various Quality For Irrigation Water For Duty , Delta & Duty At Various Places. 4.APPLY study the different aspects of design of hydraulic structures. 5. Analyze to understand various hydraulic structures such as diversion head works and cross regulators, canal falls and structures involved in cross drainage works.
15A01607	Disaster Management & Mitigation	CO-I Explain types of dissters and their effects on envfironmental CO-II Classify the causes of dissters CO-III Classification of endogenous hazards CO-IV Classification of exogenous hazards CO-V Apply disaster management through engineering applications
15A01606	REMOTE SENSING & GIS	C01 Identifying the photogrammetric, aerial photogrammetric, scale and height , measurement C02 Understand the concept of remote sensing & it's Principles. C03 Analysis the RS and GIS data and interpreting the data for modeling applications C04 Simplify the Data storage, integrated analysis of spatial & attribute data C05 Model are required to now Land use/land cover, surface mapping, runoff, flood and drought assessment

IVYEAR-I SEM

COURSE CODE	COURSE NAME	COURSE OUTCOMES
15A01701	Finite Element Methods	C01. Define basic steps involved in FEM and demonstrate the differential equilibrium equations and their relationship. C02. Develop finite element formulation of

		one and two dimensional problems and solve them. C03. Demonstrate the stiffness matrices, nodal load matrices for 3-noded and 4-noded elements. C04. Determine the stiffness matrix for iso-parametric elements. C05. Develop the solution techniques for static loads.
15A01702	Transportation Engineering - II	C01.Understand the geometric design elements of Railway Track. C02.Acquire the knowledge on various design methods of railway track. C03.Understandthevarious components of airport and their importance in the planning of airport. C04.Understand the aircraft characteristics and their influence on various design elements. C05.Acquire the knowledge on various types of Docks, Ports and Harbours
15A01703	Environmental Engineering	CO-I Identify the source of water and water demand, Apply the water treatment concept and methods. CO2.Apply water distribution processes and operation and maintenance of water supply . CO3 Prepare basic process designs of water and wastewater treatment plants collect, reduce, analyze, and evaluate basic water quality data. CO4.Determine the sewage characteristics and design various sewage treatment plants. CO5. Apply environmental treatment technologies and design processes
15A01704	Water Resources Engineering – II	CO1.Define various canal systems C02Construct the head and cross regulator structures C03.Analyze various types of reservoir and their design aspects C04.Classify of cross drainage work.s and its design C05.Desgin different types of dams
15A01705	**CBCC-II** 1. Design and Drawing of Irrigation Structures	CO-I:Design and detail various headworks CO-II Design and detail various cross drainage structures. C0IIIVarious forces used in design of a hydraulic structure. C0IV Able to study the plans of minor irrigation structures. COV Summarize and estimate the

		quantities required for a particular structure.
15A01708	**CBCC-III** 1. Bridge Engineering	Co-1 Choose the different type of loading in bridge design of box culvert Co-2 Design deck slab bridge with class AA loading Co-3 Design beams &slab bridge subjected to class AA tracked vehicle Co-4 Design plate girder bridge and composite bridge subjected to class AA tracked vehicle Co-5 Classiest the different types of abutment

IVYEAR-II SEM

COURSE CODE	COURSE NAME	COURSE OUTCOMES
15A01801	**MOOCS – II*** 1. Urban Transportation Planning	CO1.Remembering the concept of Travel Demand and the factors affecting. CO2. Understand the different stages of Urban Transportation Planning and the mathematical models associated with each stage. CO3.plan the various levels of trip generation and trip distribution in different models. CO4. Analyze the diversion curve for mode split and traffic assignment. 5.CO5 . Assess the economic impact of new Transportation plans
15A01803	**MOOCS – III*** 1. Prestressed Concrete	CO1.Understand the concept of prestressing , Recognize the general principles,methods & devices of prestressing. CO2.Determine the losses of pre-stress for prestressed concrete structures. CO3 .Apply the provisions of IS-1343(2000) code to the design of pre-stressed concrete structures for flexure. CO4.Design the shear reinforcements for pre-stressed concrete beams & understand the concept of composite section . C05 Determine the stresses at end block and deflection of pre-stressed concrete members