

Year / SEM: 2nd year / 3rd	
Subject code: 15CV32	
Subject Name: STRENGTH OF MATERIALS	
C302.1	To evaluate the strength of various structural elements internal forces such as compression, tension, shear, bending and torsion.
C302.2	To suggest suitable material from among the available in the field of construction and manufacturing.
C302.3	To evaluate the behavior and strength of structural elements under the action of compound stresses and thus understand failure concepts.
C302.4	To understand the basic concept of analysis and design of members subjected to torsion.
C302.5	To understand the basic concept of analysis and design of structural elements such as columns and struts.

Year / SEM: 2nd year / 3rd	
Subject code: 15CV33	
Subject Name: FLUIDS MECHANICS	
C303.1	Possess a sound knowledge of fundamental properties of fluids and fluid continuum
C303.2	Compute and solve problems on hydrostatics, including practical applications
C303.3	Apply principles of mathematics to represent kinematic concepts related to fluid flow
C303.4	Apply fundamental laws of fluid mechanics and the Bernoulli's principle for practical applications
C303.5	Compute the discharge through pipes and over notches and weirs

Year / SEM: 2nd year / 3rd	
Subject code: 15CV34	
Subject Name: BASIC SURVEYING	
C304.1	Posses a sound knowledge of fundamental principles Geodetics
C304.2	Measurement of vertical and horizontal plane, linear and angular dimensions to arrive at solutions to basic surveying problems
C304.3	Capture geodetic data to process and perform analysis for survey problems
C304.4	Analyse the obtained spatial data and compute areas and volumes.
C304.5	Represent 3D data on plane figures as contours

Year / SEM: 2nd year / 3rd	
Subject code: 15CV35	
Subject Name: ENGINEERING GEOLOGY	
C305.1	Students will able to apply the knowledge of geology and its role in Civil Engineering
C305.2	Students will effectively utilize earth's materials such as mineral, rocks and water in civil engineering practices.
C305.3	Analyze the natural disasters and their mitigation
C305.4	Assess various structural features and geological tools in ground water exploration,
C305.5	Apply and asses use of building materials in construction and asses their properties

Year / SEM: 2nd year / 3rd	
Subject code: 15CV36	
Subject Name: Building Materials and Construction	
C306.1	Select suitable materials for buildings
C306.2	adopt suitable construction techniques
C306.3	Adopt suitable repair and maintenance work to enhance durability of buildings.
C306.4	Decide suitable type of foundation based on soil parameters
C306.5	Exhibit the knowledge of building finishes and form work requirements

Year / SEM: 2nd year / 4th	
Subject code: 15CV42	
Subject Name: Analysis of Determinate Structures	
C402.1	Evaluate the forces in determinate trusses by method of joints and sections.
C402.2	Evaluate the deflection of cantilever, simply supported and overhanging beams by different methods
C402.3	Understand the energy principles and energy theorems and its applications to determine the deflections of trusses and bent frames.
C402.4	Determine the stress resultants in arches and cables.
C402.5	Understand the concept of influence lines and construct the ILD diagram for the moving loads.

Year / SEM: 2nd year / 4th	
Subject code: 15CV43	
Subject Name: Applied Hydraulics	
C403.1	Apply dimensional analysis to develop mathematical modeling
C403.2	compute the parametric values in prototype by analyzing the corresponding model parameters
C403.3	Design the open channels of various cross sections including economical channel sections
C403.4	Apply Energy concepts to flow in open channel sections, Calculate Energy dissipation, Compute water surface profiles at different conditions
C403.5	Design turbines for the given data, and to know their operation characteristics under different operating conditions

Year / SEM: 2nd year / 4th	
Subject code: 15CV44	
Subject Name: Concrete Technology	
C404.1	Relate material characteristics and their influence on microstructure of concrete.
C404.2	Distinguish concrete behavior based on its fresh and hardened properties.
C404.3	Illustrate proportioning of different types of concrete mixes for required fresh and hardened properties using professional codes.
C404.4	Adopt suitable concreting methods to place the concrete based on requirement.
C404.5	Select a suitable type of concrete based on specific application

Year / SEM: 2nd year / 4th	
Subject code: 15CV45	
Subject Name: Basic Geotechnical Engineering	
C405.1	Will acquire an understanding of the procedures to determine index properties of any type of soil
C405.2	Will be able to determine compaction characteristics of soil and apply that knowledge to assess field compaction procedures
C405.3	able to determine permeability property of soils and acquires conceptual knowledge about stresses due to seepage
C405.4	able to estimate shear strength parameters of different types of soils using the data of different shear tests
C405.5	Ability to solve practical problems related to estimation of consolidation settlement of soil deposits also time required for the same

Year / SEM: 2nd year / 4th	
Subject code: 15CV46	
Subject Name: Advanced Surveying	
C406.1	Apply the knowledge of geometric principles to arrive at surveying problems
C406.2	Use modern instruments to obtain geo-spatial data and analyse the same to appropriate engineering problems.
C406.3	Capture geodetic data to process and perform analysis for survey problems with the use of electronic instruments
C406.4	Design and implement the different types of curves for deviating type of alignments.

Year / SEM: 3rd year / 5th	
Subject code: 15CV51	
Subject Name: Design of RC Structural Elements	
C501.1	understand the design philosophy and principles
C501.2	solve engineering problems of RC elements subjected to flexure, shear and torsion
C501.3	demonstrate the procedural knowledge in designs of RC structural elements such as slabs, columns and footings
C501.4	owns professional and ethical responsibility
C501.5	analyze the column and footing

Year / SEM: 3rd year / 5th	
Subject code: 15CV52	
Subject Name: Analysis of Indeterminate Structures	
C502.1	Determine the moment in indeterminate beams and frames having variable moment of inertia and subsidence using slope deflection method
C502.2	Determine the moment in indeterminate beams and frames of no sway and sway using moment distribution method.
C502.3	Construct the bending moment diagram for beams and frames by Kani's method
C502.4	Construct the bending moment diagram for beams and frames using flexibility method
C502.5	Analyze the beams and indeterminate frames by system stiffness method.

Year / SEM: 3rd year / 5th	
Subject code: 15CV53	
Subject Name: Applied Geotechnical Engineering	
C503.1	Ability to plan and execute geotechnical site investigation program for different civil engineering projects
C503.2	Understanding of stress distribution and resulting settlement beneath the loaded footings on sand and clayey soils
C503.3	Ability to estimate factor of safety against failure of slopes and to compute lateral pressure
C503.4	Ability to determine bearing capacity of soil and achieve proficiency in proportioning shallow isolated Footing
C503.5	Capable of estimating load carrying capacity of single and group of piles

Year / SEM: 3rd year / 5th	
Subject code: 15CV54	
Subject Name: Computer Aided Building Planning and Drawing	
C504.1	Gain a broad understanding of planning and designing of buildings
C504.2	Prepare, read and interpret the drawings in a professional set up.
C504.3	Know the procedures of submission of drawings and Develop working and submission drawings for building
C504.4	Plan and design a residential or public building as per the given requirements
C504.5	

Year / SEM: 3rd year / 5th	
Subject code: 15CV552	
Subject Name: Railways, Harbour, Tunneling and Airports	
C505.1	Acquires capability of choosing alignment and also design geometric aspects of railway system, runway, taxiway.
C505.2	Suggest and estimate the material quantity required for laying a railway track
C505.3	will be able to determine the hauling capacity of a locomotive
C505.4	Develop layout plan of airport, harbor, dock and will be able relate the gained knowledge to identify required type of visual
C505.5	Apply the knowledge gained to conduct surveying, understand the tunneling activities.

Year / SEM: 3rd year / 5th	
Subject code: 15CV561	
Subject Name: Traffic Engineering	
C506.1	Understand the human factors and vehicular factors in traffic engineering design.
C506.2	Conduct different types of traffic surveys and analysis of collected data using statistical concepts.
C506.3	Use an appropriate traffic flow theory and to comprehend the capacity & signalized intersection analysis.
C506.4	Understand the basic knowledge of Intelligent Transportation System.
C506.5	

Year / SEM: 3rd year / 6th	
Subject code: 15CV61	
Subject Name: Construction Management and Entrepreneurship	
C601.1	Understand the construction management process
C601.2	Understand and solve variety of issues that are encountered by every professional in discharging professional duties.
C601.3	Fulfill the professional obligations effectively with global outlook

Year / SEM: 3rd year / 6th	
Subject code: 15CV62	
Subject Name: Design of Steel Structural Elements	
C602.1	Possess a knowledge of Steel Structures Advantages and Disadvantages of Steel structures.
C602.2	Understand the Concept of Bolted and Welded connections.
C602.3	Understand the Concept of Design of compression members, built-up columns and columns splices.
C602.4	Understand the Concept of Design of tension members, simple slab base and gusseted base.
C602.5	Understand the Concept of Design of laterally supported and un-supported steel beams.

Year / SEM: 3rd year / 6th	
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Subject code: 15CV63	
Subject Name: Highway Engineering	
C603.1	Acquire the capability of proposing a new alignment or re-alignment of existing roads,
C603.2	conduct necessary field investigation for generation of required data.
C603.3	Evaluate the engineering properties of the materials and suggest the suitability of the same for pavement construction.
C603.4	Design road geometrics, structural components of pavement and drainage.
C603.5	Evaluate the highway economics by few select methods and also will have a basic knowledge of various highway financing concepts.

Year / SEM: 3rd year / 6th	
Subject code: 15CV64	
Subject Name: Water Supply and Treatment Engineering	
C604.1	Estimate average and peak water demand for a community.
C604.2	Evaluate available sources of water, quantitatively and qualitatively and make appropriate choice for a community.
C604.3	Evaluate water quality and environmental significance of various parameters and plan suitable treatment system.
C604.4	Design a comprehensive water treatment and distribution system to purify and distribute water to the required quality standards.

Year / SEM: 3rd year / 6th	
Subject code: 15CV651	
Subject Name: Solid Waste Management	
C605.1	Analyse existing solid waste management system and to identify their drawbacks.
C605.2	Evaluate different elements of solid waste management system.
C605.3	Suggest suitable scientific methods for solid waste management elements.
C605.4	Design suitable processing system and evaluate disposal sites.

Year / SEM: 3rd year / 6th	
Subject code: 15CV661	
Subject Name: Water Resources Management	
C606.1	Assess the potential of groundwater and surface water resources
C606.2	Address the issues related to planning and management of water resources.
C606.3	Know how to implement IWRM in different regions.
C606.4	Understand the legal issues of water policy.
C606.5	Select the method for water harvesting based on the area.

Year / SEM: 4th year / 7th	
Subject code: 15CV71	
Subject Name: Municipal and Industrial Waste Water Engineering	
C701.1	Acquires capability to design sewer and Sewerage treatment plant.
C701.2	Evaluate degree of treatment and type of treatment for disposal, reuse and recycle.
C701.3	Identify waste streams and design the industrial waste water treatment plant.
C701.4	Manage sewage and industrial effluent issues.

Year / SEM: 4th year / 7th	
Subject code: 15CV72	
Subject Name: Design of RCC and Steel Structures	
C702.1	Students will acquire the basic knowledge in design of RCC
C702.2	Students will acquire the basic knowledge in design of steel
C702.3	Students will have the ability to follow design procedures as per codal provisions
C702.4	skill to arrive at structurally safe RC and Steel members.
C702.5	

Year / SEM: 4th year / 7th	
Subject code: 15CV73	
Subject Name: Hydrology and Irrigation Engineering	
C703.1	Understand the importance of hydrology and its components
C703.2	Measure precipitation and analyze the data and analyze the losses in precipitation.
C703.3	Estimate runoff and develop unit hydrographs.
C703.4	Find the quantity of irrigation water and frequency of irrigation for various crops
C703.5	Find the canal capacity, design the canal and compute the reservoir capacity.

Year / SEM: 4th year / 7th	
Subject code: 15CV742	
Subject Name: Ground Water & Hydraulics	
C704.1	find the characteristics of aquifers.
C704.2	estimate the quantity of ground water by various methods.
C704.3	locate the zones of ground water resources.
C704.4	select particular type of well and augment the ground water storage.

Year / SEM: 4th year / 7th	
Subject code: 15CV753	
Subject Name: Rehabilitation and Retrofitting of Structures	
C705.1	Understand the cause of deterioration of concrete structures.
C704.2	Able to assess the damage for different type of structures
C704.3	Summarize the principles of repair and rehabilitation of structures
C704.4	Recognize ideal material for different repair and retrofitting technique

Year / SEM: 4th year / 8th	
Subject code: 15CV81	
Subject Name: Quantity Surveying and Contracts Management	
C801.1	Explain the importance of preliminary estimate for administrative approval & technical sanction for a civil engineering project

C801.2	Analyze, & assess the quantity of materials required for civil engineering works as per specifications
C801.3	Evaluate & estimate the cost of expenditure and prepare a detailed rate analysis report
C801.4	Construct detailed report on estimation and valuation process
C801.5	Utilize contracts and tenders in construction practices

Year / SEM: 4th year / 8th	
Subject code: 15CV82	
Subject Name: Design of Pre Stressed Concrete Elements	
C802.1	Understand the requirement of PSC members for present scenario
C802.2	Analyse the stresses encountered in PSC element during transfer and at working
C802.3	Understand the effectiveness of the design of PSC after studying losses
C802.4	Capable of analyzing the PSC element and finding its efficiency.
C802.5	Design PSC beam for different requirements

Year / SEM: 4th year / 8th	
Subject code: 15CV833	
Subject Name: Pavement Design	
C803.1	Systematically generate and compile required data's for design of pavement
C803.2	Analyze stress, strain and deflection by boussinesq's, burmister's and westergaard's theory
C803.3	Design rigid pavement and flexible pavement conforming to IRC58-2002 and IRC37-2001.
C803.4	Evaluate the performance of the pavement
C803.5	develops maintenance statement based on site specific requirements.