

**DEPARTMENT OF CIVIL ENGINEERING**
**Course Outcomes-2018 Scheme**

Sl. No.	Subject Code	Course Code	Course Outcomes
1	18MAT11 Calculus And Linear Algebra	C101.1	Apply the knowledge of calculus to solve problems related to polar curves and its application in determining the bentness of a curve.
		C101.2	Learn the motion of partial differentiation to calculate the rate of change of multivariate functions, composite functions and Jacobians.
		C101.3	Apply the concept of change of order of integration and variables to evaluate multiple integrals and their usage in computing the area and volumes.
		C101.4	Solve first order linear/nonlinear differential equation analytically using standard methods.
		C101.5	Make use of Matrix theory for system of linear equations and compute Eigen values and Eigen vectors required for Matrix diagonalization process.

Sl. No.	Subject Code	Course Code	Course Outcomes
2	18PHY12 Engineering Physics	C102.1	Understand various types of oscillations and the implications, the role of Shockwaves in various fields and recognize the elastic properties of materials for engineering applications
		C102.2	Realize the interrelation between time varying electric field and magnetic field, the transverse nature of the EM waves and the application in optical fibre communication
		C102.3	Compute Eigen values, Eigen function, momentum of atomic and subatomic particles using Time independent 1-D Schrodinger's wave equations.
		C102.4	Apprehend theoretical background of laser, construction and working of different types of laser and its applications in different fields
		C102.5	Under various electrical and thermal properties like conductors, semiconductors and dielectrics using different theoretical models

Sl. No.	Subject Code	Course Code	Course Outcomes
3	18ELE13 Basic Electrical Engineering	C103.1	Analyse A.C and D.C Circuit
		C103.2	Explain the principle of operation and construction of single phase transformers.
		C103.3	Explain the principle of operation and construction of DC Machines and Synchronous Machines.
		C103.4	Explain the principle of operation and construction of 3 phase Induction Motors.
		C103.5	Discuss the concept of electrical wiring, circuit protecting devices and earthing.

Sl. No.	Subject Code	Course Code	Course Outcomes
4	18CIV14 Elements Of Civil Engineering And Mechanics	C104.1	Mention the applications of various fields of Civil Engineering.
		C104.2	Compute the resultant of given force system subjected to various loads.
		C104.3	Comprehend the action of Forces, Moments and other loads on systems of rigid bodies and compute the reactive forces that develop as a result of the external loads
		C104.4	Locate the Centroid and compute the Moment of Inertia of regular and built-up sections.
		C104.5	Express the relationship between the motion of bodies and analyse the bodies in motion.

Sl. No.	Subject Code	Course Code	Course Outcomes
5	18EGDL15 Engineering graphics	C105.1	Prepare Engineering drawings as per BIS conventions mentioned in the relevant codes
		C105.2	Produce computer generated drawings using CAD software.
		C105.3	Use the knowledge of orthographic projections to represent Engineering information / concepts and present the same in the form of drawings
		C105.4	Convert Pictorial and isometric views of simple objects to orthographic views.

Sl. No.	Subject Code	Course Code	Course Outcomes
6	18PHYL16 Engineering Physics Lab	C106.1	Identify the common electrical components and measuring instruments used for conducting experiments in the electrical laboratory.
		C106.2	Compare Power factor of Lamps.
		C106.3	Determine impedance of electrical circuit and power consumed in 3-phase load.
		C106.4	Determine earth resistance and understand two way and three way of control of lamps

Sl. No.	Subject Code	Course Code	Course Outcomes
7	18ELEL17 Basic Electrical Engineering Lab	C107.1	Identify the common electrical components and measuring instruments used for conducting experiments in the electrical laboratory.
		C107.2	Compare Power factor of Lamps.
		C107.3	Determine impedance of electrical circuit and power consumed in 3-phase load.
		C107.4	Determine earth resistance and understand two way and three way of control of lamps
		C107.5	

Sl. No.	Subject Code	Course Code	Course Outcomes
8	18EGH18 Technical English	C108.1	Understand and apply the Fundamentals of Communication Skills in their communication skills.
		C108.2	Identify the nuances of phonetics, intonation and enhance pronunciation skills
		C108.3	To impart basic English grammar and essentials of language skills as per present requirement.
		C108.4	Understand and use all types of English vocabulary and language proficiency.
		C108.5	Adopt the Techniques of Information Transfer through presentation.

Sl. No.	Subject Code	Course Code	Course Outcomes
9	18MAT21 Advanced Calculus And Numerical Methods	C109.1	Solve first order linear/nonlinear differential equations analytically using standard methods.
		C109.2	Explain various physical models through higher order differential equations and solve such linear ordinary differential equations.
		C109.3	Understand a variety of partial differential equations and solution by exact methods/method of separation of variables.
		C109.4	Describe the applications of infinite series and obtain series solution of ordinary differential equations.
		C109.5	Apply the knowledge of numerical methods in the models of various physical and engineering phenomena

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10	18CHE22 Engineering Chemistry	C110.1	Use of free energy in equilibria, rationalize bulk properties and processes using thermodynamic consideration, electrochemical energy systems
		C110.2	Causes and effects of corrosion of metals and control of corrosion. Modification of surface properties of metals to develop resistance to corrosion, wear, tear, impact etc by electroplating and electroless plating.
		C110.3	Production and consumption of energy for industrialization of country and living standards of people. Electrochemical and concentration cells. Classical, Modern batteries and fuel cells. Utilization of solar energy for different useful forms of energy.
		C110.4	Environmental pollution, waste management and water chemistry.
		C110.5	Different techniques of instrumental methods of analysis. Fundamentals principles of nanomaterials.

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11	18CPS23 Problem Solving Through C Programming	C111.1	Illustrate simple algorithms from the different domains such as mathematics, physics, etc.
		C111.2	Construct a programming solution to the given problem using C
		C111.3	Identify and correct the syntax and logical errors in C programs.
		C111.4	Modularize the given problem using functions and structures.
		C111.5	Introduction to pointers and structures

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12	18ELN24 Basic Electronics	C112.1	Describe the operation of diodes, BJT, FET and Operational Amplifiers.
		C112.2	Design and explain the construction of rectifiers, regulators, amplifiers and oscillators.
		C112.3	Describe general operating principles of SCRs and its application.
		C112.4	Explain the working and design of Fixed voltage IC regulator using 7805 and a stable oscillator using Timer IC 555.
		C112.5	Explain the different number systems and their conversions and construct simple combinational and sequential logic circuits using Flip-Flops
		C112.6	Describe the basic principle of operation of communication system and mobile phones

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13	18EME25 Engineering Graphics	C113.1	Identify different sources of energy and their conversion process.
		C113.2	Explain the working principle of hydraulic turbines, pumps, IC engines and refrigeration.
		C113.3	Recognize various metal joining processes and power transmission elements.
		C113.4	Understand the properties of common engineering materials and their applications in engineering industry.
		C113.5	Discuss the working of conventional machine tools, machining processes, tools and accessories

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14	18CHEL26 Engineering Chemistry Lab	C114.1	Handling different types of instruments for analysis of materials using small quantities of materials involved for quick and accurate results
		C114.2	Carrying out different types of titrations for
		C114.3	Analyse and interpret data of the experiments.

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15	18CPL27 C Programming Lab	C115.1	Write algorithms, flowcharts and program for simple problems.
		C115.2	Correct syntax and logical errors to execute a program.
		C115.3	Write iterative and wherever possible recursive programs.
		C115.4	Demonstrate use of functions, arrays, strings.
		C115.5	Introduction to printers and structures

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16	18EGH28-II Technical English	C116.1	Understand and apply the Fundamentals of Communication Skills in their communication skills.
		C116.2	Identify the nuances of phonetics, intonation and enhance pronunciation skills
		C116.3	To impart basic English grammar and essentials of language skills as per present requirement.
		C116.4	Understand and use all types of English vocabulary and language proficiency.
		C116.5	Adopt the Techniques of Information Transfer through presentation.

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17	18MAT31 Transform Calculus, Fourier Series & Num Tech	C201.1	Use Laplace transform and inverse Laplace transform in solving differential/ integral equation arising in network analysis, control systems and other fields of engineering.
		C201.2	Demonstrate Fourier series to study the behaviour of periodic functions and their applications in system communications, digital signal processing and field theory.
		C201.3	Make use of Fourier transform and Z-transform to illustrate discrete/continuous function arising in wave and heat propagation, signals and systems.
		C201.4	Solve first and second order ordinary differential equations arising in engineering problems using
		C201.5	Determine the extremals of functionals using calculus of variations and solve problems arising in dynamics of rigid bodies and vibrational analysis.

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18	18CV32 Strength of Materials	C202.1	To evaluate the basic concepts of the stresses and strains for different materials and strength of structural elements.
		C202.2	To evaluate the development of internal forces and resistance mechanism for one dimensional and two dimensional structural elements.
		C202.3	To analyse different internal forces and stresses induced due to representative loads on structural elements
		C202.4	To evaluate slope and deflections of beams.
		C202.5	To evaluate the behaviour of torsion members, columns and struts.

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19	18CV33 Fluid Mechanics	C203.1	Possess a sound knowledge of fundamental properties of fluids and fluid Continuum
		C203.2	Compute and solve problems on hydrostatics, including practical applications
		C203.3	Apply principles of mathematics to represent kinematic concepts related to fluid flow
		C203.4	Apply fundamental laws of fluid mechanics and the Bernoulli's principle for practical applications
		C203.5	Compute the discharge through pipes and over notches and weirs

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20	18CV34 Building Materials and Construction	C204.1	Select suitable materials for buildings and adopt suitable construction techniques.
		C204.2	Decide suitable type of foundation based on soil parameters
		C204.3	Supervise the construction of different building elements based on suitability
		C204.4	Exhibit the knowledge of building finishes and form work requirements

Sl. No.	Subject Code	Course Code	Course Outcomes
21	18CV35 Basic Surveying	C205.1	Posses a sound knowledge of fundamental principles Geodetics
		C205.2	Measurement of vertical and horizontal plane, linear and angular dimensions to arrive at solutions to basic surveying problems.
		C205.3	Capture geodetic data to process and perform analysis for survey problems
		C205.4	Analyse the obtained spatial data and compute areas and volumes. Represent 3D data on plane figures as contours

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22	18CV36	C206.1	Apply geological knowledge in different civil engineering practice.
		C206.2	Students will acquire knowledge on durability and competence of foundation rocks, and confidence enough to use the best building materials.
		C206.3	Civil Engineers are competent enough for the safety, stability, economy and life of the structures that they construct.
		C206.4	Able to solve various issues related to ground water exploration, build up dams, bridges, tunnels which are often confronted with ground water problems.
		C206.5	Intelligent enough to apply GIS, GPS and remote sensing as a latest tool in different civil engineering construction

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23	18CVL37 Computer Aided Drawing		Prepare, read and interpret the drawings in a professional set up
		C207.1	
		C207.2	Know the procedures of submission of drawings and Develop working and submission drawings for building.
		C207.3	Plan and design a residential or public building as per the given requirements

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24	18CVL38 BMT Laboratory	C208.1	Reproduce the basic knowledge of mathematics and engineering in finding the strength in tension, compression, shear and torsion.
		C208.2	Identify, formulate and solve engineering problems of structural elements subjected to flexure
		C208.3	Evaluate the impact of engineering solutions on the society and also will be aware of contemporary issues regarding failure of structures due to unsuitable materials.

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25	18KVK39 Vyavaharika Kannada	C209.1	Impart and motivate them to learn the State Language with ease and confidence enabling for better communication skills.
		C209.2	Orient and enhance the knowledge of the language basics and grammar the bridge course sessions are conducted by the language department.
		C209.3	Develop and sharpen interpersonal and communication skills
		C209.4	Train the students effectively in the learning process of Kannada language and literature.
		C209.5	Enable the learners with the history, evolution ,literary movements and development of literary forms in Kannada literature to inculcate the ethical values of life .

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26	18MAT41 Complex Analysis, Probability And Statistical Methods	C210.1	Use the concepts of analytic functionand complex potentials to solve the problems arising in electromagnetic field theory.
		C210.2	Utilize conformal transformation and complex integral in aerofoil theory, fluids flow visualization and image processing.
		C210.3	Apply discrete and continuous probability distributions in analysing the probability models arising in engineering field.
		C210.4	Make use of the correlation and regressionanalysis to fit a suitable mathematical model for the statistical data.
		C210.5	Solve exponential problems using Backtracking and Branch & bound technique.



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27	18CV42 Analysis Of Determinate Structures	C211.1	Identify different forms of structural systems.
		C211.2	Construct ILD and analyse the beams and trusses subjected to moving loads
		C211.3	Understand the energy principles and energy theorems and its applications to determine the deflections of trusses and beams
		C211.4	Determine the stress resultants in arches and cables.

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28	18CV43 Applied Hydraulics	C212.1	Apply dimensional analysis to develop mathematical modeling and compute the parametric values in prototype by analyzing the corresponding model parameters
		C212.2	Design the open channels of various cross sections including economical channel sections
		C212.3	Apply Energy concepts to flow in open channel sections, Calculate Energy dissipation,
		C212.4	Compute water surface profiles at different conditions
		C212.5	Design turbines for the given data, and to know their operation characteristics under different operating conditions

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29	18CV44 Concrete Technology	C213.1	Relate material characteristics and their influence on microstructure of concrete
		C213.2	Distinguish concrete behavior based on its fresh and hardened properties.
		C213.3	Illustrate proportioning of different types of concrete mixes for required fresh and hardened properties using professional codes.
		C213.4	Adopt suitable concreting methods to place the concrete based on requirement.
		C213.5	Select a suitable type of concrete based on specific application.

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30	18CV45 Advanced Surveying	C214.1	Apply the knowledge of geometric principles to arrive at surveying problems
		C214.2	Use modern instruments to obtain geo-spatial data and analyse the same to appropriate engineering problems.
		C214.3	Capture geodetic data to process and perform analysis for survey problems with the use of electronic instruments;
		C214.4	Design and implement the different types of curves for deviating type of alignments.

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31	18CV46 Water Supply And Treatment Engineering	C215.1	Estimate average and peak water demand for a community.
		C215.2	Evaluate available sources of water, quantitatively and qualitatively and make appropriate choice for a community.
		C215.3	Evaluate water quality and environmental significance of various parameters and plan suitable treatment system.
		C215.4	Design a comprehensive water treatment and distribution system to purify and distribute water to the required quality standards.

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32	18CVL47 Engineering Geology Lab	C216.1	The students able to identify the minerals, rocks and utilize them effectively in civil engineering practices.
		C216.2	The students will interpret and understand the geological conditions of the area for implementation of civil engineering projects.
		C216.3	The students will interpret subsurface information such as thickness of soil, weathered zone, depth of hard rock and saturated zone by using geophysical methods
		C216.4	The students will learn the techniques in the interpretation of LANDSAT Imageries to find out the lineaments and other structural features for the given area
		C216.5	The students will be able to identify the different structures in the field.

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33	18CVL48 Fluid Mechanics And Hydraulic Machines Lab	C217.1	Properties of fluids and the use of various instruments for fluid flow measurement.
		C217.2	Working of hydraulic machines under various conditions of working and their characteristics.

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34	18CPC49 Constitution Of India ,Professional Ethics AndCyber Law	C218.1	Have the general knowledge and legal literacy and thereby to take up competitive examinations.
		C218.2	Understand state and central policies, fundamental duties.
		C218.3	Understand electoral process and special provisions
		C218.4	Understand powers and functions of municipalities, Panchayats and Co-operative Societies and understand engineering ethics and responsibilities of engineers
		C218.5	Have an awareness about basic human rights in India.

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35	18CV51 Construction Management And Entrepreneurship	C301.1	Prepare a project plan based on requirements and prepare schedule of a project by understanding the activities and their sequence.
		C301.2	Understand labour output, equipment efficiency to allocate resources required for an activity / project to achieve desired quality and safety
		C301.3	Analyze the economics of alternatives and evaluate benefits and profits of a construction activity based on monetary value and time value.
		C301.4	Establish as an ethical entrepreneur and establish an enterprise utilizing the provisions offered by the federal agencies.

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36	18CV52 Analysis Of Indeterminate Structures	C302.1	Determine the moment in indeterminate beams and frames having variable moment of inertia and subsidence using slope deflection method
		C302.2	Determine the moment in indeterminate beams and frames of no sway and sway using moment distribution method.
		C302.3	Construct the bending moment diagram for beams and frames by Kani's method.
		C302.4	Construct the bending moment diagram for beams and frames using flexibility method
		C302.5	Analyze the beams and indeterminate frames by system stiffness method.

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37	18CV53 Design Of RC Structural Elements	C303.1	Understand the design philosophy and principles.
		C303.2	Solve engineering problems of RC elements subjected to flexure, shear and torsion.
		C303.3	Demonstrate the procedural knowledge in designs of RC structural elements such as slabs, columns and footings.
		C303.4	Owns professional and ethical responsibility.

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38	18CV54 Basic Geotechnical Engineering	C304.1	Ability to plan and execute geotechnical site investigation program for different civil engineering projects
		C304.2	Understanding of stress distribution and resulting settlement beneath the loaded footings on sand and clayey soils
		C304.3	Ability to estimate factor of safety against failure of slopes and to compute lateral pressure distribution behind earth retaining structures
		C304.4	Ability to determine bearing capacity of soil and achieve proficiency in proportioning shallow isolated and combined footings for uniform bearing pressure
		C304.5	Capable of estimating load carrying capacity of single and group of piles

Sl. No.	Subject Code	Course Code	Course Outcomes
39	18CV55 Municipal Wastewater Engineering	C305.1	Select the appropriate sewer appurtenances and materials in sewer network.
		C305.2	Design the sewers network and understand the self purification process in flowing water
		C305.3	Deisgn the varies physic- chemical treatment units
		C305.4	Design the various biological treatment units
		C305.5	Design various AOPs and low cost treatment units.

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40	18CV56 Highway Engineering	C306.1	Acquire the capability of proposing a new alignment or re-alignment of existing roads, conduct necessary field investigation for generation of required data.
		C306.2	Evaluate the engineering properties of the materials and suggest the suitability of the same for pavement construction.
		C306.3	Design road geometrics, structural components of pavement and drainage
		C306.4	Evaluate the highway economics by few select methods and also will have a basic knowledge of various highway financing concepts.

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41	18CVL57 Surveying Practice	C307.1	Apply the basic principles of engineering surveying and for linear and angular measurements.
		C307.2	Comprehendeffectivelyfieldproceduresrequiredforaprofessionalsurveyor.
		C307.3	Use techniques, skills and conventional surveying instruments necessary for engineering practice.

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42	18CVL58 Concrete And Highway Materials Lab	C308.1	Able to interpret the experimental results of concrete and highway materials based on laboratory tests.
		C308.2	Determine the quality and suitability of cement.
		C308.3	Design appropriate concrete mix Using Professional codes
		C308.4	Determine strength and quality of concrete. Evaluate the strength of structural elements using NDT techniques
		C308.5	. Test the soil for its suitability as sub grade soil for pavements.

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43	18CIV59 Environmental Studies	C309.1	Understand the principles of ecology and environmental issues that apply to air, land, and water issues on a global scale
		C309.2	Develop critical thinking and/or observation skills, and apply them to the analysis of a problem or question related to the environment,
		C309.3	Demonstrate ecology knowledge of a complex relationship between biotic and abiotic components
		C309.4	Apply their ecological knowledge to illustrate and graph a problem and describe the realities that managers face when dealing with complex issues

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44	18CV61 Design Of Steel Structural Elements	C310.1	Possess knowledge of Steel Structures Advantages and Disadvantages of Steel structures, steel code provisions and plastic behaviour of structural steel.
		C310.2	Understand the Concept of Bolted and Welded connections.
		C310.3	Understand the Concept of Design of compression members, built-up columns and columns splices.
		C310.4	Understand the Concept of Design of tension members, simple slab base and gusseted base.
		C310.5	Understand the Concept of Design of laterally supported and un-supported steel beams.

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45	18CV62 Applied Geotechnical Engineering	C311.1	Ability to plan and execute geotechnical site investigation program for different civil engineering projects
		C311.2	Understanding of stress distribution and resulting settlement beneath the loaded footings on sand and clayey soils
		C311.3	Ability to estimate factor of safety against failure of slopes and to compute lateral pressure distribution behind earth retaining structures
		C311.4	Ability to determine bearing capacity of soil and achieve proficiency in proportioning shallow isolated and combined footings for uniform bearing pressure
		C311.5	Capable of estimating load carrying capacity of single and group of piles

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46	18CV63 Hydrology And Irrigation Engineering	C312.1	Understand the importance of hydrology and its components.
		C312.2	Measure precipitation and analyze the data and analyze the losses in precipitation.
		C312.3	Estimate runoff and develop unit hydrographs.
		C312.4	Find the benefits and ill-effects of irrigation.
		C312.5	Find the quantity of irrigation water and frequency of irrigation for various crops. Find the canal capacity, design the canal and compute the reservoir capacity.

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47	18CV643 Alternate Building Materials	C313.1	Solve the problems of Environmental issues concerned to building materials and cost-effective building technologies;
		C313.2	Select appropriate type of masonry unit and mortar for civil engineering constructions; also, they are able to Design Structural Masonry Elements under Axial Compression.
		C313.3	Analyze different alternative building materials which will be suitable for specific climate and in an environmentally sustainable manner. Also capable of suggesting suitable agro and industrial wastes as a building material
		C313.4	Recommend various types of alternative building materials and technologies and design a energy efficient building by considering local climatic condition and building material.

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48	18ME654 Advanced Materials Technology	C314.1	Explain the concepts and principles of advanced materials and manufacturing processes.
		C314.2	Understand the applications of all kinds of Industrial materials.
		C314.3	Apply the material selection concepts to select a material for a given application
		C314.4	Define Nanotechnology, Describe nano material characterization.
		C314.5	Understand the behaviour and applications of smart materials, ceramics, glasses and non-metallic materials.

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49	18CVL66 Software Application Laboratory	C315.1	use software skills in a professional set up to automate the work and thereby reduce cycle time for completion of the work

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50	18CVL67 Environmental Engineering Lab	C316.1	Acquire capability to conduct experiments and estimate the concentration of different parameters.
		C316.2	Compare the result with standards and discuss based on the purpose of analysis.
		C316.3	Determine type of treatment, degree of treatment for water and waste water.
		C316.4	Identify the parameter to be analyzed for the student project work in environmental stream.

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51	18CVEP68 Extensive Survey Project	C317.1	Apply Surveying knowledge and tools effectively for the projects
		C317.2	Understanding Task environment, Goals, responsibilities, Task focus, working in Teams towards common goals, Organizational performance expectations, technical and behavioral competencies.
		C317.3	Application of individual effectiveness skills in team and organizational context, goal setting, time management, communication and presentation skills.
		C317.4	Professional etiquettes at workplace, meeting and general Establishing trust based relationships in teams & organizational environment
		C317.5	Orientation towards conflicts in team and organizational environment, Understanding sources of conflicts, Conflict resolution styles and techniques

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52	18CV71 Quantity Surveying And Contract Management	C401.1	Taking out quantities and work out the cost and preparation of abstract for the estimated cost for various civil engineering works.
		C401.2	Prepare detailed and abstract estimates for various road works, structural works and water supply and sanitary works
		C401.3	Prepare the specifications and analyze the rates for various items of work.
		C401.4	Assess contract and tender documents for various construction works.
		C401.5	Prepare valuation reports of buildings.

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53	18CV72 Design Of RCC and Steel Structures	C402.1	Students will acquire the basic knowledge in design of RCC and Steel Structures.
		C402.2	Students will have the ability to follow design procedures as per codal provisions and skills to arrive at structurally safe RC and Steel members.

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54	18CV734 Air Pollution And Control	C403.1	Identify the major sources of air pollution and understand their effects on health and environment.
		C403.2	Evaluate the dispersion of air pollutants in the atmosphere and to develop air quality models.
		C403.3	Ascertain and evaluate sampling techniques for atmospheric and stack pollutants.
		C403.4	Choose and design control techniques for particulate and gaseous emissions.

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55	18CV745 Urban Transport Planning	C404.1	Design, conduct and administer surveys to provide the data required for transportation planning.
		C404.2	Supervise the process of data collection about travel behavior and analyze the data for use in transport planning
		C404.3	Develop and calibrate modal split, trip generation rates for specific types of land use developments.
		C404.4	Adopt the steps that are necessary to complete a long-term transportation plan.

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56	18ME751 Energy & Environment	C405.1	Understand energy scenario, energy sources and their utilization.
		C405.2	Understand various methods of energy storage, energy management and economic analysis.
		C405.3	Analyse the awareness about environment and ecosystem.
		C405.4	Understand the environment pollution along with social issue and acts

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57	18CVL76 Computer Aided Detailing Of Structures	C406.1	Prepare detailed working drawings

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58	18CVL77 Geotechnical Engineering Laboratory	C407.1	Physical and index properties of the soil
		C407.2	Classify based on index properties and field identification
		C407.3	To determine OMC and MDD, plan and assess field compaction program
		C407.4	Shear strength and consolidation parameters to assess strength and deformation characteristics
		C407.5	In-situ shear strength characteristics(SPT-Demonstration)



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59	18CVP78 Project Phase-1	C408.1	Describe the project and be able to defend it.
		C408.2	Develop critical thinking and problem solving skills
		C408.3	Learn to use modern tools and techniques.
		C408.4	Communicate effectively and to present ideas clearly and coherently both in written and oral forms.

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60	18CV81 Design Of Pre-Stresseconcrete	C409.1	Understand the requirement of PSC members for present scenario.
		C409.2	Analyse the stresses encountered in PSC element during transfer and at working.
		C409.3	Understand the effectiveness of the design of PSC after studying losses
		C409.4	Capable of analyzing the PSC element and finding its efficiency.
		C409.5	Design PSC beam for different requirements.

Sl. No.	Subject Code	Course Code	Course Outcomes
61	18CV825 Pavement Design	C410.1	Systematically generate and compile required data's for design of pavement (Highway & Airfield).
		C410.2	Analyze stress, strain and deflection by boussinesq's, bur mister's and westergaard's theory.
		C410.3	Design rigid pavement and flexible pavement conforming to IRC58-2002 and IRC37-2001.
		C410.4	Evaluate the performance of the pavement and also develops maintenance statement based on site specific requirements.

Sl. No.	Subject Code	Course Code	Course Outcomes
62	18CVP83 Project Phase-2	C411.1	Develop skills to work in a team to achieve common goal.
		C411.2	Develop skills of project management and finance.
		C411.3	Develop skills of self learning, evaluate their learning and take appropriate actions to improve it.
		C411.4	Prepare them for life-long learning to face the challenges and support the technological changes to meet the societal needs.

Sl. No.	Subject Code	Course Code	Course Outcomes
63	18CVS84 Technical Seminar	C412.1	Develop knowledge in the field of Civil Engineering and other disciplines through independent learning and collaborative study.
		C412.2	Identify and discuss the current, real-time issues and challenges in engineering & technology.
		C412.3	Develop written and oral communication skills. Apply principles of ethics and respect in interaction with others
		C412.4	Explore concepts in larger diverse social and academic contexts.
		C412.5	Develop the skills to enable life-long learning.

Sl. No.	Subject Code	Course Code	Course Outcomes
63	18CVI85 Internship	C412.1	. To strengthen the association of students with construction industry.
		C412.2	To create awareness amongst the students the recent trends of civil engineering in industries.
		C412.3	To percept the role and responsibility of civil engineer in the industry.