



Department of Civil Engineering

Program: B.Tech-Civil Engineering

Academic Year 2023-24

Course Code	Course Name	Co No	Description of the course Out come
23UC0018	FOM	CO1	"Apply matrix theory to solve system of linear equations."
		CO2	Apply trigonometric identities to solve trigonometric equations and also predict the data by using concepts combinatorics.
		CO3	Apply calculus concept to determine areas and volumes and also solve differential equations.
		CO4	Apply statistical methods to find central tendency of the given data and also find directional ratios by vector algebra concepts.
23SC1101	CTS	CO1	"Develop and apply logical building blocks to solve real world problems
		CO2	"Apply computational thinking for designing solutions
		CO3	"Develop and apply the CRUD operations on arrays
		CO4	"Apply CRUD operations on Linear Data Structures
		CO5	"Apply the structured programming paradigm with logic building skills on Basic and Linear Data Structures for solving real world problems"
		CO6	"Skill the students in such a way that students will be able to develop logic that help them to create programs as well as applications in C"
22CY1001	CHEM	CO1	Predict potential complications from combining various chemicals or metals in an engineering setting
		CO2	Discuss fundamental aspects of electrochemistry and materials science relevant to corrosion phenomena
		CO3	Examine water quality and apply appropriate purification technique for intended problem
		CO4	Explain the role of chemical kinetics in the formation and destruction of ozone in the atmosphere and predict the connection between molecular behavior and observable physical properties.
		CO5	An ability to analyze and generate experimental skills
23MT1001	LACE	CO1	Apply matrix algebra concepts to solve system of linear equations.
		CO2	Apply multivariate differential calculus to find extremum of functions and solve differential equations.
		CO3	Solve improper integrals using beta and gamma functions and also evaluate double and triple

			integrals.
		CO4	Evaluate line, surface and volume integrals by vector calculus concepts.
22ME1103	DTW	CO1	Demonstrate proficiency in typing sentence , paragraph , report , presentations along spread sheets using office tools, LaTeX tools and PowerBI
		CO2	Build a static website and blog with using html along with Special features of HTML5, Canvas, audio, video
		CO3	Develop a virtual environment with cospace and construct a marker based Augmented Reality
		CO4	Utilising the softwares of Autodesk Fusion 360 and the same can be printed in 3D printer as physical prototype, Fundamentals of electrical circuit: Ohms law, KCL and KVL law
		CO5	Develop
23CY1001	EC	CO1	Apply the operation of electrochemical systems to produce electric energy and storage devices.
		CO2	Use the fundamental aspects of electrochemistry and materials science relevant to corrosion phenomena.
		CO3	Examine water quality and apply appropriate purification technique for intended problem.
		CO4	Employ the fundamental principles and general properties of materials in various engineering applications.
		CO5	Analyze the data, develop skills in chemical analysis and their application in engineering.
22MT2003	MMNM	CO1	Modeling and solution of algebraic and transcendental equations: Bisection method and Newton –Raphson method. Finite differences: Forward, Backward, Shift operators, average operator and relations between the difference operators. Interpolation : Lagranges and Newton’s divided difference formulas.
		CO2	Numerical solution of ordinary differential equations: Taylor’s, Eulers, Modified Eulers’s and Runge-Kutta method of fourth order. Numerical solutions of system of linear equations: Models of system of linear equations-Jacobi and Gauss-Seidel methods
		CO3	Formation of partial differential equations, solutions of first order linear and nonlinear PDEs, Lagrange method, and Charpit’s method.
		CO4	Method of separation of variables i.e., one dimensional wave and heat equations, Laplace equation in two dimensions. Solving Laplace equation by finite difference method.
23UC0017	IKS	CO1	List all the 16 sutras in Vedic Mathematics, Using Vedic mathematics sutras to perform basic arithmetic operations .
		CO2	"Develop the critical thinking skills to solve Shakuntala Devi Puzzles .
23SC1202	DST	CO1	"Understand various sorting algorithms and analyse

			the efficiency of the algorithms.
		CO2	"Implement and evaluate Linear Data Structures and Demonstrate their applications.
		CO3	" Implement and evaluate tree data structures and understand hashing techniques
		CO4	" Understand graph data structures and apply graphs to solve problems
		CO5	"Design, Develop and evaluate common practical applications for linear and nonlinear data structures.""
		CO6	""""Skill the students in such a way that students will be able to develop logic that help them to create programs on both linear and non-linear data structures and its Applications."
23ME1004	WPE	CO1	Prepare different components using Carpentry, Tin-smithy trade
		CO2	Apply basic electrical engineering knowledge for house wiring practice
		CO3	Prepare different components using various manufacturing techniques
		CO4	Perform various machining operations.
23ME1002	EGP	CO1	"Model Engineering Curves in engineering Practice, Conic sections and special curves, scales both manually and using computer aided design tool (CAD).
		CO2	"Project points, lines and planes in first angle third angle both manually and using CAD.
		CO3	"Project solids and generate the sectional views of solids, development of surfaces of regular solids both manually and using CAD.
		CO4	"Convert orthographic projections to create isometric view and isometric view to orthographic projection both manually and using CAD.
22CE1201	EGG	CO1	"Understand the significance of engineering geology, basics of geological processes that modify the surface of the earth, earthquakes, exhibited by rocks and their influence ,"
		CO2	"Understand the basics of minerals and rocks, geological structures
		CO3	"Apply the geological conditions to identify suitable site for civil engineering projects."
		CO4	"Understanding the geological conditions to identify potential sites for groundwater, sites for dam and reservoir and tunnels."
		CO5	The study of how Earth's materials, structures, processes, and organisms have changed over time
22UC0021	SIL	CO1	"Extension Activities and Social Outreach activities (ESO)"
		CO2	"Technology Clubs (TEC)"
		CO3	"Liberal arts, creative arts and hobby clubs (LCH)"
		CO4	Innovation, Incubation & Entrepreneurship (IIE)
		CO5	Health & Well Being (HWB)

OEGN0001	NCC-1	CO1	Imbibe the conduct of NCC cadets.
		CO2	Respect the diversity of different Indian culture.
		CO3	Practice togetherness and empathy in all walks of their life.
		CO4	Do their own self-analysis and will work out to overcome their weakness for
		CO5	Perform foot drill and follow the different word of command and Fire a weapon effectively with fair degree of marksmanship.
23UC1202L	LINGUA SKILLS CERTIFICATION	CO1	The Cambridge Lingua Skills course is designed to enhance students' English language proficiency across reading, writing, listening, and speaking domains. Listening Component.
		CO2	The Cambridge Lingua Skills course is designed to enhance students' English language proficiency across reading, writing, listening, and speaking domains. Speaking component
		CO3	The Cambridge Lingua Skills course is designed to enhance students' English language proficiency across reading, writing, listening, and speaking domains. Reading component.
		CO4	The Cambridge Lingua Skills course is designed to enhance students' English language proficiency across reading, writing, listening, and speaking domains. Writing component.
23IE2040	SOCIAL INTERNSHIP	CO1	"Remember the fundamentals of the science of water cycle along with powerful tools that students can use to diagnose the health of the local water cycle as well as develop targeted action plans to restore the local natural water cycle and bring water prosperity"
		CO2	"Remember the water sustainability and water resilience of village, city, residential facilities and households using multilevel water scorecards
		CO3	Apply the design thinking positive action plan for a village, campus, residential facility and community neighborhood.
		CO4	"Applying the water positive solutions within an urban watershed, a rural watershed, residential institutional and corporate community
23CE2103R	SVY	CO1	"
		CO2	Calculate the difference in elevation by using differential leveling techniques and prepare a contour plan.
		CO3	"
		CO4	Calculate the height of the building by using a theodolite and tacheometric survey, and total station surveying
		CO5	Conceptualize the project by applying surveying techniques
		CO6	operate modern surveying instruments such as total stations, GPS, levels

23CE2105R	SM	CO1	Understand the stress-strain behavior of deformed bodies and Elastic constants and their relationships.
		CO2	Applying the concepts of statically determinate beams subjected to with various loads.
		CO3	Apply the concepts of Shear stress, bending stress and stress transformations in flexural members.
		CO4	Apply the concepts of stability and load-carrying capacity on columns and torsional deformation of shafts.
		CO5	Analyze the mechanical properties of various materials through experimental verification.
23CE2102R	FMH	CO1	Applying properties of fluid and conservation laws to real-world situations.
		CO2	Applying properties of fluid and conservation laws fluid flowing through pipe.
		CO3	Analysis fluid properties to open channel flow.
		CO4	Analysis of specific energy curve in open channel flow.
		CO5	Illustrate the experimental procedure and interpretation of results by applying properties of fluid through flow through pipes and open channel flow.
23SDCE01R	VMSD	CO1	Analyze the knowledge of building design and execution in sites.
		CO2	Analyze the knowledge of drawing of various building plans using AutoCAD software
		CO3	Analyze the knowledge of building design of 2D, 3D, Slab design using Design Software
		CO4	Analyze the knowledge of building design of various structural elements using Design Software
		CO5	Apply the knowledge for design of beams, columns, staircases, slabs, footings using ETABS
23MB4068	IM	CO1	"Identify and analyze market needs and gaps, using tools such as SWOT and PESTLE analysis, to pinpoint real-world problems suitable for entrepreneurial solutions.
		CO2	"Develop innovative solutions through creative thinking and apply lean startup principles to build and iterate a minimum viable product (MVP).
		CO3	"Create a comprehensive lean business model canvas that outlines customer segments, value propositions, channels, revenue streams, and key metrics.
		CO4	"Create a compelling business plan and investor pitch, including financial projections and funding strategies, demonstrating effective communication and persuasion skills.
23DT01IF	ETDPT	CO1	design and implement robust web applications using Python and Django, integrating databases and deploying applications effectively.
		CO2	apply advanced UI design principles, data handling techniques, and deployment strategies in developing cross-platform mobile applications using React Native.

		CO3	create complex 3D models using Fusion 360, applying sketching, part modeling, and analyzing advanced techniques such as sweep and loft operations.
		CO4	IoT architecture, design embedded systems using ESP32 and other boards, implement various communication protocols like Bluetooth and GPS, and apply IoT applications for data analytics and cloud integration.
23LE1003	LACFE	CO1	"Apply matrix algebra concepts to solve system of linear equations."
		CO2	"Apply multivariate differential calculus to find extremum of functions and solve differential equations. "
		CO3	"Solve improper integrals using beta and gamma functions and also evaluate double and triple integrals."
		CO4	"Evaluate line, surface and volume integrals by vector calculus concepts. "
23LE1001	CTSD	CO1	"Design Basic and Complex Building Blocks for real world problems using structured programming paradigm"
		CO2	"Apply Computational Thinking for designing solutions to real world problems"
		CO3	Develop and Analyze CRUD operations on arrays
		CO4	Develop and Analyze CRUD operations on Linear Data Structures.
		CO5	"Apply the structured programming paradigm with logic-building skills on Basic and Linear Data Structures for solving real-world problems"
23UC0013	GLBCP	CO1	Codechef Weekly Contest
		CO2	Solve roadmap to 3 star problems
23SDCE01L	V&MSD	CO1	Analyze the knowledge of building design and execution in sites.
		CO2	Analyze the knowledge of drawing of various building plans using AutoCAD software
		CO3	Analyze the knowledge of building design of 2D, 3D, Slab design using Design Software
		CO4	Analyze the knowledge of building design of various structural elements using Design Software
		CO5	Apply the knowledge for design of beams, columns, staircases, slabs, footings using ETABS
23CE2102L	FM&H	CO1	Applying properties of fluid and conservation laws to real world situations.
		CO2	Applying properties of fluid and conservation laws fluid flowing through pipe.
		CO3	Analysis fluid properties to open channel flow.
		CO4	Analysis of specific energy curve in open channel flow.
		CO5	Illustrate the experimental procedure and interpretation of results by applying properties of fluid through flow through pipes and open channel flow.

23CE2103L	SUR	CO1	Apply the knowledge of plane surveying for the computation of bearings in a traverse.
		CO2	Calculate the difference in elevation by using differential leveling techniques and prepare a contour plan.
		CO3	Compute the area of field and volume of earthwork.
		CO4	"
		CO5	"
		CO6	"
23CE2105L	SM	CO1	"Understand the stress-strain behavior of deformed bodies and Elastic constants and their relationships.
		CO2	"Applying the concepts of statically determinate beams subjected to with various loads.
		CO3	"Apply the concepts of Shear stress, bending stress and stress transformations in flexural members.
		CO4	"Apply the concepts of stability and load-carrying capacity on columns and torsional deformation of shafts.
		CO5	"Analyze the mechanical properties of various materials through experimental verification.
23CE2206	SA	CO1	Determine the deflection of Determinate beams by various methods
		CO2	Analyze of Indeterminate Propped cantilever and fixed beams
		CO3	Analyze Indeterminate continuous beams and portal frames by slope deflection method.
		CO4	Analyse continuous beams and portal frames by moment distribution method and kanis method.
23CE2208R	GTE	CO1	"Apply and Describe soils and determine their physical characteristics such as grain size, water content, and void ratio, and their inter- relations, classify soils, determine compaction of soils, and analyse the soil permeability and seepage analysis"
		CO2	"Apply and Analyse the concept of effective stress, determine total and effective stresses and porewater pressures and their distribution within a soil mass, determine the consolidation settlement
		CO3	"Analysethe lateral earth pressure, stability of slopes and retaining walls, Understand the importance and methods of soil investigations
		CO4	"Understand and Apply the Terzaghi's shear failure criteria for soils and their limitations and determine the bearing capacity
		CO5	"Apply the index and engineering properties of soils from various laboratory tests and prepare the soil investigation report"
23CE2207	CT	CO1	Understand about the constituent and properties of cement.
		CO2	Understand about the fresh, hardened and durability of concrete
		CO3	Understand about special concretes and concreting

			techniques
		CO4	To apply concrete mix design in the field
		CO5	Demonstrate and apply knowledge experiments in the project-based laboratory
23CE2229F	ACT	CO1	To understand about the Advanced Construction Technology and Building Information Modeling (BIM)
		CO2	To Know and Understanding about the 3D Printing & Modular Construction
		CO3	To understand about Smart Building Systems and Sustainable Construction
		CO4	To know and Apply few Case Studies & Future Directions in Advanced Construction Technology
23CE2209R	TE	CO1	Understand the Current road projects including highway project preparation
		CO2	Understand various geometrical features of highway
		CO3	Understand and Identify the suitable materials for pavement construction
		CO4	Design of Various Pavements and understand Traffic Engineering Principles
		CO5	Applying Various Materials used in formation of pavements as per MORTH Specifications
23MB4062	CPM	CO1	"Understand construction principles and techniques to effectively plan and execute construction projects."
		CO2	"Understand about construction project scheduling, cost estimation, and resource allocation for a particular project"
		CO3	Understand about the Construction Methods and Techniques
		CO4	Understand about the Construction Project Cost Estimation and Control.
22UC0023	SIL	CO1	Extension Activities and Social Out reach activities,Technology Clubs
		CO2	Liberal arts creative arts and hobby clubs,Innovation, Incubation & Entrepreneurship,Health & Well Being (HWB)
		CO3	Liberal arts creative arts and hobby clubs
		CO4	Innovation, Incubation & Entrepreneurship
		CO5	Health & Well Being (HWB)
23SDCE02R	BIM	CO1	"Proficiently navigate the Autodesk Revit Architecture interface, showcasing mastery in the editing and resetting of wall profiles, floors, roofs, and ceilings."
		CO2	"Effectively collaborate with component families, demonstrating adeptness in modifying families according to best practices, and applying acquired skills in schematic design."
		CO3	" Showcase proficiency in managing materials, visualizing designs, and rendering within Autodesk Revit Architecture."
		CO4	"Implement various project roles, and demonstrating

			effective application of repetition techniques within the software."
		CO5	"Developing BIM Model using Revit Software and submission of project report"
23UC0023	SIL	CO1	SIL
		CO2	Technology Clubs
		CO3	Liberal arts creative arts and hobby clubs
		CO4	Innovation, Incubation & Entrepreneurship
		CO5	Health & Well Being (HWB)
23CC4021	RA	CO1	"Understanding Architectural Modeling in Revit.
		CO2	"Application of BIM Workflows in Design Projects
		CO3	"Analyzing Structural and Material Properties
		CO4	Collaboration and Project Management in BIM
23EC2228F	BEIH	CO1	Apply principles of biopotential recording and different non-electric parameter measurements in the medical field.
		CO2	Applying the various medical instrumentation and role of electronics in the medical field.
		CO3	Apply IoT for Healthcare as a next-generation boon for electronics with a study of different sensors
		CO4	application-oriented approach in medical fields through IoT
		CO5	Analyze and develop the practical IoT applications for health care industry
23EC2226F	WC	CO1	Understand the principles of wireless communication to enable efficient and reliable transmission of data without physical connections.
		CO2	Interpret small scale and large scale fading and study mobile multipath channels.
		CO3	Recognize various types diversity techniques to mitigate fading
		CO4	Interpret various protocols and architecture used in wireless networks
		CO5	Analyze Spectrum bands of wireless technologies, verification of different types of fading and study various communication protocols.
23EC2224F	DNA	CO1	Apply the theoretical foundations of deep learning architectures and their functionality to evaluate performance using evaluation metrics.
		CO2	Apply various CNN architectures (e.g., AlexNet, VGG, ResNet, DenseNets) to solve image classification tasks using TensorFlow, Keras, and scikit-learn, and evaluate their performance using standard datasets.
		CO3	Apply RNN architectures, such as LSTMs, GRUs, and bidirectional RNNs, to model and analyze time series data, addressing challenges like vanishing gradients and understanding their advantages and limitations in real-world applications.
		CO4	Apply and Build end-to-end deep learning models for diverse datasets, integrating CNNs and RNNs for tasks such as image and sequence analysis, and leverage

			pre-trained models for transfer learning and real-world problem-solving.
		CO5	Design and evaluate complex deep learning models by integrating convolutional and recurrent neural networks to address real-world problems, utilizing advanced frameworks like TensorFlow and Keras, and analyze their performance on standard datasets using metrics such as accuracy, F1 score, and ROC curves.
23EC2223F	FR	CO1	Apply the functional elements of robotics to build a simple robot.
		CO2	"Apply Denavit -Hattenberg parameters to position the manipulators."
		CO3	"Apply the differential motion through Jacobian to control the manipulators."
		CO4	"Analyze the force control techniques using the Lagrange dynamic model."
		CO5	"Analyze the movement of the manipulator with the required kinematics. "
23EC2222F	DVD	CO1	Apply the knowledge of various CAD Tool to design, synthesis and functional simulation processes.
		CO2	"Realize Digital CMOS devices with different methodologies."
		CO3	"Design various combinational and sequential digital circuits using Verilog HDL."
		CO4	"Realize the different modeling of CMOS digital circuits."
		CO5	"Design, implement, and analyze the combinational and sequential circuits using Xilinx Vivado Full Suite."
23EC2241F	FNT	CO1	Illustrate historical significance, evolution and fundamental aspects of nanotechnology
		CO2	Identification of various synthesis techniques for fabrication of nanomaterials
		CO3	Apply the properties of nanotechnology for the development of next generation technologies
		CO4	Analyze the various applications of nanotechnology in real world.
23EE2230F	EAS	CO1	Apply Feedback Control principles to determine stability of physical systems
		CO2	Model the characteristics of sensors and implement networking of sensors
		CO3	Model the characteristics of Actuators and energy sources for autonomous systems
		CO4	Apply the electronic control for fundamental units of autonomous systems
		CO5	Test the characteristics of sensors, actuators, and electronic control for autonomous systems
23ME2221F	SCQM	CO1	Understand the concepts of supply chain management, process, strategies, challenges, performance, networks
		CO2	Understand demand management and operations management in supply chain

		CO3	Understand procurement management and logistics management in supply chain
		CO4	Apply concepts of SQC to construct control charts.
23BT2224F	BO	CO1	Apply bioprocess principles to produce monoclonal antibodies using suitable bioreactors.
		CO2	Apply various bioprocess engineering principles to optimize monoclonal antibody (MAb) production.
		CO3	Apply bioreactor modes and kinetics to assess environmental conditions and mass transfer.
		CO4	Apply various scale-up and scale-down strategies to analyze the metabolic flux of monoclonal antibody (MAb) production.
		CO5	Apply various upstream and downstream techniques for the production of recombinant insulin.
23CE3110R	DRCS	CO1	Recognize various design philosophies of reinforced concrete structures & model designing.
		CO2	Design of Singly Reinforced Beams, Doubly Reinforced Beams, and Flanged Beams
		CO3	Design of One-way, two-way slabs and Design of columns
		CO4	Foundation Design and Staircase Design
		CO5	Design and detailing of RC Structural Elements
23STE3101R	ACT	CO1	" Understanding about Fly Ash, Ground Granulated Blast Furnace Slag, Silica Fume, Metakaolin, Red mud, Bentonite, Concrete Mix Design"
		CO2	"Understanding about Nano Materials in Concrete, Water Proofing, Chemical Admixture in Concrete (Super Plasticizers, Retarders, & Accelerators), Fibers, Polymers"
		CO3	"Understanding about Mass Concreting, Roller Compacted Concreting, Pumped Concreting, Sprayed Concreting, Self Compacted Concreting, Re-Cycled Aggregate Concreting"
		CO4	"Understanding about Corrosion of Reinforcing Steel, Chloride Ion Penetration, Carbonation, Service Life of RC Structures, Sulphate Attack, Alkali Silica Reaction, Acid Attack."
		CO5	To apply the knowledge on concrete to live situations
		CO6	To apply the knowledge on new construction materials
23STE3202R	ASA	CO1	Analysis of Determinate Structures For Various Loads And Load Combinations.
		CO2	Analysis of Indeterminate Structures Using Matrix Methods.
		CO3	Analysis of Hinged Arches.
		CO4	Analysis of Indeterminate Beams Using Plastic Analysis Methods.
23SDCE03R	ADMSS	CO1	Understand Integration of Theory and Software: The course likely combines theoretical concepts related to structural analysis and design with the practical use of ETABS. This integration enables students to

			understand the underlying principles while simultaneously developing proficiency in using the software for structural analysis and design tasks. able to generate realistic and detailed virtual representations of engineering designs, incorporating dimensions, materials, and textures.
		CO2	Apply Industry Relevance: ETABS is widely used in the industry for analysing and designing complex structures. By familiarizing students with this software, the course equips them with skills that are highly relevant to the civil engineering profession. This can enhance their employability and prepare them to meet industry demands.
		CO3	Understand Efficient Design Process: The course aims to teach students how to utilize ETABS effectively for analysing and designing multi-storied structures. By using the software's advanced features, students can optimize the design process, improve structural performance, and ensure compliance with relevant codes and regulations.
		CO4	Apply Hands-on Learning: The course likely includes practical exercises and projects that require students to work on real or simulated multi-storied structures using ETABS. This hands-on approach allows students to gain practical experience in modelling, analysis, and design, reinforcing their theoretical understanding.
		CO5	Analysis & Design of Multi-Storied Structures Using ETABS - Project
23CE3211R	QSE	CO1	Demonstrate the ability to read and interpret technical engineering drawings, Prepare the BOQ, rate analysis, and quantity take-off, calculate quantities for different item of works and buildings
		CO2	Estimate material quantities, rate analysis, and costing of RCC Buildings
		CO3	Estimate material quantities, rate analysis, and costing of Steel Structures, Roads and Culverts
		CO4	Prepare the tender document for the award of the Government Project
		CO5	Prepare the Project Report with quantity estimation and costing on RCC building, Steel Structure, road, and culvert
23CE3111	EE	CO1	To apply the concept of forecast population and design of water treatment units
		CO2	To Understand outline of Water distribution system and layouts of water layouts distribution system and air pollution.
		CO3	Apply concept of sewage quantity and design of sewerage system
		CO4	To Understand the concept of Solid Waste Management methods and Noise pollution effects
		CO5	To apply the testing of water & wastewater, design of

			water, wastewater treatment plant.
23UC0026	HV	CO1	The student will understand about value, human values and develop right understanding of human values in personal and professional life.
		CO2	The student will understand about self, others and human-human relationship in individual, family, society and nature.
		CO3	Student will apply the acquired knowledge in the dimensions of the biological, sociological, psychological and legal aspects of gender equality at all four orders of living.
		CO4	Student will be able to analyze how the human values and gender equality will be helping individual in maintaining professional ethics for harmony at all orders of living
23CC3113	CYPECAD	CO1	Understand the user interface, drawing tools, and design environment of CYBERCAD software for 2D and 3D modeling applications.
		CO2	Apply drafting and annotation tools to create technical drawings as per engineering standards using CYBERCAD.
		CO3	Develop and modify structural/architectural components through advanced editing commands and layer management in CYBERCAD.
		CO4	Generate and interpret construction-ready documentation and layouts for real-time industry-based projects using CYBERCAD.
		CO5	Structural Design Using CYPECAD Software
CRTCODL1V2	CRTLST	CO1	Coding
23UC0032	GLBCP	CO1	Evaluate algorithmic approaches to problem-solving by comparing time and space complexities in competitive coding scenarios.
		CO2	Evaluate and optimize code solutions for correctness, efficiency, and scalability under timed contest conditions.
OECS0008	FIT	CO1	Understand the architectural design of a computer and various basic concepts of operating systems
		CO2	Understand programming fundamentals Analyse various software development methodologies
		CO3	Apply the principles of database design and Apply various SQL commands and Transaction Processing.
		CO4	Apply OOP and model for different case studies using UML
OECS0007 "	FUNDAMENTALS OF DBMS	CO1	"Illustrate the functional components of Advanced DBMS and Design an ER Model for a database.
		CO2	"Design a relational model for a database & Implement SQL concepts and relational algebra.
		CO3	"Implement PL/SQL programs, normalization techniques, indexing to construct and access database
		CO4	"Analyze the importance of transaction Processing,

			concurrency control and recovery techniques.
23CE3212	WATER RESOURCE ENGINEERING	CO1	Analyse components of hydrological cycle, hydrograph, and its application
		CO2	Analyse of groundwater, groundwater movement and well hydraulics
		CO3	Analyse and design of canal irrigation methods
		CO4	Analyse and design of dams and reservoirs
23CE3213	DESIGN OF STEEL STRUCTURES	CO1	"Analyse and design bolted and welded connections.
		CO2	"Analyse the single and compound beams as per IS code.
		CO3	"Analyse the simple and built-up columns as per IS code.
		CO4	"Analyse the simple and built-up columns as per IS code.
23STE3304R	BE	CO1	Analysis and Design of slab Culvert and box culvert
		CO2	Analysis and Design of T-Beam
		CO3	"
		CO4	Analysis and designing of special bridges
		CO5	Analysis of bridge elements
		CO6	Analysis of Structural Elements
CRTCODL2V3	CAMPUS RECRUITMENT: CODING SKILLS TRAINING - DATA STRUCTURES	CO1	CRT Coding Phase-2
CRTVQRL2V3	CAMPUS RECRUITMENT: QUANTITATIVE APTITUDE TRAINING	CO1	"CRT Quantitative and Reasoning Module helps students to solve problems Quickly"
23MB0002	PARADIGMS IN MANAGEMENT THOUGHT	CO1	Understand the basic management concepts along with an insight into levels of management.
		CO2	Apply the key contributions of classical approach to Management.
		CO3	Apply Quantitative methods to improve Management performance.
		CO4	Analyze the key contributions of Behavioural and contemporary approaches to Management.
23OEGN02	NCC2	CO1	Define thinking, reasoning, critical thinking and creative thinking
		CO2	To think critically about different life related issues.
		CO3	Think divergently and will try to break functional fixedness.
		CO4	"
		CO5	"
23OEGN03	NCC-3	CO1	Define thinking, reasoning, critical thinking and creative thinking
		CO2	To think critically about different life related issues.
		CO3	Think divergently and will try to break functional

			fixedness.
		CO4	Organizations related to disaster management and their functioning
23MT2005	PSQT	CO1	Make use of probabilistic concepts in a wide spectrum of problems arising in engineering and applied sciences.
		CO2	Test for the relationship between two variables using correlation and regression techniques
		CO3	Apply the role of Statistical tests of significance in solving real world engineering problems
		CO4	"Analyze Stochastic process in terms of Markov chains and compare different Queueing systems.
23MT2005L	PSQT	CO1	Understand the importance of probabilistic concepts in a wide spectrum of problems arising in engineering applied science.
		CO2	Identify the relationship between variables using correlation and regression techniques
		CO3	Explain the role of Statistical tests of significance in solving real world engineering problems
		CO4	To formulate Stochastic process in terms of Markov chains and solve problems in queueing systems, and network
23CE2232F	BMPD	CO1	Understand different types of buildings, building components along with materials used for the construction of buildings
		CO2	Understand building bye-laws for planning and construction of buildings
		CO3	Understand different types of equipment used in construction projects and management of construction projects
		CO4	Apply the techniques required for construction project management.
22UC0022	SIL-2	CO1	Extension Activities and Social Outreach activities
		CO2	Technology Clubs
		CO3	Liberal arts creative arts and hobby clubs
		CO4	Innovation, incubation & Entrepreneurship
		CO5	Health & Well Being (HWB)
CRTCODL1V1	CRTCOD	CO5	Evaluating problem-solving skills using both the languages and data structures in an integrated manner, ensuring that students can apply their knowledge to practical, algorithmic challenges.
CRTCODL2V2	CRTCOD	CO5	Evaluating problem-solving skills using both the languages and data structures in an integrated manner, ensuring that students can apply their knowledge to practical, algorithmic challenges.
CRTVQRL1V1	CRVAT	CO5	CRT
22UC1203	DTI	CO1	Understand the importance of Design thinking process for contextualized problems.