

R.M.K. ENGINEERING COLLEGE
(An Autonomous Institution)
RSM Nagar, Kavaraipettai – 601 206

Department of Civil Engineering

Course Outcomes - ODD Semester 2022-23

Sl. No.	Semester	Theory / Practical	Course Code / Course Name
1	3	Theory	20MA301-Transforms and Partial Differential Equations
2	3	Theory	20CE301-Mechanics of Materials
3	3	Theory	20CE302-Fluid Mechanics
4	3	Theory	20CE303- Engineering Surveying
5	3	Theory	20CE304- Construction Techniques and Practices
6	3	Theory	20GE301- Universal Human Values-II Understanding Harmony
7	3	Practical	20CE311- Computer aided Building drawing
8	3	Practical	20CE312- Surveying Laboratory
9	3	EEC	20CE313- Design Thinking and Mini Project
10	3	EEC	20CS313-Aptitude and Coding Skills - I
11	5	Theory	20CE501-Basic Reinforced Concrete Design
12	5	Theory	20CE502-Structural Analysis
13	5	Theory	20CE503-Environmental Engineering I
14	5	Theory	20CE504-Foundation Engineering
15	5	Theory	20CE505-Railways, Airports, Docks and Harbour Engineering.
16	5	Theory	20CE901-Formwork Engineering (Professional Elective)
17	5	Practical	20CE511-Geotechnical Engineering Laboratory
18	5	Practical	20CE512-Concrete and Highway Engineering Laboratory
19	5	EEC	20CS512-Advance Aptitude and Coding Skills - I
20	5	EEC	20CE513-Internship
21	7	Theory	CE8701- Estimation, Costing and Valuation Engineering
22	7	Theory	CE8702-Railways, Airports, Docks and Harbour Engineering
23	7	Theory	CE8703-Structural Design and Drawing
24	7	Theory	CE8011-Design of Prestressed Concrete Structures (Elective)
25	7	Theory	OML7501-Testing of Materials (Elective)
26	7	Practical	CE8711- Creative And Innovative Project(Activity Based - Subject Related)
27	7	Practical	CE8712- Industrial Training (4 Weeks During VI Semester – Summer vacation)

Third Semester B.E.

20MA301-Transforms and Partial Differential Equations

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Employ the Fourier series concept in Engineering Problems.
CO2	Identify the solution of Fourier transform in continuous time signals
CO3	Elucidate the difference equation using Z-transform.
CO4	Compute the solutions of the partial differential equation.
CO5	Utilize the Fourier series for heat and wave equations.

20CE301-Mechanics of Materials

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the concepts of stress and strain in prismatic and composite bars, thermal stresses, principal stresses and principal planes.
CO2	Determine Shear force, bending moment and bending stress distribution across various sections of beams based on theory of simple bending.
CO3	Analyze flexural members for shear stress distribution across various sections.
CO4	Determine slope and deflection of determinate beams using different methods.
CO5	Apply theory of torsion in design of circular shafts and helical springs.
CO6	Analyze pin jointed plane and space trusses using different methods.

20CE302-Fluid Mechanics

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Demonstrate the difference between solid and fluid, its properties and behavior in static conditions.
CO2	Apply the conservation laws applicable to fluids through fluid kinematics and dynamics.
CO3	Relate the parameters involved in the given fluid phenomenon and predict the performances of prototype by model studies
CO4	Estimate losses in pipelines for both laminar and turbulent conditions.
CO5	Analyze flow through pipes connected in series and in parallel.
CO6	Explain the concept of boundary layer and its application to find the drag force exerted by the fluid on the flat solid surface.

20CE303- Engineering Surveying

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Summarize the procedure for measuring 2-D Cartesian coordinates, horizontal angle and vertical angles using various instruments for engineering projects.
CO2	Apply the principle of levelling to compute orthometric heights relative to a vertical survey datum with different instruments.
CO3	Identify solutions for erroneous measurements of a survey network.
CO4	Describe the methods of sounding techniques conducted during hydrographic surveys.
CO5	Determine the absolute position of any object on the earth's surface to various celestial bodies.
CO6	Outline the concept, principles and applications of advanced data capturing methods using total station and GPS.

20CE304- Construction Techniques and Practices

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Differentiate the Structural Systems, including construction methods of various structures.
CO2	Summarize various techniques and practices involved in construction of masonry structures.
CO3	Suggest the various techniques for substructure construction.
CO4	Explain the methods and techniques involved in the construction of various types of super structures.
CO5	Discuss the selection and usage of various equipment in each stage of construction.
CO6	Identify the recent advancements in techniques involved in construction.

20GE301- Universal Human Values-II Understanding Harmony

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	would become more aware of themselves, and their surroundings (family, society, nature);
CO2	would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.
CO3	would have better critical ability.
CO4	Would become sensitive to their commitment towards what they have understood (human values, human relationship and human society).
CO5	would be able to apply what they have learnt to their own self in different day-to-day settings in real life, at least a beginning would be made in this direction.
CO6	Identify the recent advancements in techniques involved in construction.

Laboratory

20CE311- Computer aided Building drawing

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Plan a building according to the requirements of National Building Code
CO2	Prepare the layout and sectional views of a building manually.
CO3	Apply the AUTOCAD commands to generate different views of joinery details.
CO4	Draft the plan, elevation and sectional views of the given structure using AUTOCAD.
CO5	Utilize the knowledge on the usage of modern tools.
CO6	Develop technical communication skill in the form of communicative drawing.

20CE312- Surveying Laboratory

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Interpret survey data to compute area and volume.
CO2	Infer the plan of a building and transfer a building layout to the field.
CO3	Measure Horizontal angle and vertical angle using different instruments.
CO4	Construct a level circuit and obtain Reduced Levels of various Points on the surface of the earth with respect to specific datum or Bench Mark.
CO5	Record geodetic data and perform analysis for survey problems using electronic instruments.
CO6	Develop communication skills, including those involved in working in groups.

20CE313- Design Thinking and Mini Project

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Apply fundamental engineering knowledge to the identified problem.
CO2	Analyze and design the technical aspects of the project with comprehensive and systematic approach using new technology.
CO3	Develop projects with sustainability, understanding the societal and environmental importance.
CO4	Work as an individual or as a team in development of technical projects.
CO5	Comprehend and write reports effectively on the project related activities and findings.
CO6	Apply ethical principles in all the stages of the project and explore its advancements.

20CS313- Aptitude and Coding Skills - 1

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Develop vocabulary for effective communication and reading skills.
CO2	Build the logical reasoning and quantitative skills.
CO3	Develop error correction and debugging skills in programming.

Fifth Semester B.E

20CE501-Basic Reinforced Concrete Design

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Explain various design philosophies for the design of RC elements
CO2	Apply limit state concepts to design rectangular and flanged beams
CO3	Design different types of slabs and staircase using limit state method.
CO4	Design of columns subjected to various loading condition using limit state method.
CO5	Design isolated footing and combined footing using limit state method.
CO6	Appraise good detailing practices followed and sketch its details.

20CE502-Structural Analysis

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the concept of indeterminate structures and analyse the structure using various methods.
CO2	Analyse continuous beams, pin-jointed indeterminate plane frames and rigid plane frames using strain energy method
CO3	Analyse continuous beams and rigid frames using slope deflection method
CO4	Analyse continuous beams and rigid frames with and without sway using moment distribution method.
CO5	Analyse indeterminate pin jointed plane frames, continuous beams and rigid frames using matrix flexibility method.
CO6	Analyse indeterminate pin jointed plane frames, continuous beams and rigid frames using matrix stiffness method.

20CE503-Environmental Engineering I

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the water supply system, water sources and water quality characteristics and standards.
CO2	Determine the demand of water for the current and forecasted population.
CO3	Explain the collection and conveyance of water.
CO4	Design, operate and maintain water treatment plants.
CO5	Describe advanced water treatment processes to improve the water quality.
CO6	Design the water distribution system, connection, fixtures and fittings.

20CE504-Foundation Engineering

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the importance of soil exploration for any civil engineering construction
CO2	Estimate bearing capacity of soils and the probable settlement of foundations
CO3	Decide proportioning of shallow foundation under different soil conditions and also get exposed in foundation analysis
CO4	Design raft and floating foundations under weak compressible soils.
CO5	Determine load carrying capacity and settlement of pile foundation under various soil conditions
CO6	Calculate earth pressure for granular and cohesive soils and carryout stability analysis on retaining walls.

20CE505-Railways, Airports, Docks and Harbour Engineering

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Describe the concepts and elements in planning, design and construction of railways.
CO2	Apply appropriate methods for construction and maintenance of railway tracks and other infrastructure.
CO3	Identify the concepts and elements in planning and selection of site for airport.
CO4	Analyze and design the runway length and evaluate the orientation of runways.
CO5	Explain the terminologies and infrastructures in harbour engineering.
CO6	Understand types of coastal protection structures and coastal regulations.

20CE901-Formwork Engineering (Professional Elective)

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Select suitable material for different formwork systems.
CO2	Identify suitable type of formwork and plan for material, labour and equipment.
CO3	Calculate the pressure on formwork under different loading conditions.
CO4	Design formwork system for horizontal structural members.
CO5	Design formwork system for vertical structural members.
CO6	Assess the failures in formwork system and provide remedial measures.

Laboratory

20CE511-Geotechnical Engineering Laboratory

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Determine the index properties of coarse and fine-grained soils
CO2	Perform compaction tests on coarse and fine-grained soils.
CO3	Carryout permeability tests on granular and cohesive soils for the determination of coefficient of permeability
CO4	Determine the compressibility characteristics of fine-grained soils by conducting one dimensional consolidation tests.
CO5	Compute shear strength of soils by performing direct shear test, triaxial shear test, vane shear test & unconfined compressive tests.
CO6	Classify the type of soil and ascertain the suitability for different types of construction.

20CE512-Concrete and Highway Engineering Laboratory

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Analyze the physical properties of coarse aggregates as per code of practices.
CO2	Examine the strength characteristics of coarse aggregates.
CO3	Determine the various properties of fresh concrete.
CO4	Evaluate the hardened value of concrete cubes, cylinders and prism.
CO5	Assess the different properties of fresh bitumen.
CO6	Determine the hardened properties of bitumen mixes.

20CS512-Advanced Aptitude and Coding Skills - I

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Develop vocabulary for effective communication and reading skills.
CO2	Build the logical reasoning and quantitative skills.
CO3	Develop error correction and debugging skills in programming.

20CS513-Internship

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Bridge the gap between Industrial requirements and academic learning.
CO2	Apply acquired knowledge to real-time applications.
CO3	Carryout multi-disciplinary projects under the guidance of industry and academic supervision
CO4	Extend the knowledge through research and development in specialized areas.
CO5	Understand the intricacies involved in solving complex engineering problems.
CO6	Exposed to industrial culture and team work.

Seventh Semester B.E.

CE8701- Estimation, Costing and Valuation Engineering

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the methods and various types of estimation and estimate the quantities of buildings and special structures.
CO2	Outline the standard data and schedule of rates for labour and materials
CO3	Analyse the Rate and cost estimate for Buildings, canals, and Roads.
CO4	Understand the types of specifications, principles for report preparation, tender notices types.
CO5	Outline the necessity of contract document, bidding and types of contracts.
CO6	Evaluate valuation and rent calculation of land and buildings.

CE8702- Railways, Airports, Docks and Harbour Engineering

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the methods of route alignment and design elements in Railway Planning and Constructions.
CO2	Understand the Construction techniques and Maintenance of Track laying and Railway stations.
CO3	Gain an insight on the planning and site selection of Airport Planning and design.
CO4	Analyze and design the elements for orientation of runways and passenger facility systems.
CO5	Understand the various features in Harbours and Ports, their construction, coastal protection works and coastal Regulations to be adopted.
CO6	Discriminate the various coastal structures like pier, breakwater, wharves, jetties, quays, etc.

CE8703- Structural Design and Drawing

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Design and draw reinforced concrete Cantilever and Counterfort Retaining Walls
CO2	Design and draw flat slab as per code provisions
CO3	Design and draw reinforced concrete and steel bridges
CO4	Design and draw reinforced concrete and steel water tanks
CO5	Design and detail the various steel trusses and gantry girders
CO6	Design and draw RC Solid Slab Bridge

CE8011-Design of Prestressed Concrete Structures (Elective)

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Describe the fundamental principles of pre and post tensioned concrete and compute loss of stresses and deflection of prestressed members
CO2	Design of pre and post tensioned concrete Sections for flexure and shear as per codal provisions.
CO3	Explain the various methods of design of anchorage zones
CO4	Analysis the stresses in composite sections and Design of composite sections.
CO5	Design of prestressed Concrete water tanks and pipes.
CO6	Design of tension and compression members of PSC sections

OML751-Testing of Materials (Elective)

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Identify suitable testing technique to inspect any industrial component.
CO2	Practice the different mechanical testing techniques and know its applications and limitations
CO3	Practice the different non-destructive testing techniques and know its applications and limitations
CO4	Practice the different material characterization techniques and know its applications and limitations
CO5	Practice the different Thermal Testing techniques and know its applications and Limitations
CO6	Practice the different chemical Testing techniques and know its applications and Limitations

Laboratory

CE8712- Industrial Training (4 Weeks During VI Semester – Summer)

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	The intricacies of implementation textbook knowledge into practice
CO2	The concepts of developments and implementation of new techniques

R.M.K. ENGINEERING COLLEGE
(An Autonomous Institution)
RSM Nagar, Kavaraipettai – 601 206

Department of Civil Engineering

Course Outcomes - Even Semester 2022-23

Sl. No.	Semester	Theory / Practical	Course Code / Course Name
1	4	Theory	20MA404-Numerical Methods
2	4	Theory	20CE401- Advanced Mechanics of Materials
3	4	Theory	20CE402- Applied Hydraulic Engineering
4	4	Theory	20CE403- Concrete Technology
5	4	Theory	20CE404- Soil Mechanics
6	4	Theory	20CE405- Highway and Pavement Engineering
7	4	Practical	20CE411-Strength of Materials Laboratory
8	4	Practical	20CE412-Hydraulic Engineering Laboratory
9	4	EEC	20CS414-Aptitude and Coding Skills - II
10	6	Theory	20CE601-Advanced Reinforced Concrete Design
11	6	Theory	20CE602-Advanced Structural Analysis
12	6	Theory	20CE603-Environmental Engineering II
13	6	Theory	20CE604-Design of Steel Structures
14	6	Theory	20CE907-Ground Improvement Techniques (Professional Elective)
15	6	Theory	20ME006-Testing of Materials
16	6	Practical	20CE611- Environmental Engineering Laboratory
17	6	Practical	20CE612- Building Information Modeling and Environmental Engineering Drawing
18	6	Practical	20CS614-Advanced Aptitude and Coding Skills - II
19	8	Theory	GE 8076- Professional Ethics in Engineering (Elective)
20	8	Theory	CE 8020- Maintenance, Repair and Rehabilitation of Structures (Elective)
21	8	Practical	CE 8811-Project Work

Fourth Semester B.E.

20MA404 - Numerical Methods

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Compute the solutions of algebraic, transcendental and the system of equations.
CO2	Implement the numerical techniques of interpolation in equal and unequal intervals.
CO3	Apply the numerical techniques of differentiation and integration for engineering problems.
CO4	Apply the various techniques and methods for solving first and second order ordinary Differential equations.
CO5	Solve the partial differential equations with initial and boundary conditions by using certain techniques with engineering applications.

20CE401 - Advanced Mechanics of Materials

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Determine the strain energy and deflection of beams, frames and trusses using energy principles.
CO2	Analyze propped cantilever, fixed beams and continuous beams and draw shear force and bending moment diagrams.
CO3	Determine the load carrying capacity of long and short columns and stresses in thin cylinders, thick cylinders and spherical shells.
CO4	Determine principal stresses and principal planes in three-dimensional state of stress.
CO5	Apply various failure theories to determine the critical stress which governs the design.
CO6	Analyze the stresses due to unsymmetrical bending of beams and the stresses in curved beams.

20CE402 - Applied Hydraulic Engineering

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Identify different regimes of flow, analysis of uniform flow in steady state conditions with specific energy concept and its application.
CO2	Identify the most economical section for flow in different channel sections.
CO3	Analyse steady and gradually varied flow, water surface profiles and its length calculation using direct and standard step methods.
CO4	Differentiate the types of hydraulic jumps and estimating energy loss in hydraulic jump with exposure to positive and negative surges.
CO5	Design turbines and explain the working principle with characteristic curves.
CO6	Differentiate pumps and explain the working principle with characteristic curves.

20CE403- Concrete Technology

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Describe the requirements of cement, aggregates and water for making concrete.
CO2	Summarize the effect of admixtures on properties of concrete.
CO3	Apply the concept of mix proportioning using different mix design methods.
CO4	Classify the properties of concrete at fresh and hardened state.
CO5	Explain the importance and application of special concretes.
CO6	Identify and carry out tests relevant to the use of concrete on site.

20CE404 - Soil Mechanics

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Characterize and Classify soils.
CO2	Interpret the role of water in soil behaviour and evaluation of geostatic stresses, permeability and quantity of seepage.
CO3	Explain the stress distribution under applied loads.
CO4	Analyze and compute the consolidation settlements.
CO5	Identify the shear strength parameters for field conditions.
CO6	Assess the stability methods of both finite and infinite slopes.

20CE405 - Highway and Pavement Engineering

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Describe the significance of highway planning, alignment and relate the principles of surveying to perform a route survey.
CO2	Apply the knowledge of engineering fundamentals in designing the geometric elements for an efficient highway network.
CO3	Design flexible and rigid pavements to meet specified needs of safety, efficiency and sustainability by adopting IRC design standards.
CO4	Demonstrate the quality tests of highway construction materials used in pavements.
CO5	Explain the construction practices of pavements and highway drainage system.
CO6	Evaluate the pavement for various distress and suggest appropriate strengthening techniques.

20CE411 - Strength of Materials Laboratory

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Conduct deflection test on beams and springs.
CO2	Carryout tests on mild steel rod for shear, torsion and tension.
CO3	Perform compression tests on concrete.
CO4	Compute impact strength of rods by performing impact tests.
CO5	Identify hardness of metals by conducting hardness tests.
CO6	Draw shear force and bending moment diagrams of given loading using open-source simulation software.

20CE412 - Hydraulic Engineering Laboratory

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Measure flow in pipes.
CO2	Compute major and minor losses in pipe flow.
CO3	Determine the performance characteristics of roto-dynamic pumps.
CO4	Determine the performance characteristics of positive displacement pumps.
CO5	Evaluate the performance characteristics of various turbines.
CO6	Work in groups and as an individual and document results.

20CS414 – Aptitude and Coding Skills II

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Develop advanced vocabulary for effective communication and reading skills.
CO2	Build an enhanced level of logical reasoning and quantitative skills.
CO3	Develop error correction and debugging skills in programming.
CO4	Apply data structures and algorithms in problem solving.

Sixth Semester B.E.

20CE601-Advanced Reinforced Concrete Design

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Design cantilever and counterfort retaining walls.
CO2	Design various types of water tanks.
CO3	Interpret the characteristics of yield line for slabs of various geometric shapes.
CO4	Design interior and exterior panel of flat slab.
CO5	Outline the behavior of deep beams and design them.
CO6	Predict the deflection and crack width criteria of beams.

20CE602-Advanced Structural Analysis

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Calculate critical stress resultants for statically determinate structures using influence line diagram.
CO2	Understand Muller Breslau principle and draw the influence lines for statically indeterminate beams.
CO3	Analyse three hinged, two hinged and fixed arches.
CO4	Analyse suspension bridges with stiffening girders.
CO5	Analyse beams and rigid frames using the concept of plastic analysis.
CO6	Understand the concept of finite element analysis.

20CE603-Environmental Engineering II

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the characteristics and composition of sewage for the estimation of sewage generation.
CO2	Explain the concept of sewer design and testing methodologies.
CO3	Design the unit operations in sewage treatment system.
CO4	Appraise self-purification of streams and sludge disposal methods.
CO5	Summarize advanced waste water treatment processes.
CO6	Apply various sewage and sludge disposal methods for industrial applications.

20CE604-Design of Steel Structures

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the properties of steel sections and the concept of limit state method of design.
CO2	Design bolted and welded connections for steel structures.
CO3	Design tension members with the knowledge of shear lag effect.
CO4	Design axially loaded columns, built up columns and column bases.
CO5	Appraise the behavior of beams and design laterally restrained and un-restrained beams.
CO6	Design plate girders and truss members.

20CE907-Ground Improvement Techniques

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Identify issues related to soil deposits and develop strategies to assess them.
CO2	Familiarize with various ground improvement techniques and selection of appropriate methods suited to soil conditions
CO3	Understand dewatering techniques and demonstrate the ability to design a dewatering system according to the requirements.
CO4	Gain knowledge on in-situ treatment of cohesive and cohesionless soils.
CO5	Understand the concept of reinforced earth structures, geosynthetics, geotextiles, geogrids and their applications.
CO6	Gain knowledge on types of grouting and different soil stabilization techniques.

Laboratory

20CE611- Environmental Engineering Laboratory

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Quantify the pollutant concentration in water and wastewater.
CO2	Suggest the type of treatment required and amount of dosage required for the treatment.
CO3	Examine the conditions for the growth of micro-organisms.
CO4	Analyze the physical, chemical and biological characteristics of water and wastewater.
CO5	Quantify the sludge in the waste water treatment.
CO6	Ensure the quality of water according to Indian standards.

20CE612-Building Information Modeling Drawing

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Develop a 3D model using Building Information Modelling.
CO2	Position the structural elements in the 3D BIM model.
CO3	Create a 3D model to furnish the structural details of RC members
CO4	Develop a 3D model for connection detailing of steel members.
CO5	Create a federated model to analyze clashes and to deliver a clash-free model.
CO6	Develop architectural and structural models based on project standards and respective documents for construction stage.

20CS614-Advanced Aptitude and Coding Skills

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Develop advanced vocabulary for effective communication and reading skills.
CO2	Build an enhanced level of logical reasoning and quantitative skills.
CO3	Develop error correction and debugging skills in programming.
CO4	Apply data structures and algorithms in problem solving.

Eight Semester B.E.

GE 8076- Professional Ethics in Engineering (Elective)

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Student will be able to understand the human values and the method of living peacefully
CO2	Student will be able to know the senses of Engineering ethics & ethical theories
CO3	Student will be able to apply the code of ethics in Engineering
CO4	Student will be able to assess the safety and perform risk analysis
CO5	Student will be able to understand the global issues in multinational corporations & computer ethics
CO6	Student will be able to apply ethics in society, discuss the ethical issues related to Engineering & realize responsibilities and rights in the society

CE 8020- Maintenance, Repair and Rehabilitation of Structures

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	The importance of maintenance and assessment method of distressed structures.
CO2	The strength and durability properties, their effects due to climate and temperature.
CO3	recent development in concrete
CO4	the techniques for repair and protection methods
CO5	Understand the behavior of corrosion and its various protection techniques
CO6	Repair, rehabilitation and retrofitting of structures and demolition methods.

CE 8811-Project Work

COs	Course Outcome: The students, after the completion of the course, are expected to
CO	On Completion of the project work students will be in a position to take up any challenging practical problems and find solution by formulating proper methodology.