

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

Department of Civil Engineering

Course Outcomes - ODD Semester 2021-22

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	CE8501-Design of Reinforced Concrete Elements
12	5	Theory	CE8502-Structural Analysis I
13	5	Theory	EN8491-Water Supply Engineering
14	5	Theory	CE8591-Foundation Engineering
15	5	Theory	GE8071-Disaster Management (Professional Elective – I)
16	5	Theory	ORO551-Renewable Energy Sources(Open Elective)
17	5	Practical	CE8511-Soil Mechanics Laboratory
18	5	Practical	CE8512-Water and Waste water Analysis Laboratory
19	5	Practical	CE8513-Survey Camp
20	7	Theory	CE8701- Estimation, Costing and Valuation Engineering
21	7	Theory	CE8702-Railways, Airports, Docks and Harbour Engineering
22	7	Theory	CE8703-Structural Design and Drawing
23	7	Theory	CE8011-Design of Prestressed Concrete Structures (Elective)
24	7	Theory	OML7501-Testing of Materials (Elective)
25	7	Practical	CE8711- Creative And Innovative Project(Activity Based - Subject Related)
26	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

CE8501-Design of Reinforced Concrete Elements

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the various design methodologies for the design of RC elements
CO2	Analyze and design of beams by working stress method and Limit state method.
CO3	Know the analysis and design of flanged beams by limit state method and design of beams for shear, bond and torsion.
CO4	Design the various types of slabs and staircase by limit state method.
CO5	Design columns for axial, uniaxial and biaxial eccentric loadings.
CO6	Design of footing by limit state method.

CE8502-Structural Analysis I

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

EN8491-Water Supply Engineering

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	an insight into the structure of drinking water supply systems, including water transport, treatment and distribution
CO2	an understanding of water quality criteria and standards, and their relation to public health
CO3	the knowledge in various unit operations and processes in water treatment
CO4	an ability to design the various functional units in water treatment
CO5	the ability to design and evaluate water supply project alternatives on basis of chosen criteria
CO6	The ability to understand modern water treatment principles and should be able to cope with the basic design and operation of unit processes for conventional and advanced water treatment.

CE8591-Foundation Engineering

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the site investigation, methods and sampling.
CO2	Get knowledge on bearing capacity and testing methods.
CO3	Analyze and compute the magnitude of settlement of foundations on granular and clay deposits.
CO4	Design shallow footings.
CO5	Determine the load carrying capacity, settlement of pile foundation.
CO6	Determine the earth pressure on retaining walls and analysis for stability.

GE8071-Disaster Management (Professional Elective – I)

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Classify the various types of disaster and providing exposure to mitigation measures
CO2	Understand the Phases of Disaster management cycle and the approaches to disaster risk reduction
CO3	Analyse the impacts of disaster and vulnerability factors
CO4	Understand the management strategies in components of disaster relief.
CO5	To get exposure on technologies to assess and manage the risks from disaster
CO6	Assess the cast studies of natural and man-made disasters

ORO551-Renewable Energy Sources(Open Elective)

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understanding the physics of solar radiation.
CO2	Ability to classify the solar energy collectors and methodologies of storing solar energy.
CO3	Knowledge in applying solar energy in a useful way.
CO4	Knowledge in wind energy and biomass with its economic aspects.
CO5	Knowledge in capturing and applying other forms of energy sources like wind, biogas and geothermal energies.
CO6	To design a Solar Home system understanding the power consumption and requirements.

Laboratory

CE8511-Soil Mechanics Laboratory

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Students are able to conduct tests to determine both the index and engineering properties of soils
CO2	Able to characterize the soil based on their properties.

CE8512-Water and Waste water Analysis 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

CE8513-Survey Camp

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Determine the area of traverse using Total station and GPS
CO2	Plot contours and the undulating ground surface.
CO3	Perform highway alignment and set out curves for new roads.
CO4	Handle total station and do field observation using it.
CO5	Participate as a team and work with fellow mates in carrying out the surveying of Sun observation to determine azimuth

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 contract.
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
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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

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Course Outcomes - Even Semester 2021-22

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	CE 8601-Design of Steel Structures
11	6	Theory	CE 8602-Structural Analysis – II
12	6	Theory	CE 8603-Irrigation Engineering
13	6	Theory	CE 8604-Highway Engineering
14	6	Theory	EN8592-Waste Water Engineering
15	6	Theory	CE 8001-Ground Improvement Techniques (Elective 1)
16	6	Practical	CE 8611- Highway Engineering Laboratory
17	6	Practical	CE 8612- Irrigation and Environmental Engineering Drawing
18	6	Practical	HS 8581-Professional Communication
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	Evaluate the performance characteristics of various turbines.

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.
CO5	Evaluate the performance characteristics of various turbines.
CO6	Evaluate the performance characteristics of various turbines.

Sixth Semester B.E.

CE 8601-Design of Steel Structures

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Understand the concepts of various design philosophies
CO2	Conceptualize the design of structural members using working stress method
CO3	Design common bolted and welded connections for steel structures
CO4	Design tension members and understand the effect of shear lag.
CO5	Understand the design concept of axially loaded columns and column base connections.
CO6	Understand specific problems related to the design of laterally restrained and unrestrained steel beams.

CE 8602-Structural Analysis – II

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Draw influence lines for statically determinate structures and calculate critical stress resultants.
CO2	Understand Muller Breslau principle and draw the influence lines for statically indeterminate beams.
CO3	Analyse of three hinged, two hinged and fixed arches.
CO4	Analyse the suspension bridges with stiffening girders

CO5	Understand the concept of Plastic analysis and the method of analyzing beams and rigid frames.
CO6	Understand the concept of analysis of indeterminate beams using influence line diagrams and plastic analysis method.

CE 8603-Irrigation Engineering

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	Have knowledge and skills on crop water requirements.
CO2	Understand the methods and management of irrigation.
CO3	Gain knowledge on types of Impounding structures
CO4	Understand methods of irrigation including canal irrigation.
CO5	Get knowledge on water management on optimization of water use.
CO6	Gain knowledge on Participatory irrigation management.

CE 8604-Highway Engineering

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Get knowledge on planning and aligning of highway.
CO2	Geometric design of highways
CO3	Design flexible and rigid pavements.
CO4	Gain knowledge on Highway construction materials, properties, testing methods
CO5	Understand the concept of pavement management system, evaluation of distress.
CO6	Outline the maintenance strategies of highways.

EN8592-Waste Water Engineering

COs	Course Outcome: The students, after the completion of the course, are expected to
CO1	An ability to estimate sewage generation and design sewer system including sewage pumping stations
CO2	The required understanding on the characteristics and composition of sewage, self-purification of streams
CO3	An ability to perform basic design of the unit operations and processes that are used in sewage treatment
CO4	Understand the standard methods for disposal of sewage.
CO5	Gain knowledge on sludge treatment and disposal.
CO6	Understanding the different sludge management methods involved in waste water treatment.

CE 8001-Ground Improvement Techniques (Elective 1)

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Gain knowledge on methods and selection of ground improvement techniques.
CO2	Understand dewatering techniques and design for simple cases.
CO3	Get knowledge on insitu treatment of cohesionless and cohesive soils.
CO4	Understand the functions of Geosynthetics in Engineering constructions.
CO5	Understand the concept of earth reinforcement and design of reinforced earth.
CO6	Get to know types of grouts and grouting technique.

Laboratory

CE 8611- Highway Engineering Laboratory

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Student knows the techniques to characterize various pavement materials through relevant tests.

CE 8612-Irrigation and Environmental Engineering Drawing

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	The students after completing this course will be able to design and draw various units of Municipal water treatment plants and sewage treatment plants.

HS 8581-Professional Communication

Cos	Course Outcome: The students, after the completion of the course, are expected to
CO1	Make effective presentations
CO2	Participate confidently in Group Discussions.
CO3	Attend job interviews and be successful in them.
CO4	Develop adequate Soft Skills required for the workplace

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.