



ADITYA COLLEGE OF ENGINEERING

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Class: I Year I Semester

Course Name with Code	Course Outcome	
Mathematics-I (C111)	CO1	Discuss the Ratio test and Mean value theorems
	CO2	Solve First order Linear differential equations
	CO3	Solve the Higher order non-homogeneous Differential Equations
	CO4	Model physical phenomena of LCR series circuit and Simple Harmonic Motion.
	CO5	Determine the extreme values for the function of two variables.
	CO6	Compute double and triple integrals to find Area and Volume.
Communicative English (C112)	CO1	Understand past culture, tradition, speaking English in real life situations
	CO2	Infer and interpret the admonitions of a father to his daughter, answering a series of questions,
	CO3	Recognize Stephen Hacking's contribution, writing letters on various contexts, writing cover letters,
	CO4	Understand Wangari Maathai's hard work, permissions, requesting, Inviting.
	CO5	Understand formal writing academic proposals, research articles, Technical Vocabulary
	CO6	Understand the importance of soft skills, scientific and Technical English
Engineering Physics (C113)	CO1	Describe various techniques for amplitude modulation and demodulation
	CO2	Differentiate various SSB & DSB modulation and demodulation schemes and their spectral
	CO3	Differentiate various angle modulation and demodulation schemes and their spectral characteristics
	CO4	Describe various functional blocks of radio transmitters and receivers
	CO5	Calculate noise characteristics of various analog modulation methods
	CO6	Differentiate various pulse modulation and demodulation schemes and their spectral characteristics
Engineering Drawing (C114)	CO1	Understand the knowledge of basic geometries, geometric tools, and procedures used in engineering
	CO2	Draw the simple curves of ellipse, cycloid, involutes and construction of scales.
	CO3	Construct the projections of straight lines inclined to one or both the planes.
	CO4	Construct the Projections of planes inclined to one or both the planes.
	CO5	Construct the projection of solids on different orientations
	CO6	Transform the Front, Top & Side views to isometric views and vice-versa
Engineering Geology (C115)	CO1	Identify and classify the geological minerals
	CO2	Measure the rock strengths of various rocks
	CO3	Classify and measure the earthquake prone areas to practice the hazard zonation
	CO4	Classify, monitor and measure the Landslides and subsidence
	CO5	Analyses the ground conditions through geophysical surveys.
	CO6	Investigate the project site for mega/mini civil engineering projects. Site selection for mega engineering
English Communication Skills Lab (C116)	CO1	Identify 44 sounds of language and develop correct pronunciation learning Phonetics
	CO2	Demonstrate language functions: LSRW Skills
	CO3	Develop and practice correct accent, intonation, and rhythm to get acquaintance with language.
	CO4	Develop speaking skills through participation in activities and vocabulary
Engineering Physics Lab (C117)	CO1	Determine wavelength, Thickness, Radius of curvature of lens and dispersive power by using
	CO2	Apply the mechanics concepts/equations to obtain quantitative results like rigidity modulus, Youngs
	CO3	Identify the behavioural aspects of magnetic and electric fields.
	CO4	Estimate Planck's constant through photoelectric effect.
Basics Of Civil Engineering Work Shop Lab (C118)	CO1	Identify various components of a building and give lump-sum estimate.
	CO2	Identify different soils
	CO3	Know various traffic signs & signals
	CO4	Set out a signal room building as per given plan

Course Name with Code	Course Outcome	
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Class: I Year II Semester

Mathematics -II (C121)	CO1	Explain system of linear algebraic equations using Gauss Elimination method
	CO2	Use Cayley-Hamilton theorem to find the inverse and power of a matrix problems
	CO3	Solve the approximate roots of polynomial and transcendental equations by using Iterative methods
	CO4	Solve the system of linear equations using Gauss Jacobi and Gauss-Seidal methods
	CO5	Apply Newton's forward and backward interpolation for equal intervals and Lagrange's formula for unequal intervals
	CO6	Apply Numerical Integral techniques to different Engineering problems
Engineering Chemistry (C122)	CO1	Explain the advantages and limitations of plastics materials and recycling of e-waste.
	CO2	outline the differences between primary and secondary cell and Discuss the reasons for corrosion and
	CO3	Determine the preparation of nano materials and its applications
	CO4	Determine the applications of commonly used industrial materials.
	CO5	Discuss the fuels which are used commonly and their economics, advantages and limitations
	CO6	Explain the impurities present in raw water, problems associated with them.
Engineering Mechanics (C123)	CO1	Understand concepts of force and friction, direction and its application.
	CO2	Apply the static equilibrium equations for the coplanar and non-coplanar system. Analysis of truss .
	CO3	Apply the concept of centroid and centre of gravity to determine the moment of inertia
	CO4	Understand the concepts of Rectilinear and Curvilinear motion of a particle with and without considering the forces.
	CO5	Analyze the rigid bodies under translation and rotation with and without considering the forces.
	CO6	Understand the concepts of Work Energy method and Impulse momentum method
Programming for Problem Solving using C (C124)	CO1	Apply the fundamentals of C Programming for Problem solving.
	CO2	Identify the appropriate Decision statement and Loops for a given Problem.
	CO3	Make use of Arrays and Strings to solve the problems in C.
	CO4	design and implement programs to analyze the different pointer applications.
	CO5	Develop solutions for problems using Functions..
	CO6	Develop solutions for problems using Files
Building Material And Concrete Technology (C125)	CO1	To introduce various building construction materials
	CO2	To describe various properties of ingredients of concrete
	CO3	To explain various properties and tests of fresh and Hardened Concrete
	CO4	Know various engineering properties of building construction materials and suggest their suitability
	CO5	Identify the functional role of ingredients of concrete and apply this knowledge to concrete mix design
	CO6	Acquire and apply fundamental knowledge in the fresh and hardened properties of concrete
Engineering Chemistry Lab (C126)	CO1	Explain volumetric analysis with different indicators
	CO2	Calculate the Hardness of water by EDTA
	CO3	Calculate the Alkalinity of water sample by HCl solution
	CO4	Analyze the quantity of ions in organic solutions
Programming for Problem Solving using C Laboratory (C127)	CO1	Knowledge on various concepts of C language.
	CO2	Design and development of C program using loops
	CO3	Design and development of C problem solving skills using arrays
	CO4	Design and develop programs on functions
Building Planning And Computer Aided	CO1	Perform basic commands of any suitable CAD software to draw 2D drawings
	CO2	Interpret the conventions, signs and symbols from a given drawing

Course Name with Code	Course Outcome	
Building Drawing(C127)	CO3	Prepare line plans of residential and public buildings using principles of planning
	CO4	Prepare submission and working drawing from the given requirement for Load Bearing and Framed

Class: II Year I Semester:

Course Name with Code	Course Outcome	
Mathematics-III (Vector Calculus, Transforms and PDE) (C211)	CO1	Interpret the physical meaning of different operators such as gradient, curl and divergence (L5)
	CO2	Estimate the work done against a field, circulation and flux using vector calculus (L5)
	CO3	Estimate the work done against a field, circulation and flux using vector calculus (L5)
	CO4	Find or compute the Fourier series of periodic signals (L3)
	CO5	Know and be able to apply integral expressions for the forwards and inverse Fourier transform to a
	CO6	Estimate the work done against a field, circulation and flux using vector calculus (L5)
Strength of materials I (C212)	CO1	Demonstrate the relationships between loads, member forces and deformations and material stresses
	CO2	Compare the shear force and bending moment diagram on beams under varying load and support
	CO3	Determine the bending stresses in beams subjected to bending moment
	CO4	Calculate the shear Stress across the depth of beam subjected to shear force
	CO5	Analyse the deflections in beams under various loading and support Conditions
	CO6	Analyse the stresses in thin vessels and thick vessels
Fluid Mechanics (C213)	CO1	Understand the various properties of fluids and their influence on fluid motion and analyse a variety of
	CO2	Calculate the forces that act on submerged planes and curves
	CO3	Ability to analyse various types of fluid flows.
	CO4	Apply the integral forms of the three fundamental laws of fluid mechanics to turbulent and laminar flow
	CO5	Able Measure the quantities of fluid flowing in pipes, tanks and channels.
	CO6	Ability to analyse various types of fluid flows.
Surveying and Geometrics (C215)	CO1	Apply the knowledge to calculate angles, distances and levels
	CO2	Identify data collection methods and prepare field notes
	CO3	Understand the working principles of survey instruments, measurement errors and corrective measures
	CO4	Interpret survey data and compute areas and volumes, levels by different type of equipment. relate the
	CO5	relate the knowledge to the modern equipment and methodologies.
	CO6	Understand the working principles of survey instruments, measurement errors and corrective measures
Highway Engineering (C214)	CO1	Plan high way network for a given area.
	CO2	Determine Highway alignment and design highway geometrics.
	CO3	Design Intersections and prepare traffic management plans
	CO4	Judges suitability of pavement materials
	CO5	Design flexible and rigid pavements
	CO6	Judges suitability of pavement materials
Concrete Technology Lab (C216)	CO1	Determine consistency and fineness of cement.
	CO2	Determine specific gravity and soundness of cement.
	CO3	Determine workability of cement concrete by compaction factor, slump and Vee – Beetest
	CO4	Determine flakiness and elongation index of aggregates
	CO5	Understand non-destructive testing procedures on concrete.
	CO6	Determine flakiness and elongation index of aggregates
Highway Engineering Lab (C217)	CO1	Test aggregates and judge the suitability of materials for the road construction
	CO2	Test the given bitumen samples and judge their suitability for the road construction
	CO3	Obtain the optimum bitumen content for Bituminous Concrete
	CO4	Determine the traffic volume, speed, and parking characteristics.

Course Name with Code	Course Outcome	
	CO5	Draw highway cross sections and intersections
	CO6	Determine the traffic volume, speed, and parking characteristics.
Surveying Field Work-I (Lab) (C218)	CO1	To train the students handling instruments used for surveying.
	CO2	To make the students to understand various problems in linear and angular measurement associated
	CO3	To provide hands on exercise and make the students to learn the basics of field-oriented problems in
	CO4	To understand the area calculation and volume calculation
	CO5	To learn various method of taking levels and reducing levels.
	CO6	To understand the area calculation and volume calculation

Class: II Year II Semester:

Course Name with Code	Course Outcome	
Complex Variables and Statistical Methods (C221)	CO1	Determine whether a given continuous function is analytic and find the differentiation and
	CO2	Make use of the Cauchy residue theorem to evaluate certain integrals
	CO3	Explain the concept of probability and probability distributions
	CO4	Apply the concept of sampling distributions of sample mean and variance to identify unusual samples
	CO5	Describe point and interval estimation and determine confidence limits for the population mean and
	CO6	Explain the logic behind and process of hypothesis testing and Show conclusions by carry out
Strength of materials II (C222)	CO1	Calculate the complex stresses in engineering components.
	CO2	Determine the effect of torsion on springs and shaft.
	CO3	Determine the load carrying capacity of columns
	CO4	Determine the combined effect of direct and bending stresses on different engineering
	CO5	Analyze members when subjected to unsymmetrical bending.
	CO6	Determine the combined effect of direct and bending stresses on different engineering
Hydraulics and Hydraulic Machinery (C223)	CO1	Solve uniform and non-uniform open channel flow problems.
	CO2	Apply the principals of dimensional analysis and similitude in hydraulic model testing.
	CO3	Understand the working principles of various hydraulic machineries and pumps.
	CO4	Solve uniform and non-uniform open channel flow problems.
	CO5	Apply the principals of dimensional analysis and similitude in hydraulic model testing.
	CO6	Understand the working principles of various hydraulic machineries and pumps.
Environmental Engineering (C224)	CO1	Water Demand and Quantity Estimation
	CO2	Treatment and Disinfection of water
	CO3	Collection, Conveyance and distribution of Water
	CO4	Estimation of sewage flow and storm water drainage
	CO5	Characteristics of sewage, Treatment of Sewage and it's disposal
	CO6	Collection, Conveyance and distribution of Water
Managerial Economics & Financial Analysis (C225)	CO1	Outline the Managerial Economic concepts and techniques for optimum usage of resources and
	CO2	Classify the various demand forecasting methods and elasticity of demand for forecasting
	CO3	Analyze the concept of production function and Break-even point for estimation of output, cost and
	CO4	Explain the various market structures and forms of business for estimating demand and
	CO5	Utilize the process of Journal, Ledger, Trail balance, final accounts and ratio analysis to assess
	CO6	Apply the various techniques of capital budgeting for estimation of capital assets
ENVIRONMENTAL ENGINEERING LAB (C226)	CO1	Estimate some important characteristics of water, wastewater, and soil in the laboratory
	CO2	Draw some conclusion and decide whether the water is suitable for Drinking/Construction /
	CO3	Estimate Chloride, EC and Salinity of Soil and suggest their suitability for Construction/Agriculture
	CO4	Estimation of the strength of the sewage in terms of BOD and COD and Decide whether the water body
	CO5	Demonstration of various instruments used in testing of water and soil and study of Drinking water

Course Name with Code	Course Outcome	
	CO6	Estimation of the strength of the sewage in terms of BOD and COD and Decide whether the water body
Strength of materials Lab (C227)	CO1	Develop the stress-strain relationship for steel specimen.
	CO2	Determine modulus of rigidity of spring.
	CO3	Determine the Brinell & Rockwell hardness number of the given specimen.
	CO4	Determine the impact resistance of steel specimen by charpy&izod tests.
	CO5	Determine the young's modulus of beam material from elastic curve of a beam.
	CO6	Determine the Compressive and shear strength of a specimen.
Fluid Mechanics & Hydraulic Machinery Lab (C228)	CO1	Determine the fluid pressure and use various devices for measuring fluid pressure
	CO2	Calculate hydrostatic force and use of law of conservation mass to fluid flow.
	CO3	Apply Bernoulli's equation to fluid flow problems and boundary layer theory to determine lift and drag
	CO4	Apply appropriate equations and principles to analyze pipe flow problems.
	CO5	Apply Bernoulli's equation to fluid flow problems and boundary layer theory to determine lift and drag
	CO6	Apply appropriate equations and principles to analyze pipe flow problems.

Class: III Year I Semester:

Course Name with	Course Outcome	
Structural Analysis (C311)	CO1	Distinguish between the determinate and indeterminate structures
	CO2	Behavior of structures due to the expected loads, including the moving loads, acting on the
	CO3	Behavior of structures due to the expected loads, including the moving loads, acting on the
	CO4	Analyze the continuous beams using various methods -, three moment method, slope deflection
	CO5	Draw the influence line diagrams for various types of moving loads on beams/bridges.
	CO6	Analyze the loads in Pratt and Warren trusses when loads of different types and spans are passing over
DESIGN AND DRAWING OF REINFORCED CONCRETE STRUCTURES (C312)	CO1	Workondifferenttypesofdesign methods
	CO2	Carryoutanalysisanddesignofflexuralmembersanddesign for shear,bondandtorsion
	CO3	Designdifferenttypeofslabs
	CO4	Designdifferenttypeofcompressionmembers
	CO5	Designdifferenttypeoffootings
	CO6	Designdifferenttypeofcompressionmembers
Geotechnical engineering -1 (C313)	CO1	know the definition of the various quantities related to soil mechanics and establish their inter-
	CO2	know the methods of determination of the various index properties of the soils and classify the soils
	CO3	know the importance of the different engineering properties of the soil such as permeability
	CO4	know the importance of the different engineering properties of the soil such as compaction,
	CO5	know the importance of the different engineering properties of the soil such as shear strength and
	CO6	know the importance of the different engineering properties of the soil such as compaction,
Lab Survey Camp (Field work) (C314)	CO1	To train the students for Theodolite Survey: Determining the Horizontal and Vertical Angles by the
	CO2	To make the students to understand various Tachometric Survey like Heights and distance problems
	CO3	To make the students to learn One Exercise on Curve setting.
	CO4	To understand learn One Exercise on contours.
	CO5	To make the students to learn One Exercise on Curve setting.
	CO6	To learn various method of Total Station.
GEOTECHNICAL ENGINEERING LAB (C317)	CO1	Recall the behavior of soil with respect to water content (moisture content) for characterizing
	CO2	Classify the soils according to their grain size for determining the coefficient of uniformity and
	CO3	Determine the maximum dry density through compaction and consolidation to increase the
	CO4	Recall the importance of compressibility of the soil medium concept for taking necessary action
	CO5	Evaluate the strength of soil sub-grades and base course materials and enable appropriate
	CO6	Recall the importance of compressibility of the soil medium concept for taking necessary action

Course Name with Code	Course Outcome	
Remote Sensing and Gis (C315)	CO1	Remote Sensing and Gis
	CO2	Interpret the aerial photographs and satellite imageries.
	CO3	Create and input spatial data for GIS application.
	CO4	Interpret the aerial photographs and satellite imageries.
	CO5	Create and input spatial data for GIS application.
	CO6	Apply RS and GIS concepts for application in Civil Engineering
Renewable Energy Sources (C314)	CO1	Importance of solar energy, solar energy storage systems and its applications.
	CO2	Basic principles of wind energy conversion, nature of wind, energy conversion systems.
	CO3	Biomass conversion technologies, types and classification of biogas plants...
	CO4	Ocean thermal electric conversion methods, prospects India.
	CO5	Fuels cell equivalent circuit, operations and types of fuel cells and applications.
	CO6	Operation of Magneto Hydro Dynamic Power generation
Fluid Mechanics & Hydraulic Machinery Lab (C316)	CO1	Determine the fluid pressure and use various devices for measuring fluid pressure
	CO2	Calculate hydrostatic force and use of law of conservation mass to fluid flow.
	CO3	Apply Bernoulli's equation to fluid flow problems and boundary layer theory to determine lift and drag
	CO4	Apply appropriate equations and principles to analyze pipe flow problems.
	CO5	Apply Bernoulli's equation to fluid flow problems and boundary layer theory to determine lift and drag
	CO6	Apply appropriate equations and principles to analyze pipe flow problems.

Class: III Year II Semester:

Course Name with Code	Course Outcome	
DESIGN AND DRAWING OF STEEL STRUCTURES (C321)	CO1	Explain design philosophies of steel structures
	CO2	Choose the suitable I.S Rolled Steel Sections for structural members.
	CO3	Design Bolted & Welded connections for steel members
	CO4	Design Steel members subjected to Flexure, Tension and Compression
	CO5	Design slab base and gusset base for column
	CO6	Design Welded Plate Girder and Gantry Girder
WATER RESOURCE ENGINEERING (C322)	CO1	Have a thorough understanding of the theories and principles governing the hydrologic processes.
	CO2	Be able to quantify hydrologic components and apply concepts in hydrologic design of water resources
	CO3	Develop Intensity-Duration-Frequency and Depth-Area Duration curves to design hydraulic structures.
	CO4	Develop design storms and carry out frequency analysis.
	CO5	Develop flow mass curve and flow duration curve, apply hydrograph analysis in the design of water
	CO6	Develop Intensity-Duration-Frequency and Depth-Area Duration curves to design hydraulic structures.
GEOTECHNICAL ENGINEERING-II (C323)	CO1	Decide on their location based on soil characteristics
	CO2	Understand the various types of shallow foundations
	CO3	Compute the magnitude of foundation settlement and decide on the size of the foundation accordingly
	CO4	Use the field test data and arrive at the bearing capacity.
	CO5	Compute the magnitude of foundation settlement and decide on the size of the foundation accordingly
	CO6	Apply the principles of bearing capacity of piles and design them accordingly
Estimation Specifications and Contracts (C324)	CO1	Outline the preparation of an approximate and detailed estimation of buildings.
	CO2	Prepare rate analysis for different items in civil engineering works.
	CO3	Estimate the earth work quantities for roads and canals.
	CO4	Prepare bar bending schedule for different RCC elements.
	CO5	Apply principles of estimation for the valuation of buildings.
	CO6	Estimate the earth work quantities for roads and canals.

Course Name with Code	Course Outcome	
Remote Sensing and Gis LAB (C325)	CO1	Work comfortably on GIS software
	CO2	Digitize and create thematic map and extract important features
	CO3	Develop digital elevation model
	CO4	Interpretation and Estimation of features from satellite imagery.
	CO5	Analyze and Modelling using GIS software.
	CO6	Interpretation and Estimation of features from satellite imagery.
Civil Engineering Practice Lab (C326)	CO1	GainsadequateconfidencetoworkasaconsultingengineerinanyfieldofCivilEngineering
	CO2	Understands the duties, responsibilities and codalpractices of Civil Engineering profession
	CO3	Will be ready to plan, design and execute Civil Engineering projects
	CO4	Canbuiltsafetyrelatedandenvironmentalimpactrelatedcodalprotocols into project planning and
	CO5	Can optimize project costs using sustainability concepts
	CO6	Understands the duties, responsibilities and codalpractices of Civil Engineering profession
TRAFFIC ENGINEERING (C327)	CO1	Determine traffic volume and speed
	CO2	Determine travel time and density.
	CO3	Design trafficsignals
	CO4	Study the Environmental factors
	CO5	Determine highway capacity and LOS
	CO6	Study the Environmental factors
DISASTER MANAGEMENT (C328)	CO1	Affirm the usefulness of integrating management principles in disaster mitigation work
	CO2	Distinguish between the different approaches needed to manage pre- during and post- disaster periods
	CO3	Explain the process of risk management
	CO4	Relate to risk transfer
	CO5	Role of Technology in Disaster Managements
	CO6	Distinguish between the different approaches needed to manage pre- during and post- disaster periods

Class: IV Year I Semester:

Course Name with Code	Course Outcome	
DESIGN AND DRAWING OF STEEL STRUCTURES (C411)	CO1	Explain design philosophies of steel structures
	CO2	Choose the suitable I.S Rolled Steel Sections for structural members.
	CO3	Design Bolted & Welded connections for steel members
	CO4	Design Steel members subjected to Flexure, Tension and Compression
	CO5	Design slab base and gusset base for column
	CO6	Design Welded Plate Girder and Gantry Girder
GEOTECHNICAL ENGINEERING-II (C412)	CO1	Decide on their location based on soil characteristics
	CO2	Understand the various types of shallow foundations
	CO3	Compute the magnitude of foundation settlement and decide on the size of the foundation accordingly
	CO4	Use the field test data and arrive at the bearing capacity.
	CO5	Apply the principles of bearing capacity of piles and design them accordingly
	CO6	Compute the magnitude of foundation settlement and decide on the size of the foundation accordingly
Remote Sensing and Gis (C413)	CO1	Remote Sensing and Gis
	CO2	Interpret the aerial photographs and satellite imageries.
	CO3	Create and input spatial data for GIS application.
	CO4	Apply RS and GIS concepts for application in Civil Engineering

Course Name with Code	Course Outcome	
	CO5	Create and input spatial data for GIS application.
	CO6	Apply RS and GIS concepts for application in Civil Engineering
Industrial Waste Water Treatment (C414)	CO1	Know the quality and quantity of water for various industries and Advanced water
	CO2	Learn the common methods of treatment of wastewaters and Biological treatment
	CO3	Study of methods to reduce impacts of disposal of wasters into environment and
	CO4	Study of methods of treatment of wastewaters from specific industries like steel
	CO5	Study of methods of treatment of wastewaters from industries like Aqua, dairy, sugar
	CO6	Study of methods of treatment of wastewaters from specific industries like steel
DISASTER MANAGEMENT (C415)	CO1	Affirm the usefulness of integrating management principles in disaster mitigation work
	CO2	Distinguish between the different approaches needed to manage pre- during and post- disaster periods
	CO3	Explain the process of risk management
	CO4	Relate to risk transfer
	CO5	Role of Technology in Disaster Managements
Remote Sensing and Gis LAB (C416)	CO1	Work comfortably on GIS software
	CO2	Digitize and create thematic map and extract important features
	CO3	Develop digital elevation model
	CO4	Interpretation and Estimation of features from satellite imagery.
	CO5	Analyze and Modelling using GIS software.
	CO6	Develop digital elevation model
GEOTECHNICAL ENGINEERING LAB (C417)	CO1	Recall the behavior of soil with respect to water content (moisture content) for characterizing
	CO2	Classify the soils according to their grain size for determining the coefficient of uniformity and
	CO3	Determine the maximum dry density through compaction and consolidation to increase the
	CO4	Recall the importance of compressibility of the soil medium concept for taking necessary action
	CO5	Evaluate the strength of soil sub-grades and base course materials and enable appropriate
	CO6	Recall the importance of compressibility of the soil medium concept for taking necessary action

Class: IV Year II Semester:

Estimation Specifications and Contracts (C421)	CO1	Outline the preparation of an approximate and detailed estimation of buildings.
	CO2	Prepare rate analysis for different items in civil engineering works.
	CO3	Estimate the earth work quantities for roads and canals.
	CO4	Prepare bar bending schedule for different RCC elements.
	CO5	Apply principles of estimation for the valuation of buildings.
	CO6	Prepare bar bending schedule for different RCC elements.
Ground Improvement Techniques(C422)	CO1	By the end of the course, the student should be able to possess the knowledge of various methods of ground improvement and their suitability to different field situations.
	CO2	The student should be in a position to design a reinforced earth embankment and check its
	CO3	The student should be in a position to design a reinforced earth embankment and check its
	CO4	The student should be able to understand the concepts and applications of grouting
	CO5	The student should be in a position to design a reinforced earth embankment and check its
	CO6	The student should be able to understand the concepts and applications of grouting
Road Safety Engineering (C423)	CO1	To understand fundamental of Traffic Engg
	CO2	To investigate & determine the collective factors & remedies of accident involved
	CO3	To design & planning various road geometrics
	CO4	To manage the traffic system from road safety point of view.
	CO5	To design & planning various road geometrics
	CO6	To manage the traffic system from road safety point of view.