Course Name	Course Code	Course Outcomes
MATHEMA TICS -I	**At the end of the course the students are able to:**	
	C111.1	Determine the rank of a matrix and solution of equations using matrix theory
	C111.2	Demonstrate the matrix theory of Eigen value Eigen vector problems
	C111.3	Utilize the tool of sequence and series for learning advanced Engineering Mathematics
	C111.4	Analyze the nature of sequence and series
	C111.5	Solve the applications on the mean value theorems and Analyse the properties of Beta and Gama functions, determine the Improper Integrals
	C111.6	Apply partial differentiation to function of several variables in solving various engineering problems
ENGINEER ING PHYSICS	**At the end of the course the students are able to:**	
	C112.1	Interpret the interaction of optic energy with matter on the basis of interference and explain the diffraction of light by the diffraction grating
	C112.2	Apply concepts of polarization of light to understand the wave nature of light and Apply the Principles of Lasers to various laser systems
	C112.3	State the Principles of optical fiber for the propagation of light
	C112.4	Enumerate the applications of optical fibers to the Engineering systems
	C112.5	Illustrate the structure of various crystal systems
	C112.6	Describe the various crystal imperfections and probing methods like X-RD
PROGRAM MING FOR PROBLEM SOLVING	**At the end of the course the students are able to:**	
	C113.1	Develop the algorithms for simple problems
	C113.2	Translate given algorithms to working and correct program
	C113.3	Find Correct syntax errors as reported by the compilers
	C113.4	Identify and correct logical errors during execution
	C113.5	Examine pointers of different types
	C113.6	Make use of read and write to and from simple text and binary file
ENGINEER ING GRAPHICS	**At the end of the course the students are able to:**	
	C114.1	Explain the importance of Engineering drawing and Drawing instruments usage. Appreciate the usage of engineering curves (i.e. Ellipse, parabola, hyperbola&

		Rectangular Hyperbola) & Special Curves (i.e. Cycloid, Hypocycloid, Epicycloid)
	C114.2	Summarize the concept of projection and attain visualization projection of points, Lines and Planes
	C114.3	Apply the principles of Projection of solids also draw the projections of solids.
	C114.4	Solve the Problems on Sections of solid
	C114.5	Applying the knowledge and Draw the development of surfaces of different engineering components. Discuss the usage of intersections of solids
	C114.6	Summarize the concept of Orthographic & Isometric projections
ENGINEER ING PHYSICS LAB	At the end of the course the students are able to:	
	C115.1	Differentiate the basic principles of optics like interference and diffraction
	C115.2	Define the characteristics of Basic electronic circuits.
	C115.3	Explain the properties of semiconducting materials.
	C115.4	Interpret the theoretical, Practical Values of magnetic field values.
	C115.5	Explain the capabilities of materials.
	C115.6	Demonstrate the basic Characteristics of physical experiments
PROGRAM MING FOR PROBLEM SOLVING LAB	At the end of the course the students are able to:	
	C116.1	Formulate the algorithms for simple problems
	C116.2	Translate given algorithms to working and correct program
	C116.3	Recognize Correct syntax errors as reported by the compilers
	C116.4	Identify and correct logical errors during execution
	C116.5	Use pointers of different types
	C116.6	Implementation, read and write to and from simple text and binary file
MATHEMA TICS -II	At the end of the course the students are able to:	
	C121.1	Apply first order and first degree differential equations to solve various types of differential equations which will be used in solving various engineering problems.
	C121.2	Solving a higher order differential equations with constant coefficients and variable coefficients.
	C121.3	Apply the concept to find areas, volumes, centre of mass and Gravity for cubes, sphere and rectangular parallelepiped
	C121.4	Identify multiple integral concepts that are useful in Engineering sector.
	C121.5	Explain gradients, potential functions, and directional derivatives of functions of

		several variables.
	C121.6	Evaluate the Line ,Surface and Volume integrals by converting them one to another and Compute line, surface and volume integral using Gauss divergence, Green's and stoke's theorems.
CHEMISTRY	At the end of the course the students are able to:	
	C122.1	Summarize the knowledge of atomic, molecular and electronic changes, band theory related to conductivity.
	C122.2	Apply the required principles and concepts in electro chemistry.
	C122.3	Classify the corrosion and in understanding the problem Of water and its treatment.
	C122.4	Use the spectroscope and application to medical and other fields.
	C122.5	Determine the Structure, synthesis and pharmaceutical applications of paracetamol and aspirin.
	C122.6	Summarize principles of spectroscopy, selection rules and applications of electronic spectroscopy.
ENGLISH	At the end of the course the students are able to:	
	C123.1	Discuss the development in sharing information about family and friends
	C123.2	Implement general comprehending skills and present lucid skills in free writing
	C123.3	Understand the basic grammar techniques and utilize it in enhancing language development
	C123.4	Demonstrate an environment for reading and develop good language skills
	C123.5	Implement flair for any kind of writing with rich vocabulary and proper syntax
	C123.6	Implement proficiency in writing technical articles and presenting papers on any topic of any generation
ENGINEER ING MECHANI CS	At the end of the course the students are able to:	
	C124.1	Determine resultant of forces acting on a body and analyze equilibrium of a body subjected to a system of forces.
	C124.2	Solve problem of bodies subjected to friction.
	C124.3	Find the location of centroid and calculate moment of inertia of a given section.
	C124.4	Find the Mass Moment of Inertia of the given section
	C124.5	Understand the kinetics and kinematics of a body undergoing rectilinear, curvilinear, rotatory motion and rigid body motion.
	C124.6	Solve problems using work energy equations for translation, fixed axis rotation and plane motion and solve problems of vibration.

	At the end of the course the students are able to:	
ENGINEERING CHEMISTRY LAB	C125.1	Differentiate the total hardness of water sample.
	C125.2	Identify the Chloride content present in water sample.
	C125.3	Estimation of rate constant of a reaction from concentration time relationship.
	C125.4	Identify the physical properties like adsorption
	C125.5	Identify the physical properties like viscosity.
	C125.6	Calculation of R_f values of some organic molecules by TLC technique.
ELCS LAB	At the end of the course the students are able to:	
	C126.1	Implement proper body language.
	C126.2	Recognize visual experience.
	C126.3	Examine neutralization of accent for intelligibility.
	C126.4	Use speaking skills for clarity.
	C126.5	Interpret speaking skills for employment.
	C126.6	Execute personality development skills.
ENGINEERING WORKSHOP	At the end of the course the students are able to:	
	C127.1	Experiment and practice on machine tools and their operations
	C127.2	Experiment on manufacturing of components using workshop trades including pluming, fitting, carpentry, foundry, house wiring and welding.
	C127.3	Identify and apply suitable tools for different trades of Engineering processes including drilling, material removing, measuring, chiseling
	C127.4	Characterize basic electrical engineering knowledge for house wiring practice.
	C127.5	Experiment and practical exposure to various welding and joining processes
	C127.6	Develop the construction, function, use and application of different working tools,
Surveying and Geomatics	At the end of the course the students are able to:	
	C211.1	Execute the knowledge to calculate angles, distances
	C211.2	Discuss with the types of leveling equipment and their applications.
	C211.3	Identify data collection methods and prepare field notes and calculate angles
	C211.4	Explain the knowledge to the modern equipment and compute the distances.
	C211.5	Interpret survey data and compute areas and volumes, levels by different types of equipment
	C211.6	Discuss the concept of Photogrammetric surveying
Engineering	At the end of the course the students are able to:	

Geology	**C212.1**	Define the advanced knowledge of how geological principal can be applied to engineering practice
	C212.2	Explain the data collected in the field and the laboratory and recognize their geological importance
	C212.3	Classify the different types of minerals and rocks
	C212.4	Identify the structure and composition of earth
	C212.5	Discuss the how to use the precious earth natural recourses in the management of construction industry and mineral based industry
	C212.6	Identify the how human activates in construction of major projects such as dams, tunnels ,reservoir and its impact on earth environment
Strength of Materials - I	**At the end of the course the students are able to:**	
	C213.1	Explain the concepts of simple stresses and strains and estimation of stresses of bars of varying sections, composite bars and temperature stresses
	C213.2	Identify and calculate the variation of bending moment and shear force at any section and identify the position and the magnitude of maximum and minimum values for all practical loading cases
	C213.3	Solve the variation of flexural stresses across the section and identify the position and magnitude of maximum and minimum values in various sections.
	C213.4	Explain the variation of shear stresses across the section and identify the position and magnitude of maximum and minimum values in various sections.
	C213.5	Classify the deflections and rotations by various methods.
	C213.6	Identify the principal stresses and strains by recognize the orientation of principal planes and develops an understanding of various theories of failures.
Probability and Statistics	**At the end of the course the students are able to:**	
	C214.1	Identify the basic terms of probability and illustrate problems involving random variables
	C214.2	Explain the Probability distributions such as Binomial and Poisson distribution by using their probability functions and parameters.
	C214.3	Solve the expected values, variances of the continuous random variables for making decisions under randomized probabilistic conditions.
	C214.4	Recognize the normal probability distribution by the students and apply it approximately
	C214.5	Solve the unknown dependent variable using curve fitting methods
	C214.6	Use the tests of hypotheses for both large and small samples in making decisions over statistical claims

	At the end of the course the students are able to:	
Fluid Mechanics	**C215.1**	Explain Newton's law of viscosity classify fluids based on Newton's law of viscosity and solve problems on viscosity
	C215.2	Explain the broad principles of kinematics and dynamics
	C215.3	Discuss the Euler's theorem and deduce Bernoulli's equation for a ideal fluid and comment on validation assumption made
	C215.4	Identify the flow measurement in pipes and explain flow over notches and weirs
	C215.5	Discuss flow characteristics and classify the flow through the pipes and to estimate the losses in pipes
	C215.6	Describe basics of boundary layer theory and sketch laminar and turbulent flow
	At the end of the course the students are able to:	
Surveying Lab	**C216.1**	Use conventional surveying tools such as chain/tape, compass, plane table, level in the field of civil engineering applications such as structural plotting and highway profiling
	C216.2	Apply the procedures involved in field work and to work as a surveying team
	C216.3	Use the theodolite along with chain/tape, compass on the field
	C216.4	Apply geometric and trigonometric principles of basic surveying calculations
	C216.5	Apply field procedures in basic types of surveys, as part of a surveying team
	C216.6	Use the total station to calculate areas
	At the end of the course the students are able to:	
Strength of Materials Lab	**C217.1**	Operate and Analyze engineering values (e.g. stress or strain) from laboratory measurements.
	C217.2	Operate the Toughness of the material using Charpy And Izod Test.
	C217.3	Operate the Brinnell and Rockwell hardness number of the given specimen.
	C217.4	Operate the elastic constants through compression test on springs and deflection test on beams
	C217.5	Classify the structures and hardness of Unhardened and Hardened specimen through microscopic examinations
	C217.6	Describe the Tension, shear and torsion test on solid materials
	At the end of the course the students are able to:	
Engineering Geology Lab	**C218.1**	Discuss the method and ways of investigations required for Civil Engg projects
	C218.2	State the various rocks, minerals depending on geological classifications
	C218.3	Discuss the able to learn to couple geologic expertise with the engineering properties of rock

	C218.4	Explain the Un consolidated materials in the characterization of geologic sites for civil work projects and the quantification of processes such as rock slides and settlement.
	C218.5	Identify the geological map features
	C218.6	Classify the various techniques to analyze and to made possible solution for various geological problems
Basic Electrical and Electronics Engineering	At the end of the course the students are able to:	
	C221.1	Explain the basic concept of dc circuits
	C221.2	Classify the various concepts AC circuits
	C221.3	Discuss the various components in electrical installation
	C221.4	Explain the construction details and working principle of electrical machines
	C221.5	Identify semiconductor devices like PN junction and Zener diode and transistors and their applications
	C221.6	Define semiconductor devices like BJT and FET
Basic Mechanical Engineering for Civil Engineers	At the end of the course the students are able to:	
	C222.1	Discuss the mechanical equipment for the usage at civil engineering systems
	C222.2	Describe the general principles and requirement for refrigeration, manufacturing
	C222.3	List out the techniques employed to construct civil engineering systems.
	C222.4	Identify the kinematics and dynamics of mechanical elements such as linkages, gears
	C222.5	Explain the basic concepts of design, material selection, component behavior subjected to loads, and criteria of failure.
	C222.6	Identify the basic parts, operations of machine tools like Drilling, Boring, Shaping, Slotting, Planning and estimating their machining times.
Building Materials, Construction and Planning	At the end of the course the students are able to:	
	C223.1	Define the basic terminology that is used in the industry
	C223.2	Classify different building materials, properties and their uses
	C223.3	Understand the prevention of damage measures and good workmanship
	C223.4	Explain different building services
	C223.5	Discuss building bye-laws and building planning
	C223.6	Report on Building plans
Strength of Materials - II	At the end of the course the students are able to:	
	C224.1	Describe the concepts and principles, understand the theory of elasticity, and perform calculations, relative to the strength of structures and mechanical components in particular to torsion and direct compression

	C224.2	Solve the strains and deformation that will result due to the elastic stresses developed within the materials for simple types of loading
	C224.3	Describe strength and stability of structural members subjected to direct stresses.
	C224.4	Describe strength and stability of structural members subjected to bending stresses.
	C224.5	Interpret the stresses in thick and thin cylindrical and spherical shells under different loads and directions and member forces in a truss
	C224.6	Discuss the shear center and unsymmetrical bending.
Hydraulics and Hydraulic Machinery	At the end of the course the students are able to:	
	C225.1	Define their knowledge of fluid mechanics in addressing problems in open channels and hydraulic machinery.
	C225.2	Identify the problems in uniform, gradually and rapidly varied flows in open channel in steady state conditions.
	C225.3	Identify the dimensional analysis and to differentiate the models, prototype and similitude conditions for practical problems
	C225.4	Define the forces exerted by a jet of fluid on stationary and moving vanes of different shapes.
	C225.5	State the different hydraulic machinery devices and its principles that will be utilized in hydropower development and for other practical usages.
	C225.6	Explain the different Centrifugal Pumps and Basic knowledge of hydro power plants
Structural Analysis - I	At the end of the course the students are able to:	
	C226.1	Define statically indeterminate structures like propped cantilever and fixed beams using SFD and BMD
	C226.2	Recognize the statically determinate trusses, beams and frames using method of joints and method of sections
	C226.3	Classify the deflections of beams and pin jointed frame trusses using classical methods like strain energy and unit load method
	C226.4	Identify three hinged arch structures and to solve normal thrust and radial shear
	C226.5	Use slope deflection and moment distribution method to find moments in the continuous beams
	C226.6	Explain the effect of moving loads on structures using influence lines.
Computer aided Civil Engineering Drawing	At the end of the course the students are able to:	
	C227.1	Discuss Auto CAD commands and draw lines, circles and different types of polygon
	C227.2	Describe the plan of Civil Engineering Buildings as per aspect and orientation
	C227.3	Classify the Presenting drawings as per user requirements and preparation of Technical report.

	C227.4	Explain the Study and draw the labeled sketch of arches, lintels, floors, doors and window on sheets with exposure to Auto CAD.
	C227.5	Sketch the plan, elevation and cross-sectional views of residential building with Auto CAD
	C227.6	Sketch the how to use the Auto CAD commands for drawing 2D and 3D building Drawings required for civil Engineering applications
Hydraulics and Hydraulic Machinery Lab	**At the end of the course the students are able to:**	
	C228.1	Explain the basic measurement techniques of fluid mechanics and its appropriate application.
	C228.2	Describe the results obtained in the laboratory for various experiments.
	C228.3	Identify frictional forces applicable in a flow channel to determine major and minor losses.
	C228.4	Classify the practical working of Hydraulic machines- different types of Turbines, Pumps, and other miscellaneous hydraulics machines.
	C228.5	Identify the results of analytical models introduced in lecture to the actual behavior of real fluid flows and draw correct and sustainable conclusions.
	C228.6	Report technical laboratory report on different hydraulic experiments
Basic Electrical and Electronics Engineering Lab	**At the end of the course the students are able to:**	
	C229.1	Solve the electrical circuits using network Law
	C229.2	Explain the basic concept of three phase system
	C229.3	Define the working principal of electrical machines
	C229.4	State the basic components of electronics instruments
	C229.5	Identify and characterize diode
	C229.6	Identify and characterize different transistors
Structural Analysis-II	**At the end of the course the students are able to:**	
	C311.1	Solve the two-hinged arches and moment distribution method
	C311.2	Solve the impact of cables and suspension bridges on structures.
	C311.3	Describe the approximate method of structures by using portal method and cantilever method
	C311.4	Describe The Approximate Method Of Structures By Using Factor Method
	C311.5	Describe the basics of stiffness and flexibility methods for structural loads analysis
	C311.6	Define the influence lines for analysis purpose and analyze the continuous beams and portal frames
Geotechnical Engineering	**At the end of the course the students are able to:**	
	C312.1	Identify and classify soils as per Bureau of Indian Standards (BIS)

	C312.2	Describe effective stress and vertical stress below ground level
	C312.3	Explain the permeability, calculate yield of an aquifer and seepage through soil.
	C312.4	Define the soil stresses and prepare flow net diagram and also explain the process of compaction in soils.
	C312.5	Explain consolidation and compressibility parameters and estimate the total settlement & time rate settlement of soil.
	C312.6	Define the shear properties of cohesive and cohesion less soils.
Structural Engineering –I (RCC)	At the end of the course the students are able to:	
	C313.1	Identify the properties of materials used in reinforced concrete design, different methods of structural design such as working stress method,
	C313.2	Explain the flexure, shear torsion and bond for singly and doubly reinforced beam
	C313.3	Describe how to design the one way and two way slabs as per IS456:2000
	C313.4	Solve and Design different types of staircases as per IS456:2000.
	C313.5	Classify the columns and Design the axially loaded, uni-axial and biaxial bending columns as per IS456:2000.
	C313.6	Classify the footings and Design the isolated square, rectangular and circular footings.
Transportation Engineering	At the end of the course the students are able to:	
	C314.1	Describe the problems of highway planning and its classification With good highway planning.
	C314.2	Identify the geometric design of highway Knowledge and Modern tool usage for geometric design of highway.
	C314.3	Explain about classified traffic volume count and spot speed study on highway.
	C314.4	State on laboratory tests on aggregates and bituminous materials Utilizing laboratory tests.
	C314.5	Describe about pavement failures, its maintenance, and importance of drainage, hill roads and their challenges.
	C314.6	Identify flexible and rigid pavements.
Professional Elective-I Concrete Technology	At the end of the course the students are able to:	
	C315.1	Describe the properties of concrete ingredients
	C315.2	Identify Quality Control tests on concrete making materials
	C315.3	Discuss fresh concrete and its behavior on using admixtures
	C315.4	Explain the durability requirements of concrete
	C315.5	Use advanced laboratory techniques to characterize cement-based materials.
	C315.6	Solve mix design and engineering properties of special concretes.
Engineering	At the end of the course the students are able to:	

Economics and Accountancy	**C316.1**	Describe the relative importance of Engineering Economics and structure of Business Firms ranging from types,
	C316.2	Identify the tools for analyzing Demand and costs as well as in forecasting product demand and to develop critical and integrative thinking
	C316.3	Describe the Concepts of National Income, Inflation, Money Supply in Inflation, New Economic policy
	C316.4	Explain and evaluate present and future worth of the alternate projects and to appraise projects by using traditional and DCF Methods.
	C316.5	Describe and analyze the cost & benefit of each financial decision in short run & long run with the Concept of Leverages
	C316.6	Explain the students to understand the accounting language and to have a basic understanding of preparation of financial statement.
Highway Engineering and Concrete Technology Lab	**At the end of the course the students are able to:**	
	C317.1	Report different tests conducted on cement, aggregate and concrete at site.
	C317.2	Report on the non-destructive test on concrete.
	C317.3	Describe the concrete mix as per the site conditions and specification of materials available there.
	C317.4	Solve the different properties of aggregate
	C317.5	Solve the concept of workability and testing of concrete
	C317.6	Describe the properties of hardened concrete
Geotechnical Engineering Lab	**At the end of the course the students are able to:**	
	C318.1	Classify the soils and predict its behavior in terms of Physical properties i.e. sieve analysis and hydrometer analysis.
	C318.2	Explain the procedure to classify the coarse grained and fine grained soil.
	C318.3	Classify the soils and predict its behavior in terms of mechanical properties i.e. strength, compressibility and permeability.
	C318.4	Describe the concept of OMC to control compaction in the field.
	C318.5	List the compressibility of soils. Understand compressibility characteristics of soil.
	C318.6	List shear parameters of soil using various strength testing machines
Advanced Communication Skills Lab	**At the end of the course the students are able to:**	
	C319.1	Explain to use relevant vocabulary, using apt kinesics or body language in communication
	C319.2	Define the meaning of the text easily through comprehension techniques like, skimming, scanning and effective reading through proper vocabulary

	C319.3	Explain the writing skills through letters, reports and resume writing from the text and use for all professional settings
	C319.4	Identify ideas, information and organize them relevantly in making presentations
	C319.5	Identify to organize and deliver discussions, presentations and strategies to face effectively
	C319.6	Repeat the public speaking, group discussions and Interviews
Hydrology & Water Resources Engineering	**At the end of the course the students are able to:**	
	C321.1	Explain the different concepts and terms used in engineering hydrology
	C321.2	Identify the abstractions from precipitation
	C321.3	Identify and Explanation of the unit Hydrograph
	C321.4	Discuss the irrigation methods
	C321.5	Solve the Permeability of soil
	C321.6	Solve the runoff and discharge from catchment
Environmental Engineering	**At the end of the course the students are able to:**	
	C322.1	Classification of water and wastewater and their impacts
	C322.2	Describe the quantity of drinking water and domestic wastewater conveyance components
	C322.3	Classify the different plans about components of water supply systems for a given population.
	C322.4	Report on the total program for analysis of water distribution system.
	C322.5	Identify the Characteristics sewage and describe the sewage methods
	C322.6	Describe the purpose and steps in secondary treatment of waste water by biological methods.
Foundation Engineering	**At the end of the course the students are able to:**	
	C323.1	Discuss the principles and methods of Geotechnical Exploration
	C323.2	State and explain the suitability of soils and check the stability of slopes.
	C323.3	Solve the lateral earth pressures on different soil conditions.
	C323.4	Explain the stability of various retaining walls.
	C323.5	Explain how to design the shallow foundation.
	C323.6	Explain how to design the deep foundation.
Structural Engineering –II (Steel)	**At the end of the course the students are able to:**	
	C324.1	Explain the fundamental of steel structures and calculate the plastic moment of different cross-sections.
	C324.2	Identify and analysis of steel tension and compression members.
	C324.3	Identify the plastic sections by depends upon the support condition

	C324.4	Solve the beam Design including built-up sections and beam and connections
	C324.5	Identify and Design the various components of welded plate girder including stiffeners
	C324.6	Classify and design the structural steel components of industrial building.
Professional Elective –II Prestressed Concrete	**At the end of the course the students are able to:**	
	C325.1	Describe the knowledge of evolution of process of pre-stressing.
	C325.2	Discuss the different losses of pre-stressing.
	C325.3	Recognize pre-stressed concrete beams under flexure resistance of concrete as per codal provisions of IS: 1343-1980.
	C325.4	Recognize pre-stressed concrete beams under shear resistance of concrete as per codal provisions of IS: 1343-1980.
	C325.5	Describe the transfer of pre-stress in pretension members
	C325.6	Identify the deflection of beams and control of deflections.
Open Elective –I FOM	**At the end of the course the students are able to:**	
	C326.1	Discuss the applicability of the concept of management to understand the behavior of people in the organization.
	C326.2	Explain the organization structure &explains the human resource management for the performance of people in the organization.
	C326.3	State the principles and types of plant lay out for the production process
	C326.4	Solve the quality management using various inventory techniques, for proper utilization of resources in organization.
	C326.5	Explain the various marketing strategies to face competitive market for organization.
	C326.6	Define the various project management and program evaluation for better production methods in organization.
Environmental Engineering Lab	**At the end of the course the students are able to:**	
	C327.1	Examine the pH and turbidity of water sample; classify the organic and inorganic by using conductivity and total dissolved solids
	C327.2	Classify the alkalinity, acidity and chlorides in water sample
	C327.3	the iron, dissolved oxygen in water sample
	C327.4	Define the optimum does of coagulant in water sample
	C327.5	Define the nitrates, chlorides present in water sample
	C327.6	Examine the C.O.D, B.O.D present in water, Define coli form bacteria in water
Computer Aided Design Lab	**At the end of the course the students are able to:**	
	C328.1	Discuss the physical model of structural element
	C328.2	Execute the analyses of roof trusses by using STAAD.PRO

	C328.3	Execute the RCC slab and RCC beams.
	C328.4	Interpret from the post processing results
	C328.5	Sketch the space frames with STAAD.PRO
	C328.6	Discuss the structural elements and a system as per IS Codes
Estimation, Costing and Project Management	**At the end of the course the students are able to:**	
	C411.1	List out the General items of work in Buildings and their quantities
	C411.2	Identify the different types of quantities of buildings
	C411.3	List out the Detailed estimation of bar bending schedule
	C411.4	List out the Detailed estimation of Earthwork for roads and canals.
	C411.5	Discuss with the rate analysis for different items of civil works
	C411.6	Classify the different types of contract system and valuation methods
Professional Elective –III Remote Sensing &GIS	**At the end of the course the students are able to:**	
	C412.1	Describe the principles and components of remote sensing and its data.
	C412.2	Recognize the principles of aerial and satellite remote sensing, Able to comprehend the energy interactions with earth surface features, spectral properties of water bodies.
	C412.3	Explain the basic concept of GIS and its applications; know the different types of data representation in GIS.
	C412.4	Identify the Spatial data base management system and explain the data models & data structures.
	C412.5	Illustrate spatial and non spatial data features in GIS and analyze the spatial data.
	C412.6	Compute knowledge of remote sensing and GIS in different civil engineering applications.
Professional Elective –IV Irrigation and Hydraulic Structures	**At the end of the course the students are able to:**	
	C413.1	Know types of water retaining structures for multiple purposes and its key parameters
	C413.2	Considered for planning and designing of earth dams explain the causes of failure of different types of dams and their design criteria
	C413.3	Considered for planning and designing of gravity dams Explain the causes of failure of different types of dams and their design criteria
	C413.4	Understand details in any diversion head works and their design
	C413.5	Understand details in any Irrigation System and its requirements Know, Analyze and Design of a irrigation system components
	C413.6	Design minor irrigation structures such as regulators, cross drainage works and canal falls
ENGINEERING	**At the end of the course the students are able to:**	
	C414.1	Discuss on various phase diagrams and applications

MATERIAL S (Open Elective – II)	C414.2	To select and design components based on their properties and requirements
	C414.3	Awareness about the electrical and electronic materials
	C414.4	Summarize the properties of magnetic materials
	C414.5	Describe the properties of dielectrics and superconducting materials
	C414.6	Knowledge about bio materials like, titanium and stainless steel based.
Professional Practice law & Ethics	**At the end of the course the students are able to:**	
	C415.1	Illustrate the core values that enrich the ethical behavior of an engineer & moral issues and theories of the profession.
	C415.2	Discuss the importance of law of contracts & Sale of goods act 1930
	C415.3	Illustrate ADR methods in real time application as responsible experimenters with various code of law issues.
	C415.4	Relate the suitable safety measures towards risk benefit analysis for Employee rights and various Labour rights and related laws.
	C415.5	Explain the concepts of law relating to IPR, Copy right Act, Patent Act
	C415.6	Explain the global ethical &law issues related to various work place situations.
Professional Elective –V Air pollution	**At the end of the course the students are able to:**	
	C421.1	Describe the nature and characteristics of the air pollutants.
	C421.2	Discus the effects of air pollutants and global effects
	C421.3	Explain the concepts of thermodynamics and kinetics of air pollution
	C421.4	Discus the concepts of air quality management and ability to identify the various types of plume dispersion. \
	C421.5	Discuss the operation of settling chambers and centrifugal separators
	C421.6	Explain how to select appropriate equipments and models to control the pollutants
Professional Elective –VI Urban Transportati on Planning	**At the end of the course the students are able to:**	
	C422.1	Describe the various processes considered in Urban Transportation Planning
	C422.2	Traffic survey fore casting.
	C422.3	Identify the trip generation and analyze the various aspects of the trip generation models
	C422.4	Classify the various selection of trip distribution models and understand the application
	C422.5	Define the concept and methods of trip distribution.
	C422.6	Explain modal split and factors affecting modal split. And Describe the trip characteristics in urban areas.

	At the end of the course the students are able to:	
Open Elective –III Organizatio nal Behavior	**C423.1**	Demonstrate the applicability of the concept of organizational behavior to understand the behavior of people in the organization.
	C423.2	Demonstrate the applicability of analyzing the complexities associated with management of individual behavior in the organization.
	C423.3	Discuss the complexities associated with management of the group behavior in the organization.
	C423.4	Discuss how the organizational behavior can integrate in understanding the motivation behind behavior of people in the organization.
	C423.5	Define the applicability of analyzing the complexities of team work in understanding the behavior of people in the organization.
	C423.6	Discuss the applicability of leadership styles in organization based on the behavior of people in the organization.
	Program Outcomes of Department of CIVIL	
	P01	To apply the knowledge of Mathematics, Science and Engineering concepts in solving Complex Engineering problems.
	P02	Identify, formulate and solve complex problems to achieve demonstrated conclusions using mathematical principles and engineering sciences.
	PO3	To design solution for complex engineering problems with appropriate consideration for society
	PO4	To use research –based knowledge and research methods including design of experiments to provide valid conclusions
	PO5	To select and apply appropriate techniques for the design & analysis of systems using modern CAD tools
	PO6	Apply the contextual knowledge to assess societal, health, safety and cultural issues and endure the consequent responsibilities relevant to the professional engineering practice
	PO7	To understand that the solutions have to be provided taking the environmental issues and sustainability into consideration.
	PO8	Develop consciousness of professional, ethical and social responsibilities as experts in the field of Electronics and Communication Engineering
	PO9	To function effectively either as a member or a leader in a multi disciplinary activities
	PO10	To communicate effectively to both the peers and the others
	PO11	To apply engineering & management principles in their own / team projects in

	multidisciplinary environment
PO12	To Realize the need for lifelong learning and engage them to adopt technological change