

Dr. Samuel George Institute of Engineering & Technology

Approved By AICTE, New Delhi & Affiliated to JNTUK, KAKINADA.

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College Code : 35

B.TECH-CIVIL ENGINEERING			
COURSE OUTCOMES FOR FIRST YEAR FIRST SEMESTER(R23)			
CATEGORY	COURSE TITLE	CO	STATEMENT
BS&H	Engineering Physics	CO-1	Analyze the intensity variation of light due to polarization, interference and diffraction.
		CO-2	Familiarize with the basics of crystals and their structures.
		CO-3	Explain fundamentals of quantum mechanics and apply it to one dimensional motion of particles.
		CO-4	Summarize various types of polarization of dielectrics and classify the magnetic materials.
		CO-5	Explain the basic concepts of Quantum Mechanics and the band theory of solids.
		CO-6	Identify the type of semiconductor using Hall effect.
BS & H	Linear Algebra & Calculus	CO-1	Develop and use of matrix algebra techniques that are needed by engineers for practical applications.
		CO-2	Utilize mean value theorems to real life problems.
		CO-3	Familiarize with functions of several variables which is useful in optimization.
		CO-4	Learn important tools of calculus in higher dimensions.
		CO-5	Familiarize with double and triple integrals of functions of several variables in two dimensions using Cartesian and polar coordinates and in three dimensions using cylindrical and spherical coordinates.
Engineering Science	Basic Electrical & Electronics Engineering	CO-1	Describe fundamental laws, operating principles of motors/generators, MC/MI instruments
		CO-2	Demonstrate the working of electrical machines, measuring instruments and power generation stations.
		CO-3	Apply mathematical tools and fundamental concepts to derive various equations related to electrical circuits and machines.
		CO-4	Calculate electrical load and electricity bill of residential and commercial buildings.
Engineering Science	Engineering Graphics	CO-1	Understand the principles of engineering drawing, including engineering curves, scales, orthographic and isometric projections.
		CO-2	Draw and interpret orthographic projections of points, lines, planes and solids in front, top and side views.
		CO-3	Understand and draw projection of solids in various positions in first quadrant.
		CO-4	Explain principles behind development of surfaces.
		CO-5	Prepare isometric and perspective sections of simple solids.
Engineering Science	Introduction to Programming	CO-1	Understand basics of computers, the concept of algorithm and algorithmic thinking.
		CO-2	Analyse a problem and develop an algorithm to solve it.
		CO-3	Implement various algorithms using the C programming language.
		CO-4	: Understand more advanced features of C language.
		CO-5	Develop problem-solving skills and the ability to debug and

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			optimize the code.
Engineering Science	IT Workshop	CO-1	Perform Hardware troubleshooting.
		CO-2	Understand Hardware components and inter dependencies.
		CO-3	Safeguard computer systems from viruses/worms.
		CO-4	Document/ Presentation preparation.
		CO-5	Perform calculations using spreadsheets.
BS&H	Engineering Physics Lab	CO-1	Operate optical instruments like travelling microscope and spectrometer.
		CO-2	Estimate the wavelengths of different colours using diffraction grating.
		CO-3	Plot the intensity of the magnetic field of circular coil carrying current with distance.
		CO-4	Evaluate dielectric constant and magnetic susceptibility for dielectric and magnetic materials respectively.
		CO-5	Calculate the band gap of a given semiconductor.
		CO-6	Identify the type of semiconductor using Hall effect.
Engineering Science	Electrical & Electronics Engineering Workshop	CO-1	Measure voltage, current and power in an electrical circuit.
		CO-2	Measure of Resistance using Wheat stone bridge
		CO-3	Discover critical field resistance and critical speed of DC shunt generators.
		CO-4	Investigate the effect of reactive power and power factor in electrical loads.
Engineering Science	Computer Programming Lab	CO-1	Read, understand, and trace the execution of programs written in C language.
		CO-2	Select the right control structure for solving the problem.
		CO-3	Develop C programs which utilize memory efficiently using programming constructs like pointers.
		CO-4	Develop, Debug and Execute programs to demonstrate the applications of arrays, functions, basic concepts of pointers in C.
COURSE OUTCOMES FOR FIRST YEAR SECOND SEMESTER			
CATEGORY	COURSE TITLE	CO	STATEMENT
BS&H	Communicative English	CO-1	Understand the context, topic, and pieces of specific information from social or Transactional dialogues.
		CO-2	Apply grammatical structures to formulate sentences and correct word forms.
		CO-3	Analyze discourse markers to speak clearly on a specific topic in informal discussions.
		CO-4	Evaluate reading / listening texts and to write summaries based on global comprehension of these texts.
		CO-5	Create a coherent paragraph, essay, and resume.
BS & H	Engineering Chemistry	CO-1	Demonstrate the corrosion prevention methods and factors affecting corrosion.
		CO-2	Explain the preparation, properties, and applications of thermoplastics & thermosetting, elastomers & conducting

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			polymers.
		CO-3	Explain calorific values, octane number, refining of petroleum and cracking of oils.
		CO-4	Explain the setting and hardening of cement.
		CO-5	Summarize the concepts of colloids, micelle and nanomaterials.
Engineering Science	Differential Equations & Vector Calculus	CO-1	Solve the differential equations related to various engineering fields.
		CO-2	Identify solution methods for partial differential equations that model physical processes.
		CO-3	Interpret the physical meaning of different operators such as gradient, curl and divergence.
		CO-4	Estimate the work done against a field, circulation and flux using vector calculus.
Engineering Science	Basic Civil & Mechanical Engineering	CO-1	Understand various sub-divisions of Civil Engineering and to appreciate their role in ensuring better society.
		CO-2	Know the concepts of surveying and to understand the measurement of distances, angles and levels through surveying.
		CO-3	Realize the importance of Transportation in nation's economy and the engineering measures related to Transportation.
		CO-4	Understand the importance of Water Storage and Conveyance Structures so that the social responsibilities of water conservation will be appreciated.
		CO-5	Understand the basic characteristics of Civil Engineering Materials and attain knowledge on prefabricated technology.
Professional Core	Engineering Mechanics	CO-1	Understand the fundamental concepts in mechanics and determine the frictional forces for bodies in contact.
		CO-2	Analyze different force systems such as concurrent, coplanar and spatial systems and calculate their resultant forces and moments.
		CO-3	Calculate the centroids, center of gravity and moment of inertia of different geometrical shapes.
		CO-4	Apply the principles of work-energy and impulse-momentum to solve the problems of rectilinear and curvilinear motion of a particle.
		CO-5	Solve the problems involving the translational and rotational motion of rigid bodies.
		CO-2	Apply communication skills through various language learning activities.
		CO-3	Analyze the English speech sounds, stress, rhythm, intonation and syllable division for better listening and speaking comprehension.
		CO-4	Evaluate and exhibit professionalism in participating in debates and group discussions.
		CO-5	Create effective Course Objectives:
BS&H	Engineering Chemistry Lab	CO-1	Determine the cell constant and conductance of solutions.
		CO-2	Prepare advanced polymer materials.

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		CO-3	Determine the physical properties like surface tension, adsorption and viscosity
		CO-4	Estimate the Iron and Calcium in cement.
		CO-5	Calculate the hardness of water.
Engineering Science	Engineering Workshop	CO-1	Identify workshop tools and their operational capabilities.
		CO-2	Practice on manufacturing of components using workshop trades including fitting, carpentry, foundry and welding.
		CO-3	Apply fitting operations in various applications.
		CO-4	Apply basic electrical engineering knowledge for House Wiring Practice
Professional Core	Engineering Mechanics & Building Practices Lab	CO-1	Evaluate the coefficient of friction between two different surfaces and between the inclined plane and the roller.
		CO-2	Verify Law of Parallelogram of forces and Law of Moment using force polygon and bell crank lever.
		CO-3	Determine the Centre of gravity different configurations and
		CO-4	Understand the Quality Testing and Assessment Procedures and principles of NonDestructive Testing.
		CO-5	Exposure to safety practices in the construction industry.
Health and wellness, Yoga and Sports		CO-1	Understand the importance of yoga and sports for Physical fitness and sound health.
		CO-2	Demonstrate an understanding of health-related fitness components.
		CO-3	Compare and contrast various activities that help enhance their health.
		CO-4	Assess current personal fitness levels.
		CO-5	Develop Positive Personality
NSS/NCC/SCOUTS & GUIDES/COMMUNITY SERVICE		CO-1	Understand the importance of discipline, character and service motto.
		CO-2	Solve some societal issues by applying acquired knowledge, facts, and techniques.
		CO-3	Explore human relationships by analyzing social problems.
		CO-4	Determine to extend their help for the fellow beings and downtrodden people.
		CO-5	Develop leadership skills and civic responsibilities.
COURSE OUTCOMES FOR SECOND YEAR FIRST SEMESTER			
CATEGORY	COURSE TITLE	CO	STATEMENT
BS	Numerical Techniques And Statistical Methods	CO-1	Evaluate the approximate roots of polynomial and transcendental equations by different algorithms. Apply Newton's forward & backward interpolation and Lagrange's formulae for equal and unequal intervals
		CO-2	Apply numerical integral techniques to different Engineering problems. Apply different algorithms for approximating the solutions of ordinary differential equations with initial conditions to its analytical computations

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		CO-3	Apply discrete and continuous probability distributions
		CO-4	Design the components of a classical hypothesis test
		CO-5	Infer the statistical inferential methods based on small and large sampling tests
HSMC	Universal human values– understanding harmony and Ethical human conduct	CO-1	Define the terms like Natural Acceptance, Happiness and Prosperity
		CO-2	Identify one's self, and one's surroundings (family, society nature)
		CO-3	Apply what they have learnt to their own self in different day-to-day settings in real life
		CO-4	Relate human values with human relationship and human society.
		CO-5	Justify the need for universal human values and harmonious existence
		CO-6	Develop as socially and ecologically responsible engineers
Engineering Science	Surveying	CO-1	Apply the principle and methods of surveying and measuring of horizontal and vertical- distances and angles
		CO-2	Identify the source of errors and rectification methods
		CO-3	Apply surveying principles to determine areas and volumes
		CO-4	Setting out curves and using modern surveying equipments
		CO-5	Apply the basics of Photogrammetry Surveying in field
Professional Core	Strength of Materials	CO-1	To understand the basic materials behavior under the influence of different external loading conditions and the support conditions.
		CO-2	To draw the diagrams indicating the variation of the key performance features like axial forces, bending moment and shear forces in structural members.
		CO-3	To acquire knowledge of bending concepts and calculation of section modulus and for determination of stresses developed in the beams
		CO-4	To analyze the deflections due to various loading conditions.
		CO-5	To assess stresses across section of the thin, thick cylinders and columns to arrive at optimum sections to withstand the internal pressure using Lamé's equation
Professional Core	Fluid Mechanics	CO-1	Understand the principles of fluid statics, kinematics and dynamics
		CO-2	Apply the laws of fluid statics and concepts of buoyancy
		CO-3	Understand the fundamentals of fluid kinematics and differentiate types of fluid flows
		CO-4	Apply the Principle of conservation of energy for flow measurement.
		CO-5	Analyse the losses in pipes and discharge through pipe network
Professional Core	Surveying Lab	CO-1	Handle various linear and angular measuring instruments
		CO-2	Measure the linear and angular measurements
		CO-3	Calculate the area and volume by interpreting the data obtained from surveying activities

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		CO-4	Handle modern equipment such as total station
		CO-5	Prepare field notes from survey data
Professional Core	Strength of Materials Lab	CO-1	Conduct tensile strength test and draw stress-strain diagrams for ductile metals
		CO-2	Conduct tensile strength test and draw stress-strain diagrams for ductile metals
		CO-3	Able to conduct torsion test and determine torsion parameters
		CO-4	Perform hardness, impact and shear strength tests and calculate hardness numbers, impact and shear strengths
		CO-5	Able to conduct tests on closely coiled and open coiled springs and calculate deflections
Skill Enhancement Course	Building Planning and Drawing	CO-1	Plan various buildings as per the building by-laws.
		CO-2	Distinguish the relation between the plan, elevation and cross section and identify the form and functions among the buildings.
		CO-3	Draw signs and bonds
		CO-4	Draw different building units
		CO-5	Learn the skills of drawing building elements and plan the buildings as per requirements.
Audit Course	Environmental Science	CO-1	Grasp multi disciplinary nature of environmental studies and various renewable and non-renewable resources.
		CO-2	Understand flow and bio-geo- chemical cycles and ecological pyramids.
		CO-3	Understand various causes of pollution and solid waste management and related preventive measures
		CO-4	Understand the rainwater harvesting, watershed management, ozone layer depletion and waste land reclamation
		CO-5	Illustrate the causes of population explosion, value education and welfare programmes.
COURSE OUTCOMES FOR SECOND YEAR SECOND SEMESTER(R23)			
CATEGORY	COURSE TITLE	CO	STATEMENT
Management Course-I	Managerial Economics and Financial Analysis	CO-1	Define the concepts related to Managerial Economics, financial accounting and management
		CO-2	Understand the fundamentals of Economics viz., Demand, Production, cost, revenue and markets
		CO-3	Apply the Concept of Production cost and revenues for effective Business decision
		CO-4	Analyze how to invest their capital and maximize returns
		CO-5	Evaluate the capital budgeting techniques.
		CO-6	Develop the accounting statements and evaluate the financial performance of business entity
Engineering Science/Basic Science	Engineering Geology	CO-1	Understand the significance of geological agents on Earth surface and its significance in Civil Engineering.
		CO-2	Identify and understand the properties of Minerals and Rocks.
		CO-3	Understand the concepts of Groundwater and its geophysical

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			methods.
		CO-4	Classify and measure the Earthquake prone areas, Landslides and subsidence to practice the hazard zonation.
		CO-5	Investigate the project site for mega/mini civil engineering projects and site selection for mega engineering projects like Dams, Reservoirs and Tunnels.
Professional Core	Concrete Technology	CO-1	Familiarise the basic ingredients of concrete and their role in the production of concrete and its behaviour in the field
		CO-2	Test the fresh concrete properties and the hardened concrete properties. Understand the basic concepts of concrete. Design the concrete mix by BIS method.
		CO-3	Evaluate the ingredients of concrete through lab test results. realise the importance of quality of concrete
		CO-4	Understand the behaviour of concrete in various environments.
		CO-5	Familiarize the basic concepts of special concrete and their production and applications.
Professional Core	Structural Analysis	CO-1	Apply energy theorems to analyze trusses
		CO-2	analyze indeterminate structures by using Castigliano's-II theorem
		CO-3	Analysis of fixed and continuous beams
		CO-4	Analyze continuous beams and portal frames by using slope-deflection method
		CO-5	Analyze continuous beams and portal frames by using Moment – distribution method
Professional Core	Hydraulics & Hydraulic Machinery	CO-1	Understand the characteristics of laminar and turbulent flows
		CO-2	Apply the knowledge of fluid mechanics to address the uniform flow problems in open channels.
		CO-3	Solve non-uniform flow problems and hydraulic jump phenomenon in open channel flows.
		CO-4	Evaluate the performance of impact of jets on plates and design Pelton wheel, Francis and Kaplan turbine
		CO-5	Understand the principles, losses and its efficiencies of centrifugal pumps
Professional Core	Concrete Technology Lab	CO-1	Outline importance of testing cement and its properties
		CO-2	Assess different properties of Aggregates
		CO-3	Assess fresh concrete properties and their relevance to hardened concrete
		CO-4	Assess hardened concrete properties
Professional Core	Engineering Geology lab	CO-1	Identify Megascopic minerals & their properties.
		CO-2	Identify Megascopic rocks & their properties.
		CO-3	Identify the site parameters such as contour, slope & aspect for topography.
		CO-4	Know the occurrence of materials using the strike & dip problems.
Skill Enhancement	Remote Sensing & Geographical	CO-1	Acquire knowledge about concepts of remote sensing, sensors and their characteristics.

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course	Information Systems	CO-2	familiarize with data models and data structures to introduce various Raster and Vector Analysis capabilities in GIS.
		CO-3	digitize and create thematic map and extract important features to calculate geometry.
		CO-4	perform surface analysis over Contour to develop digital elevation model.
		CO-5	use GIS software to perform simple analysis in water resources and transportation engineering.
Engineering Science	Design Thinking & Innovation	CO-1	Define the concepts related to design thinking.
		CO-2	Explain the fundamentals of Design Thinking and innovation.
		CO-3	Apply the design thinking techniques for solving problems in various sectors.
		CO-4	Analyse to work in a multidisciplinary environment.
		CO-5	Evaluate the value of creativity.
Mandatory course	Building materials and Construction		
COURSE OUTCOMES FOR THIRD YEAR FIRST SEMESTER(R20)			
CATEGORY	COURSE TITLE	CO	STATEMENT
PC501	Professional Core courses (STRUCTURAL ANALYSIS)	CO-1	Distinguish between the determinate and indeterminate structures.
		CO-2	Identify the behavior of structures due to the expected loads, including the moving loads, acting on the structure.
		CO-3	Estimate the bending moment and shear forces in beams for different fixity conditions.
		CO-4	Analyze the continuous beams using various methods -, three moment method, slope deflection method, energy theorems.
		CO-5	Draw the influence line diagrams for various types of moving loads on beams/bridges.
		CO-6	Analyze the loads in Pratt and Warren trusses when loads of different types and spans are passing over the truss.
PC502	Professional Core courses (DESIGN AND DRAWING OF REINFORCED CONCRETE STRUCTURES)	CO-1	Work on different types of design methods
		CO-2	Carry out analysis and design of flexural members and detailing
		CO-3	Design structures subjected to shear, bond and torsion
		CO-4	Design different type of compression members and footings
PC503	Professional Core courses (GEOTECHNICAL ENGINEERING-1)	CO-1	The student must know the definition of the various quantities related to soil mechanics and establish their inter-relationships.
		CO-2	The student should be able to know the methods of determination of the various index properties of the soils and classify the soils.
		CO-3	The student should be able to know the importance of the different engineering properties of the soil such as compaction, permeability, consolidation and shear strength and determine them in the laboratory
		CO-4	The student should be able to apply the above concepts in day-to-day civil engineering practice.

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OE501	Open Elective Course/Job Oriented elective (RENEWABLE ENERGY SOURCES) (OE-1)	CO-1	Analyze solar radiation data, extra-terrestrial radiation, radiation on earth's surface and solar Energy Storage.
		CO-2	Illustrate the components of wind energy systems.
		CO-3	Illustrate the working of biomass, digesters and Geothermal plants.
		CO-4	Demonstrate the principle of Energy production from OTEC, Tidal and Waves.
		CO-5	Evaluate the concept and working of Fuel cells & MHD power generation.
PE501	Professional Elective courses (CONSTRUCTION TECHNOLOGY & MANAGEMENT)	CO-1	appreciate the importance of construction planning
		CO-2	understand the functioning of various earth moving equipment
		CO-3	know the methods of production of aggregate products and concreting
		CO-4	apply the gained knowledge to project management and construction techniques
PC504	Professional Core courses Lab Survey Camp (Field work)	CO-1	Apply the principle and methods of surveying and measuring of horizontal and vertical- distances and angles
		CO-2	Identify the source of errors and rectification methods
		CO-3	Apply surveying principles to determine areas and volumes
		CO-4	Setting out curves and using modern surveying equipments
		CO-5	Apply the basics of Photogrammetry Surveying in field
PC505	Professional Core courses Lab (GEOTECHNICAL ENGINEERING LAB)	CO-1	Determine index properties of soil and classify them.
		CO-2	Determine permeability of soils.
		CO-3	Determine Compaction, Consolidation and shear strength characteristics.
PC501	Skill advanced course/soft skill course* Design of Special Structure, Chimney, Hinge Tanks designs, spill ways etc.,	CO-1	Design of Special Structure, Chimney, Hinge Tanks designs, spill ways etc.,
MC501	Mandatory Course (AICTE Suggested) Professional Ethics and Human Values	CO-1	It gives a comprehensive understanding of a variety of issues that are encountered by every professional in discharging professional duties.
		CO-2	It provides the student the sensitivity and global outlook in the contemporary world to fulfill the professional obligations effectively.
COURSE OUTCOMES FOR THIRD YEAR SECOND SEMESTER (R20)			
CATEGORY	COURSE TITLE	CO	STATEMENT
PC601	Professional Core courses (DESIGN AND DRAWING OF STEEL STRUCTURES)	CO-1	Work with relevant IS codes
		CO-2	Carry out analysis and design of flexural members and detailing
		CO-3	Design compression members of different types with connection detailing

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		CO-4	Design Plate Girder and Gantry Girder with connection detailing
		CO-5	Produce the drawings pertaining to different components of steel structures
PC602	Professional Core courses (WATER RESOURCE ENGINEERING)	CO-1	Have a thorough understanding of the theories and principles governing the hydrologic processes.
		CO-2	Be able to quantify hydrologic components and apply concepts in hydrologic design of water resources projects.
		CO-3	Develop Intensity-Duration-Frequency and Depth-Area Duration curves to design hydraulic structures.
		CO-4	Develop design storms and carry out frequency analysis.
		CO-5	Develop flow mass curve and flow duration curve, apply hydrograph analysis in the design of water resources projects.
		CO-6	Develop unit hydrograph and synthetic hydrograph.
PC603	Professional Core courses (GEOTECHNICAL ENGINEERING-II)	CO-1	The student must be able to understand the various types of shallow foundations and decide on their location based on soil characteristics.
		CO-2	The student must be able to compute the magnitude of foundation settlement and decide on the size of the foundation accordingly.
		CO-3	The student must be able to use the field test data and arrive at the bearing capacity.
		CO-4	The student must be able to apply the principles of bearing capacity of piles and design them accordingly.
PE601	Professional Elective courses (ROAD SAFETY ENGINEERING)	CO-1	To understand fundamental of Traffic Engineering
		CO-2	To investigate & determine the collective factors & remedies of accident involved.
		CO-3	To design & planning various road geometrics.
		CO-4	To massage the traffic system from road safety point of view.
OE601	Open Elective Course/Job oriented elective (OE-2) (COMPUTER NETWORKS)	CO-1	Demonstrate different network models for networking links OSI, TCP/IP, B-ISDN, N-BISDN and get knowledge about various communication techniques, methods and protocol standards.
		CO-2	Discuss different transmission media and different switching networks
		CO-3	Analyze data link layer services, functions and protocols like HDLC and PPP.
		CO-4	Compare and Classify medium access control protocols like ALOHA, CSMA, CSMA/CD, CSMA/CA, Polling, Token passing, FDMA, TDMA, CDMA protocols

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		CO-5	Determine application layer services and client server protocols working with the client server paradigms like WWW, HTTP, FTP, e-mail and SNMP etc.
PC604	Professional Core courses Lab (ESTIMATION, COSTING AND CONTRACTS)	CO-1	The student should be able to determine the quantities of different components of buildings.
		CO-2	The student should be in a position to find the cost of various building components.
		CO-3	The student should be capable of finalizing the value of structures.
PC605	Professional Core courses Lab (REMOTE SENSING & GIS LAB)	CO-1	Work comfortably on GIS software
		CO-2	Digitize and create thematic map and extract important features
		CO-3	Develop digital elevation model
		CO-4	Interpretation and Estimation of features from satellite imagery.
		CO-5	Analyze and Modelling using GIS software.
PC606	Professional Core courses Lab CIVIL ENGINEERING PRACTICE	CO-1	Gains adequate confidence to work as a consulting engineer in any field of Civil Engineering
		CO-2	Understands the duties, responsibilities and codal practices of Civil Engineering profession
		CO-3	Will be ready to plan, design and execute Civil Engineering projects
		CO-4	Can build safety related and environmental impact related codal protocols into project planning and execution.
		CO-5	Can optimize project costs using sustainability concepts
SC601	Skill advanced course/s of skill course * Computational Tools SC-Lab-CAD LAB	CO-1	Model the geometry of real-world structure Represent the physical model of structural element/structure
		CO-2	Perform analysis
		CO-3	Interpret from the Post processing results
		CO-4	Design the structural elements and a system as per IS Codes
MC601	Mandatory course (AICTE) (EMPLOYABILITY SKILLS)	CO-1	To solve aptitude and reasoning problems,
		CO-2	Apply the soft skills in dealing the issues related to Employability
		CO-3	Successful in getting employment in campus placement interview



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College Code : 35

COURSE OUTCOMES FOR FOURTH YEAR FIRST SEMESTER(R20)			
CATEGORY	COURSE TITLE	CO	STATEMENT
PE701	Professional Elective-III (URBAN TRANSPORTATION PLANNING)	CO-1	Estimate travel demand for an urban area
		CO-2	Plan the transportation network for a city
		CO-3	Identify the corridor and plan for providing good transportation facilities.
		CO-4	Evaluate various alternative transportation proposals
PE702	Professional Elective-IV (DISASTER MANAGEMENT & MITIGATION)	CO-1	the application of Disaster Concepts to Management
		CO-2	Analyzing Relationship between Development and Disasters.
		CO-3	Ability to understand Categories of Disasters and
		CO-4	realization of the responsibilities to society
PE703	Professional Elective-V (EARTH & ROCKFILL DAMS)	CO-1	Able to design earth and rock fill dams
		CO-2	Get familiarity with slope stability calculations,
		CO-3	Prevention techniques for slope failures
OE701	Open Elective Courses/ Job oriented elective (OE-III) (INTRODUCTION TO INTERNET OF THINGS)	CO-1	Explain in a concise manner how the general Internet as well as Internet of Things work.
		CO-2	Understand constraints and opportunities of wireless and mobile networks for Internet of Things.
		CO-3	Use basic sensing and measurement and tools to determine the real-time performance of network of devices.
		CO-4	Develop prototype models for various applications using IoT technology
		CO-5	
OE702	Open Elective Course/ Job oriented elective (OE-IV) (CONCEPTS OF POWER SYSTEM ENGINEERING)	CO-1	Know the concepts of power generation by various types of power plants.
		CO-2	Learn about transmission line concepts and distribution systems schemes.
		CO-3	Learn about protection equipments and grounding methods of power system.
		CO-4	Know the economic aspects of electrical energy and their importance.
		CO-5	Know the importance of power factor improvement and voltage control in power systems.
HSC701	*Humanities and Social Science Elective (Universal Human Values 2: Understanding	CO-1	come more aware of themselves, and their surroundings (family, society, nature); they would become more responsible in life, and in handling problems with sustainable solutions, while keeping human relationships and human nature in mind.

Dr. Samuel George Institute of Engineering & Technology

Approved By AICTE, New Delhi & Affiliated to JNTUK, KAKINADA.

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	Harmony)	CO-2	They would have better critical ability. They would also become sensitive to their commitment towards what they have understood (human values, human relationship and human society).
		CO-3	It is hoped that they 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
SC701	Skill advanced course/soft skill course*Project planning,town planning,		
PR701	Industrial/ResearchInternship 2Months (Mandatory) after third year (tobeevaluatedduringV Isemester)		
COURSE OUTCOMES FOR FOURTH YEAR SECOND SEMESTER(R20)			
CATEGORY	COURSE TITLE	CO	STATEMENT
MajorProject	PROJ		