

PROGRAM OUTCOMES (POs)

PO1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2. Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5. Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

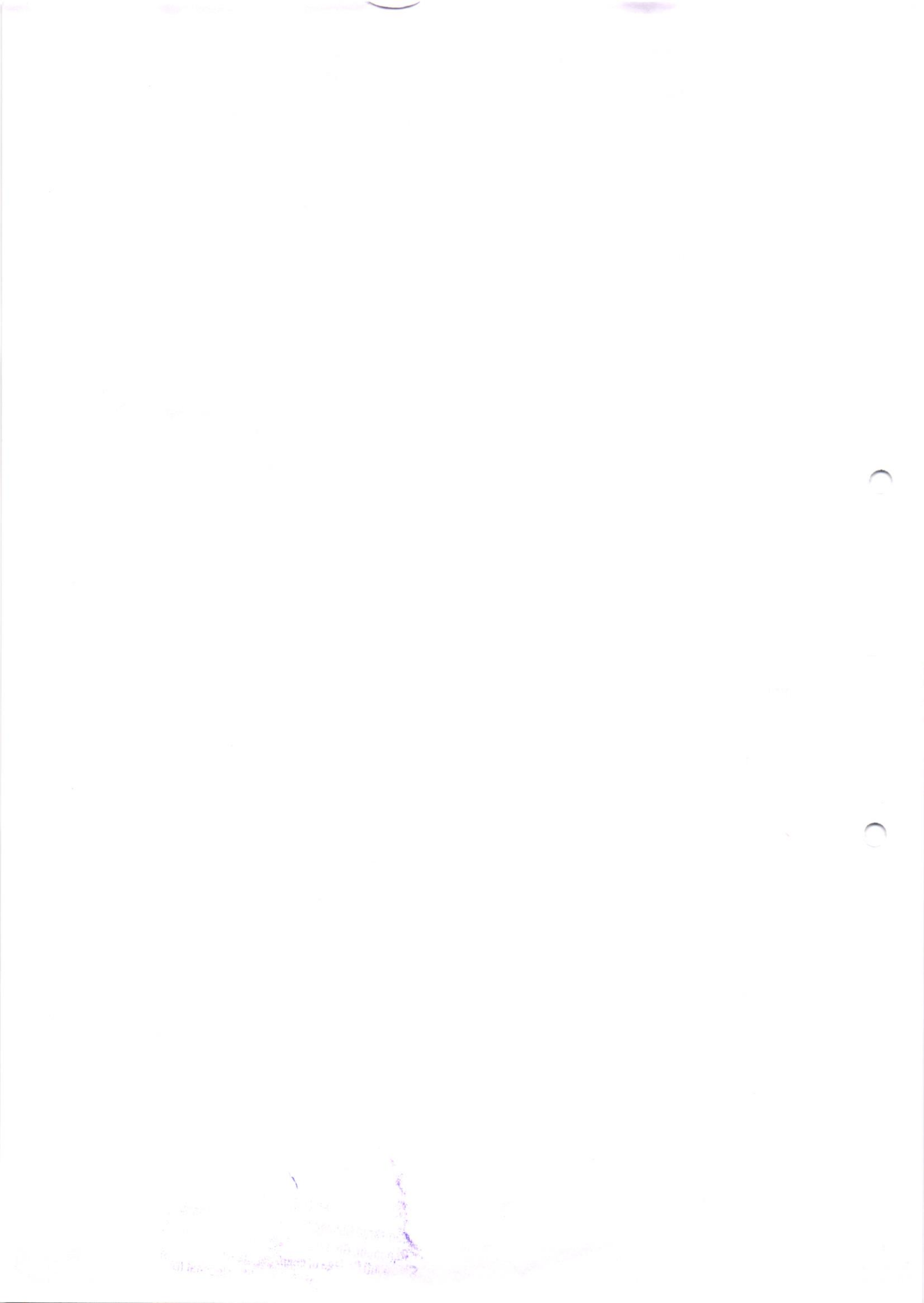
PO8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12. Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.





SAMSKRUTI

COLLEGE OF ENGINEERING & TECHNOLOGY

Approved by AICTE & Affiliated to JNTU Hyderabad

Accredited by
NAAC
NATIONAL ASSESSMENT AND
ACCREDITATION COUNCIL
with 'A' Grade

An Autonomous
Institution



Accredited by
NBA
NATIONAL BOARD
OF ACCREDITATION

B.TECH I st YEAR I&II SEM COURSE OUTCOMES FOR THE ACADEMIC YEAR 2023-24

S.NO	YEAR/SEM	COURSE NAME	COURSE OUTCOMES
1	I/I	MATRICES & CALCULUS	CO1: Write the matrix representation of a set of linear equations and to analyse the solution of the system of equations
			CO2: Find the Eigenvalues and Eigen vectors & Reduce the quadratic form to canonical form using orthogonal transformations
			CO3: Solve the applications on the mean value theorems & Evaluate the improper integrals using Beta and Gamma functions
			CO4: Find the extreme values of functions of two variables with/without constraints.
			CO5: Evaluate the multiple integrals and apply the concept to find areas, volumes
2	I/I	APPLIED PHYSICS	CO1: Understand physical world from fundamental point of view by the concepts of Quantum mechanics and visualize the difference between conductor, semiconductor, and an insulator by classification of solids.
			CO2: Identify the role of semiconductor devices in science and engineering Applications.
			CO3: Explore the fundamental properties of dielectric, magnetic materials and energy for their applications.
			CO4: Appreciate the features and applications of Nanomaterials
			CO5: Understand various aspects of Lasers and Optical fiber and their applications in diverse fields.
3	I/I	C-PROGRAMMING FOR ENGINEERS	CO1: To write algorithms and to draw flowcharts for solving problems & To use arrays, pointers, strings and structures to write C programs.
			CO2: To convert the algorithms/flowcharts to C programs.
			CO3: To code and test a given logic in the C programming language.
			CO4: To decompose a problem into functions and to develop modular reusable code.
			CO5: Searching and sorting problems.
4	I/I	ENGINEERING WORKSHOP	CO1: Study and practice on machine tools and their operations
			CO2: Practice on manufacturing of components using workshop trades including plumbing, fitting, carpentry, foundry, house wiring and welding.
			CO3: Identify and apply suitable tools for different trades of Engineering processes including drilling, material removing, measuring, chiseling.

PRINCIPAL

Samskruti College of Engineering & Technology
Kondapur, Ghatkesar Municipality, Medchal (D)

www.samskruti.ac.in

Ghatkesar, Medchal Dist, Hyderabad-501 301, Telangana.

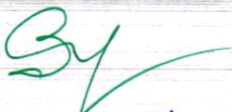
Ph: 93968 72497, 93968 72496, 97013 68992, 95055 18259

Email: info@samskruti.ac.in


			CO4:apply suitable tools for different trades of Engineering processes
			CO5:Apply basic electrical engineering knowledge for house wiring practice.
5	I/I	ENGLISH FOR SKILL ENHANCEMENT	CO1:Understand the importance of vocabulary and sentence structures
			CO2:Choose appropriate vocabulary and sentence structures for their oral and written communication.
			CO3:Demonstrate their understanding of the rules of functional grammar ,Develop comprehension skills from the known and unknown passages.
			CO4:Take an active part in drafting paragraphs, letters, essays, abstracts, précis and reports in various contexts.
			CO5:Acquire basic proficiency in reading and writing modules of English.
6	I/I	APPLIED PHYSICS LAB	CO1:Know the determination of the Planck's constant using Photo electric effect and identify the material whether it is n-type or p-type by Hall experiment.
			CO2:Appreciate quantum physics in semiconductor devices and optoelectronics
			CO3:Gain the knowledge of applications of dielectric constant.
			CO4:Understand the variation of magnetic field and behavior of hysteresis curve.
			CO5:Carried out data analysis.
7	I/I	ELCS LAB	CO1:Better understanding of nuances of English language through group activities
			CO2:Neutralisation of accent for intelligibility
			CO3:Speaking skills with clarity and confidence which inturn enhances their employability skills
			CO4:train students to use language appropriately for public speaking and interviews
			CO5:focus on production and practice sounds of English language and to help the students with the use of everyday English in formal and informal contexts
8	I/I	C- PROGRAMMING LAB	CO1:formulate the algorithms for simple problems
			CO2:identify and correct logical errors encountered during execution
			CO3:represent and manipulate data with arrays, strings and structures


PRINCIPAL
 Samskruti College of Engineering & Technology
 Kondapur, Ghatkesar Municipality, Medchal (D)

			CO4:use pointers of different types • create, read and write to and from simple text and binary files
			CO5:modularize the code with functions so that they can be reused
9	I/II	ORDINARY DIFFERENTIAL EQUATIONS & VECTOR CALCULUS	CO1:Identify whether the given differential equation of first order is exact or not
			CO2:Solve higher differential equation and apply the concept of differential equation to real world problems.
			CO3:Use the Laplace transforms techniques for solving ODE's.
			CO4:Evaluate the gradient , divergence , curl of scalar and vector functions
			CO5:Evaluate the line, surface and volume integrals and converting them from one to another
10	I/II	ENGINEERING CHEMISTRY	CO1:Acquire the basic knowledge of electrochemical procedures related to corrosion and its control.
			CO2:The students are able to understand the basic properties of water and its usage in domestic and industrial purposes.
			CO3:They can learn the fundamentals and general properties of polymers and other engineering materials.
			CO4:They can understand the importance and utility of energy sources and engineering materials.
			CO5:They can predict potential applications of chemistry and practical utility in order to become good engineers and entrepreneurs
11	I/II	COMPUTER AIDED ENGINEERING GRAPHICS	CO1:Apply computer aided drafting tools to create 2D and 3D objects.
			CO2:sketch conics and different types of solids.
			CO3:Appreciate the need of Sectional views of solids and Development of surfaces of solids.
			CO4:Read and interpret engineering drawings
			CO5:Conversion of orthographic projection into isometric view and vice versa manually and by using computer aided drafting.
12	I/II	BASIC ELECTRICAL ENGINEERING	CO1:To analyse and solve electrical circuits using network laws and theorems
			CO2:Understand the response of types of electrical circuits to different excitations
			CO3:To understand and analyse basic electrical and magnetic circuits


PRINCIPAL
 Samskruti College of Engineering & Technology
 Kondapur, Ghatkesar Municipality, Medchal (D)

			CO4:Study the working principles of electrical machines and transformers
			CO5:To Introduce components of low voltage electrical installations
13	I/II	ELECTRONICS DEVICES & CIRCUITS	CO1:Acquire the knowledge of various electronic devices and their use on real life.
			CO2:Know the applications of various devices.
			CO3:Acquire the knowledge about the role of special purpose devices and their applications.
14	I/II	PYTHON PROGRAMMING LAB	CO1:Develop the application specific codes using python.
			CO2:Understand Strings, Lists, Tuples and Dictionaries in Python
			CO3:Verify programs using modular approach, file I/O, Python standard library
			CO4:Implement Digital Systems using Python
			CO5:Verify programs using modular approach, file I/O, Python standard library
15	I/II	ENGINEERING CHEMISTRY LAB	CO1:Determination of parameters like hardness of water and rate of corrosion of mild steel in various conditions.
			CO2:Able to perform methods such as conductometry, potentiometry and pH metry in order to find out the concentrations or equivalence points of acids and bases.
			CO3:Students are able to prepare polymers like bakelite and nylon-6.
			CO4:Estimations saponification value, surface tension and viscosity of lubricant oils.
			CO5:To know instrumental techniques as well as properties of Lubricants
16	I/II	BEE LAB	CO1:Exposure to basic electrical laws
			CO2:Verify basic electrical circuits using theorems
			CO3:Understand the response of different types of electrical circuits for different excitations
			CO4:Evaluate performance calculation of electrical machines and transformers through various testing methods
			CO5:Analyse transient responses of R, L & C circuits for different input conditions.


PRINCIPAL
 Samskruti College of Engineering & Technology
 Kondapur, Ghatkesar Municipality, Medchal (D)

CIVIL ENGINEERING III&I SEM COURSE OUTCOMES FOR THE ACADEMIC YEAR 2023-24

S.NO	YEAR/SEM	COURSE NAME	COURSE OUTCOMES
1	III/I	Structural Analysis - II	CO1: Analyze the two hinged arches
			CO2: Solve statically indeterminate beams and portal frames using classical methods
			CO3: Sketch the shear force and bending moment diagrams for indeterminate structures.
			CO4: Formulate the stiffness matrix and analyze the beams by matrix methods
			CO5: Analyze to know the influence lines for indeterminate structures
2	III/I	Geotechnical Engineering	CO1: Characterize and classify the soils personal lives and professional careers
			CO2: Able to estimate seepage, stresses under various loading conditions and compaction characteristics global citizen
			CO3: Able to analyse the compressibility of the soils
			CO4: Able to understand the strength of soils under various drainage conditions
			CO5: Able to know the failure mechanism and the shear strength of soils
3	III/I	Structural Engineering -I(RCC)	CO1: Compare and design the singly reinforced, doubly reinforced and flanged sections.
			CO2: Design the axially loaded, uniaxial and biaxial bending columns
			CO3: Classify the footings and design the isolated square, rectangular and circular footings
			CO4: Distinguish and design the one-way and two-way slabs.
			CO5: Students able to know the design of footings for different foundations
4	III/I	Transportation Engineering	CO1: An ability to apply the knowledge of mathematics, science and engineering in the areas of traffic engineering, highway development and maintenance considered for planning and designing
			CO2: An ability to design, conduct experiments to assess the suitability of the highway materials like soil, bitumen, aggregates and a variety of bituminous mixtures. Also the students will develop the ability to interpret the results and assess the suitability of these materials for construction of highways.


PRINCIPAL
 Samskruti College of Engineering & Technolog.
 Kordapur, Ghatkesar Municipality, Medchal (D)

			CO3: An ability to design flexible and rigid highway pavements for varying traffic compositions as well as soil subgrade and environmental conditions using standards stipulated by Indian Roads Congress
			CO4: An ability to evaluate the structural and functional conditions of in-service highway pavements and provide solution in the form of routine maintenance measures or designed overlays using Indian Roads Congress guidelines
			CO5: An ability to assess the issue related to road traffic and provide engineering solutions supported with an understanding of road user psychological and behavioural patterns.
5	III/I	Concrete Technology	CO1: Determine the properties of concrete ingredients i.e. cement, sand, coarse aggregate by conducting different tests
			CO2: Recognize the effects of rheology and early age properties of concrete on its long term behaviour
			CO3: Apply the use of various chemical admixtures and mineral additives to design cement-based materials with tailor-made properties
			CO4: Use advanced laboratory techniques to characterize cement-based materials.
			CO5: Perform mix design and engineering properties of special concretes such as high-performance concrete, self-compacting concrete, and fibre reinforced concrete.
6	III/I	Engineering Economics and Accountancy	CO1: To perform and evaluate present and future worth of the alternate projects and to appraise projects by using traditional and DCF methods.
			CO2: To carry out cost benefit analysis of projects and to calculate BEP of different alternative projects
7	III/I	Highway Engineering and Concrete Technology Lab	CO1: Categorize the test on materials used Civil Engineering Buildings & Pavement constructions
			CO2: To perform the tests on concrete for its characterization
			CO3: To design concrete mix proportioning by using Indian standard method
			CO4: Examine the tests performed for bitumen mixes
			CO5: To prepare a laboratory report
8	III/I	Geotechnical Engineering Lab	CO1: At the end of the course, the students will be able to classify and evaluate the behaviour of the soils subjected to various loads
9	III/I	Advanced Communication Skills Lab	CO1: The students will be able to use English language both written and spoken
			CO2: The students will be able to enrich their comprehension ability and fluency


PRINCIPAL
 Samskruti College of Engineering & Technology
 Kondapur, Ghatkesar Municipality, Medchal (D)


			CO3: To understand the concept and will gain confidence level in the appearing in the jam, debate role-play
			CO4: The students will able to develop the study skills and communication skills in formal and informal situations
			CO5: The students will able to improve the language proficiency in English with writing skills also
1	III/II	Hydrology and Water Resource Engineering	CO:1Understand the different concepts and terms used in engineering hydrology
			CO:2To identify and explain various formulae used in estimation of surface and ground water hydrology components
			CO:3Demonstrate their knowledge to connect hydrology to the field requirement
			CO:4The students will able to know the to increase the ground water table depends upon clainmatic factors
			CO:5To understand and the importance of canal regulation system in irrigation
2	III/II	Environmental Engineering	CO:1Assess characteristics of water and wastewater and their impacts
			CO:2Estimate quantities of water and wastewater and plan conveyance components
			CO:3Design components of water and waste water treatment plants
			CO:4Be conversant with issues of air pollution and control
			CO:5To understand the concept of various unit operations and design of water treatment systems
3	III/II	Foundation Engineering	CO:1Understands the principles and methods of Geotechnical Exploration
			CO:2Decide the suitability of soils and check the stability of slopes
			CO:3Calculate lateral earth pressures and check the stability of retaining walls
			CO:4Analyse and design the shallow and deep foundations
			CO:5Student will able to analyse and design of well foundations
4	III/II	Structural Engineering- II (Steel)	CO:1Analyze the tension members, compression members.
			CO:2Design the tension members, compression members and column bases and joints and connections


PRINCIPAL
 Samskruti College of Engineering & Technology
 Kondapur, Ghatkesar Municipality, Medchal (D)


			CO:3Analyze and design the beams including built-up sections and beam and connections.
			CO:4Identify and Design the various components of welded plate girder including stiffeners
			CO:5Analyse and design of roof trusses
5	III/II	Advanced Structural Analysis	CO:1Analyze the multistory building frames by various approximate methods
			CO:2Solve the continuous beams portal frames by matrix methods of analysis
			CO:3Analyze and design of large frames with or without shear walls
			CO:4Analyze and design plane truss continuous beams
			CO:5 students will able to know the structural behaviour of large frames
6	III/II	Fundamentals of Management for Engineering	CO1:The students understand the significance of Management in their Profession
			CO2:The various Management Functions like Planning, Organizing, Staffing, Leading,
			CO3:Motivation and Control aspects are learnt in this course.
			CO4: The students can explore the Management Practices in their domain area.
7	III/II	Computer Aided Design Lab	CO:1Model the geometry of real-world structure represent the physical model of structural element /structure
			CO:2Perform analysis
			CO:3Design the structural elements and a system as per IS Codes
			CO:4Interpret from the post processing results
			CO:3Examine and Estimate water waste water,air and soil Quality
			CO:4Compare the water, air quality standards with prescribed standards set by the local governments
			CO:5Develop a report on the quality aspect of the environment
8	IV/I	Estimation, Costing and Project Management	CO1:Understand the technical specifications for various works to be performed for a project
			CO2:2Quantify the worth of a structure by evaluating the quantities of constituents , derive their cost rates


PRINCIPAL
 Samskruti College of Engineering & Technology
 Kondapur, Ghatkesar Municipality, Medchal (D)

			CO3: Understand how competitive bidding works and how to submit a bidding proposal
			CO4: An idea of how to optimize construction projects based on costs
			CO5: An ability to put forward ideas and understandings to others with effective communication processes
9	IV/I	Professional Practice law and Ethics	CO1: The students will understand the importance of professional practice, Law and Ethics in their personal lives and professional careers
			CO2: The students will learn the rights and responsibilities as an employee, team member and a global citizen
10	IV/I	Remote Sensing and GIS	CO1: Describe different concepts and terms used in Remote Sensing and its data
			CO2: Understand the Data conversion and Process in different coordinate systems of GIS interface
			CO3: Evaluate the accuracy of Data and implementing a GIS
			CO4: Understand the applicability of RS and GIS for various applications
11	IV/I	Irrigation and Hydraulic Structures	CO1: Know types of water retaining structures for multiple purposes and its key parameters considered for planning and designing
			CO2: Understand details in any Irrigation System and its requirements
			CO3: Know, Analyze and Design of a irrigation system components
12	IV/I	Basic Mechanical Engineering	CO1: Understand the different manufacturing processes.
			CO2: Explain the basics of thermal engineering and its applications.
			CO3: Describe the working of different mechanical power transmission systems and power plants.
			CO4: Describe the basics of robotics and its applications.
13	IV/I	Industrial Oriented Mini project	CO1: Formulate a real world problem and develop its requirements
			CO2: Ability to plan and execute well defined objective
			CO3: Ability to work in team at component level
			CO4: Ability to solve problems on analysis & design
			CO5: Self learn new softwares and /or techniques that contribute to the software solution of the project
14	IV/I	Seminar	CO1: The students will be able to recall existing technologies in the area of Designing
			CO2: The students will be to able describe compare and evaluate different technologies


PRINCIPAL
 Samskruti College of Engineering & Technology
 Kondapur, Ghatkesar Municipality, Medchal (D)

			CO3: The students will be to able decide the area of interest
			CO4: The students will demonstrate the ability to identify, formulate and solve Civil engineering problems
			CO5: The students will be to able to write technical reports
15	IV/I	project stage 1	CO:1The students will be able to recall existing technologies in the area of Designing
			CO:2The students will be to able describe compare and evaluate different technologies
			CO:3The students will be to able decide the area of interest
			CO:4The students will demonstrate the ability to identify, formulate and solve Civil engineering problems
			CO:5The students will be to able to write technical reports
16	IV/II	AIRPORTS ,RAILWAYS &WATERWAYS	CO1: At the end of this course, the students will develop
			CO2:An ability to design of runways and taxiways.
			CO3:An ability to design the infrastructure for large and small airports
			CO4:An ability to design various crossings and signals in Railway Projects.
			CO5:An ability plan the harbors and ports projects including the infrastructure required for new ports and harbors
17	IV/II	ENVIRONMENTAL IMPACT ASSESMENT	CO1:Identify the environmental attributes to be considered for the EIA study
			CO2:Formulate objectives of the EIA studies
			CO3:Identify the methodology to prepare rapid EIA
			CO4:Prepare EIA reports and environmental management plans
			CO5:Define and Classify Environmental Impacts and the terminology
18	IV/II	BASIC POWER PLANT ENGINEERING	CO1:Upon completion of the course, the students can understand the principles of operation for different power plants and their economics
			CO2:Basics of Nuclear Energy Conversion
			CO3:Energy, Economic and Environmental Issues
			CO4:Gas Turbine and Combined Cycle Power Plants
			CO5:Coal Based Thermal Power Plants
19	IV/II	PROJECT STAGE -II	CO1:Student will able to work in a group as a part of multidisciplinary team with professional responsibility


PRINCIPAL
 Samskruti College of Engineering & Technology
 Kondapur, Ghatkesar Municipality, Medchal (D)

			CO2:Student will able to Analyse and design of structure to meet desired needs with in realistic constraints
			CO3:Student is capable of doing Review litereture and finalizes problem statement
			CO4:Student can plan activity schedule and implementation in a given time span
			CO5:Student will be able to prepare and present technical report



PRINCIPAL
Samskruti College of Engineering & Technology
Kondapur, Ghatkesar Municipality, Medchal (D)

Electrical & Electronics Engineering I & II Sem Course outcomes for the Academic year 2023- 2024


S.N O.	YEAR/S EM	COURSE NAME	Course Outcomes
1	I/I	ELECTRICAL CIRCUIT ANALYSIS –I	CO1: Understand network analysis, techniques using mesh and node analysis.
			CO2: Evaluate steady state and transient behavior of circuits for DC excitations
			CO3: Evaluate steady state and transient behavior of circuits for AC excitations
			CO4: Analyze electric circuits using network theorems
			CO5: Understand concepts of coupled circuits.
2	I/I	ELEMENTS OF ELECTRICAL AND ELECTRONICS ENGINEERING	CO1: Verify the basic Electrical circuits through different experiments
			CO2: Evaluate the performance calculations of Electrical Machines
			CO3: Evaluate the performance calculations of Transformers through various testing methods.
			CO4: Analyze the transient responses of RL
			CO5: Analyze the transient responses of RC circuits for different input conditions.
3	I/II	ELECTRICAL CIRCUIT ANALYSIS – II	CO1: Observe the response of various R, L and C circuits for different excitations.
			CO2: Examine the behavior of Laplace transforms and transfer function of single port network.
			CO3: Obtain two port network parameters and applications
			CO4: Examine the behavior of circuits using Fourier function of single


PRINCIPAL
 Samskruti College of Engineering & Technology
 Kondapur, Ghatkesar Municipality, Medchal (D)

			port network.
			CO5: Obtain design of various filters
4	I/II	ELECTRICAL CIRCUIT ANALYSIS LABORATORY	CO1: Analyze complex DC circuits
			CO2: Analyze complex AC linear circuits
			CO3: Apply concepts of electrical circuits across engineering
			CO4: Evaluate response of a given network by using theorems.
			CO5: Analyze the two port network
			CO1: Express any periodic function in terms of sine and cosine
5	II/I	NUMERICAL METHODS AND COMPLEX VARIABLES	CO2: Find the root of a given polynomial and transcendental equations.
			CO3: Estimate the value for the given data using interpolation
			CO4: Find the numerical solutions for a given first order ODE's
			CO5: Analyze the complex function with reference to their analyticity, integration using Cauchy's integral and residue theorems
6	II/I	ELECTRICAL MACHINES - I	CO1: Identify different parts of a DC machine & understand its operation
			CO2: Carry out different testing methods to predetermine the efficiency of DC machines
			CO3: . Understand different excitation and starting methods of DC machines
			CO4: Control the voltage and speed of a DC machines


PRINCIPAL
 Samskruti College of Engineering & Technology
 Kondapur, Ghatkesar Municipality, Medchal (D)

			CO5 Analyze single phase and three phase transformers circuits.
7	II/I	POWER SYSTEM - I	CO1: Understand the operation of conventional and renewable electrical power generating stations.
			CO2: Evaluate the power tariff methods and Economics associated with power generation
			CO3: Determine the electrical circuit parameters of transmission lines
			CO4: Analyze the operations of AIS & GIS, Insulators
			CO5: Analyze the Distribution systems
8	II/I	ANALOG ELECTRONIC CIRCUITS	CO1: Know the characteristics, utilization of various components.
			CO2: Understand the biasing techniques
			CO3: Design and analyze various rectifiers, small signal amplifier circuits.
			CO4: Design sinusoidal and non-sinusoidal oscillators.
			CO5: A thorough understanding, functioning of OP-AMP, design OP-AMP based circuits with linear integrated circuit
			CO1: To understand the basic laws of electromagnetism.
			CO2: To obtain the electric and magnetic fields for simple configurations under static conditions.
			CO3: To analyze time varying electric and magnetic fields.
			CO4: To understand Maxwell's equation in different forms and different


PRINCIPAL
 Samskruti College of Engineering & Technology
 Kondapur, Ghatkesar Municipality, Medchal (D)