Sri SAIRAM COLLEGE OF ENGINEERING
Anekal, Bengaluru

ISO 9001:2015 certified Institution
Approved by AICTE, New Delhi
Affiliated to Visvesvaraya Technological University
www.sairamce.edu.in

DEPARTMENT OF SCIENCE AND HUMANITIES 2017 SCHEME-CO's

Course Code	Course Name	CO Code	CO
17PHY12/22	ENGINEERING PHYSICS	CO1	earn and understand more about basic principles and to develop problem solving skills and implementation in technology.
		CO2	ain knowledge about Modern Physics and quantum mechanics will update basic concepts to implement the skills.
		CO3	udy of material properties and their applications is the prime role to understand and use in engineering applications and studies.
		CO4	Study lasers and optical fibers and its applications are to impart knowledge and to develop skills and to use modern instruments in engineering applications
		CO5	Understand crystal structure and applicationsare to boost the technical skills and its applications.
17PHYL17/27	ENGINEERING PHYSICS LAB	CO1	Develop skills to impart practical knowledge in real time solution.
		CO2	Understand principle, concept working and application of new technology and comparison of results with theoretical calculations.
		CO3	Design new instruments with practical knowledge.
		CO4	Gain knowledge of new concept in the solution of practical oriented problems and to understand more deep knowledge about the solution to theoretical problems.
		CO5	Understand measurement technology, usage of new instruments and real time applications in engineering studies.
17ELE13/23	BASIC ELECTRICAL ENGINEERING	CO1	Analysis of DC and AC circuits.
		CO2	Principle and operation of Dc machines
		CO3	Analysis single phase and 3 phase AC circuits. concept of electrical wiring and protective
		CO4	Principle and operation of synchronous machines
		CO5	Principle and operation of single phase transformer ,concept of electrical wiring and protective devices
17ECED14/24	COMPUTER AIDFED ENGINEERING DRAWING	CO1	Understand the BIS conventions use of Standard tools, coordinate system and reference plane. Apply the concept of orthographic Projection of Points
		CO2	Apply the concept of Orthographic projection for solving Problems on Straight Lines in different position in reference planes
		CO3	Apply the concept of Orthographic projection for solving Problems on Plane Surfaces in different positions
		CO4	Apply the concept of Orthographic projection for solving Problems on 3D elements such as Solids in different
		CO5	Analyse the 2D sketch represent in 3D solids in combination and apply the principle of section of solids for developing the lateral surfaces.
17CIV13/23	ELEMENTS OF CIVIL ENGINEERING AND MECHANICS	CO1	Know basics of Civil Engineering, its scope of study, knowledge about Roads, Bridges and Dams.
		CO2	Comprehend the action of Forces, Moments and other loads on systems of rigid bodies.
		CO3	Compute the reactive forces and the effects that develop as a result of the external loads..
		CO4	Locate the Centroid and compute the Moment of Inertia of regular crosssections
		CO5	Express the relationship between the motion of bodies.
17CHE12/22		Engineering Chemistry	Electrochemical & Concentration cells, Classical & modern batteries & fuel cells.

	Engineering Chemistry	Engineering Chemistry	Causes & effects of Corrosion of metals & control of Corrosion.Modification of surface properties of metals to develop resistance to corrosion,wear, tear, impact etc., by electroplating & electrolessplating.
		CO3	Production & Consumption of Energy for Industrilisation of Country & living standards of people. Utilization of solar energy for different useful forms of energy.
		CO4	Replacement of conventional materials by polymers for various applications.
		CO5	Boiler troubles , sewage treatment & Desalination of sea water& over viewing of synthesis, properties & applications of nanomaterials.
17CHEL17/27	Engineering Chemistry Lab	CO1	Handling different types of Instruments & techniques for analysis including pH measurement, Conductivity, Redox titrations
		CO2	Key spectroscopic techniques including Flame photometry & colorimetry
		CO3	Handling apparatus such as Viscometer in determining Viscosity of Various Liquids.
		CO4	Carrying out types of titrations for Estimation of concerned materials using Internal indicator method
		CO5	Carrying out types of titrations for Estimation of concerned materials using comparatively more quantities of materials involved for good results by External indicator or Iodometric method.
17 MAT11	Engineering Mathematics I	CO1	Use nth order derivatives to find Curvature and radius of curvature
		CO2	Use partial derivatives to calculate rates of change of multivariate functions
		CO3	Analyze position, velocity, and acceleration in two or three dimensions using the calculus of vector valued functions.
		CO4	Recognize and solve first-order ordinary differential equations, Newton's law of cooling
		CO5	Use matrices techniques for solving systems of linear equations in the different areas of Linear Algebra.
17 MAT21	Engineering Mathematics 2	CO1	Solve differential equations of electrical circuits, forced oscillation of mass spring and elementary heat transfer.
		CO2	solve partial differential equations fluid mechanics, electromagnetic theory and heat transfer
		CO3	Evaluate double and triple integrals to find area , volume, mass and moment of inertia of plane and solid region.
		CO4	Use curl and divergence of a vector valued functions in various applications of electricity, magnetism and fluid flows.
		CO5	Use Laplace transforms to determine general or complete solutions to linear ODE
17PCD13/23	PROGRAMMING IN C AND DATA STRUCTURES	CO1	Acquire the knowledge of design and development of problem solving skills
		CO2	Understand and describe the basic principles of Programming in C language such as variables and types, including pointers, structures and typedefs
		CO3	Analyze the loops and decision making statements and choose them in problem solving.
		CO4	Develop the modular programming skills.
		CO5	Apply and manipulate dynamics of memory, data structures, data files and preprocessors
17CPL16/26	COMPUTER PROGRAMMING LAB	CO1	Demonstrate the parts of the computer system and adequately explain functioning of computer components.
		CO2	Describe the role of Operating system in computer system and applications of computer networks.

		CO3	Sketch flowcharts for the solution.
		CO4	Use strings, one dimensional and two dimensional arrays with and without pointers and analyze various searching and sorting algorithms.
		CO5	Design and develop maintainable C program for a given problem and algorithm.
17ELN14/24	BASIC ELECTRONICS	CO1	Understand the significance of electronics in different applications &applications of diode in rectifiers, filter circuits and wave shaping and Apply the concept of diode in rectifiers, filters circuits.
		CO2	Design simple circuits like amplifiers (inverting and non inverting), comparators, adders, integrator and differentiator using OPAMPS,
		CO3	Compile the different building blocks in digital electronics using logic gates and implement simple logic function using basic universal gates
		CO4	Understand the functioning of a communication system, and different modulation technologies, and
		CO5	Understand the basic principles of different types of Transducers.