SAPTHAGIRI COLLEGE OF ENGINEERING

Affiliated to VTU, Belagavi & Approved by AICTE, New Delhi
An ISO 9001:2015 and 14001:2015 Certified Institution

COURSE OUTCOMES

First year-2015 scheme (Common to all branches)

Course Code	Course Name	Course Outcomes (COs)
15MAT11	Engineering Mathematics-I	CO1: Solve the problems on nth derivatives of the functions, angle between radius vector and tangent, curvature and radius of curvature. CO2: Find Taylor's and Maclaurin's series of the functions, and to apply L'Hospital rule to evaluate the limits and to solve the problems on Partial differentiation. CO3: Find the velocity, acceleration, gradient, curl, divergence and able to prove the vector identities. CO4: Evaluate the integrals involving $Sin^n x$, $Cos^n x$, $Sin^n x Cos^n x$ between the limits 0 to $\pi/2$. CO5: Solve the ordinary differential equations of first order and first degree. CO6: Solve the system of equations, to find the Eigen value and Eigen vector of a matrix and reducing quadratic form to canonical form.
15PHY12/22	Engineering Physics	CO1: Gain the knowledge about fundamentals of Modern Physics and Quantum Mechanics, applying to wave mechanics. CO2: Discriminate the conductivity of conductors, semiconductors and super conductors based on Quantum theory. CO3: Impart the knowledge about the basic principles and classification of Laser and Optical fibres, their uses in various fields. CO4: Differentiate the crystal systems, properties and crystal structure using XRD CO5: Discuss the formation of Shock waves and change in flow properties across it and its uses. CO6: Know the processing and characterization of Nano materials, their properties and applications.
15CIV13/23	Elements of civil	CO1: Mention the applications of various fields of Civil Engineering.

	engineering and mechanics	CO2: Compute the resultant of given force system subjected to various loads. CO3: Comprehend the action of Forces, Moments and other loads on systems of rigid bodies and compute the reactive forces that develop as a result of the external loads. CO4: Locate the Centroid and compute the Moment of Inertia of regular and built-up sections. CO5: Express the relationship between the motions of bodies and analyze the bodies in motion. CO6: Apply the concepts of kinetics and kinematics, to understand about curvilinear and rectilinear motion and to analyze the various problems based on these.
15EME14/24	Elements 0f Mechanical Engineering	CO1. Explain different sources of energy and its conversion CO2. Explain the conversion of energy by prime movers. CO3. Explain the different machine tool operations and basics of Robotics and Automation. CO4. Explain basic engineering materials and identify its application. CO5. Explain the working principle of refrigeration and air conditioning.
15ELE15/25	Basic Electrical Engineering	CO1: To predict the behavior of electrical and magnetic circuits. CO2: Select the type of generator / motor required for a particular application. CO3: Realize the requirement of transformers in transmission and distribution of electric power and other applications. CO4: Practice Electrical Safety Rules & standards.
15WSL16/26	Work Shop Practice	CO1: Demonstrate the use of fitting tools to make models. CO2: Demonstrate the use of sheet metals tools to make models. CO3: Demonstrate the use of Welding tools to make models.
15PHYL17/27	Engineering Physics Lab	CO1: Formulate, Conduct and inference of the Engineering physics experiments. CO2: Characterize the semiconducting materials. CO3: Determine the physical parameters in optical experiments. CO4: Find mechanical properties of materials. CO5: Identify and verify the passive electronic components
15MAT21	Engineering Mathematics-II	CO1: Solve linear and nonlinear ordinary differential equations. CO2: Form/solve the Partial differential equations.

		CO3: Evaluate the double and triple integrals. CO4: Derive Beta and Gamma functions and its properties. CO5: Find the Laplace Transforms and inverse Laplace transforms of the functions and to solve initial and boundary value problems.
15CHE12/22	Engineering Chemistry	CO1: Electrochemical and concentration cells. Classical & modern batteries and fuel cells. CO2: Causes & effects of corrosion of metals and control of corrosion. Modification of surface properties of metals to develop resistance to corrosion, wear, tear, impact etc. by electroplating and electro less plating. CO3: Production & consumption of energy for industrialization of country and 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 and applies sewage treatment and desalination of sea water, and over viewing of synthesis, properties and applications of nanomaterials.
15PCD13/23	Programming in C and Data structures	CO1: Understand the concepts of C programming CO2: Understand basic programming skills using looping and branching techniques CO3: Understanding and to illustrate the usage of functions and arrays in programming CO4: Get familiarized with the concepts of files and structures CO5: Illustrate the usage of pointers and data structures
15CED14/24	Computer Aided Engineering Drawing	CO1.Demonstrate the usage of CAD software CO2.Draw orthographic projections of points, lines, planes and solids. CO3.Generate the development of lateral surfaces of solids and isometric projections of solids
15ELN15/25	Basic Electronics	CO1: Appreciate the significance of electronics in different applications. CO2:Understand the applications of diode in rectifiers, filter circuits and wave shaping, apply the concept of diode in rectifiers, filters circuits CO3:Design simple circuits like amplifiers (inverting and non inverting), comparators, adders, integrator and differentiator using OPAMPS CO4: Compile the different building blocks in digital electronics using logic gates and

		implement simple logic function using basic universal gates. CO5: Understand the functioning of a communication system, and different modulation technologies. CO6: Understand the basic principles of different types of Transducers.
15CPL16/26	Computer Programming Laboratory	CO1: Draw flowcharts and write Algorithms CO2: Design and develop C problem solving skills CO3: Trace and debug a program CO4: Write C programs using functions and arrays CO5: Use concepts of pointers, structures and files to write C programs
15CHEL17/27	Engineering Chemistry Lab	CO1: Analyze hardness of water and quality of cement. CO2: Analyze copper and iron metal from its alloy and ore. CO3: Analyze waste water and alkalinity of the water. CO4: Estimate the strength and concentration of acids. CO5: Measure the viscosity coefficient of organic liquids.