APPLIED SCIENCE

Course Outcomes

SUB CODE: 101011	Subject: Engineering Mechanics
CO 1	Students will acquire the knowledge of Basic Mathematics and Mechanics by understanding the concepts related to Resolution & Composition of various force systems
CO 2	Students will be able to solve the practical problems related to centroid, moment of inertia and also solve problems related to friction
CO 3	Students will be able to understand and apply the practical applications of equilibrium conditions for coplanar and non coplanar force systems.
CO 4	Students will be able to analyse the different structures such as trusses, frames, cables.
CO 5	Students will be able to calculate position, velocity and acceleration of particle using principles of kinematics
CO 6	Students will be able to correlate the concepts related to power; work and energy to solve practical problems.

SUB CODE: 107009	Subject: Engineering chemistry
CO 1	Apply the different methodologies for analysis of water and techniques involved in softening of water as commodity
CO 2	Select appropriate electro-technique and method of material analysis
CO 3	Demonstrate the knowledge of advanced engineering materials for various engineering applications.
CO 4	Analyze fuel and suggest use of alternative fuels.
CO 5	Identify chemical compounds based on their structure.
CO 6	Explain causes of corrosion and methods for minimizing corrosion

SUB CODE: 104010	Subject: Basic Electronics Engineering
CO 1	**Students will acquire the knowledge of P-N junction diode and its circuits**
CO 2	**Student will able to Identify types of diodes and plot their characteristics and also can compare BJT with MOSFET.**
CO 3	**Student will able to Build and test analog circuits using OPAMP and digital circuits using universal/basic gates and flip flops.**
CO 4	**Student will able to learn how to Use different electronics measuring instruments to measure various electrical parameters.**
CO 5	**Student will able to learn basic principles of communication systems.**
CO 6	**To identify exact use of sensors for different application**

SUB CODE:	Subject: System of Mechanical Engineering
CO 1	Students will be able to describe and compare the conversion of energy from renewable and non-renewable energy sources
CO 2	Students will be able to explain basic laws of thermodynamics, heat transfer and their applications.
CO 3	Students will be able to list down the types of road vehicles and their specifications
CO 4	Students will be able to illustrate various basic parts and transmission system of a road vehicle
CO 5	Students will undestand several manufacturing processes and able to identify the suitable process
CO 6	Students will be able to explain various types of mechanism and its application

Subject code (107002)	Subject: Engineering Physics
CO 1	Students understand basic **concepts and resolve** many engg. And technical problems
CO 2	Students will understand techniques for **measurement**, calculation, controle and analysis of optics and quantum physics.
CO 3	Student will understand recent trends and advances in technology by learning superconductivity, nano-technology and optic fibre.
CO 4	After completing this course students will be able to appreciate and use the methodologies to analyse the **design of a** wide range of engineering systems.
CO 5	students will understand concepts of basic science
CO 6	Students will get knowledge about light, different types of lasers, diodes, solar cells and its mechanism.

SUB CODE: (107001)	Subject: Engineering Mathematics l
CO 1	Students will be able to learn Mean value theorems and its generalizations leading to Taylors and Maclaurin's series useful in the analysis of engineering problems.
CO 2	Students will be able to learn Fourier series representation and harmonic analysis for design and analysis of periodic continuous and discrete systems.
CO 3	Students will be able to learn to deal with derivative of functions of several variables that are essential in various branches of Engineering.
CO 4	To apply the concept of Jacobian to find partial derivative of implicit function and functional dependence. Use of partial derivatives in estimating error and approximation and finding extreme values of the function.
CO 5	By using Matrices Students will easily find Solutions of system of linear equations .
CO 6	Students will be able apply concepts of Eigen values and Eigen vectors in engineering problems

SUB CODE: 110005	Subject: Programming and Problem Solving
CO 1	Inculcate and apply various skills in problem solving
CO 2	Choose most appropriate programming constructs and features to solve the problems in diversified domains.
CO 3	Exhibit the programming skills for the problems those require the writing of well documented programs including use of the logical constructs of language, Python.
CO 4	Demonstrate significant experience with the Python program development environment.

SUB CODE: 103004	Subject: Basic Electrical Engineering
CO 1	Differentiate between electrical and magnetic circuits and derive mathematical relation for self and mutual inductance along with coupling effect.
CO 2	Calculate series, parallel and composite capacitor as well as characteristics parameters of alternating quantity and phasor arithmetic
CO 3	Derive expression for impedance, current, power in series and parallel RLC circuit with AC supply along with phasor diagram.

CO 4	Relate phase and line electrical quantities in polyphase networks, demonstrate the operation of single phase transformer and calculate efficiency and regulation at different loading conditions
CO 5	Apply and analyze the resistive circuits using star-delta conversion KVL, KCL and different network theorems under DC supply.
CO 6	Evaluate work, power, energy relations and suggest various batteries for different applications, concept of charging and discharging and depth of charge.

SUB CODE: 102012	Subject: Engineering Graphics
CO 1	Draw the fundamental engineering objects using basic rules and able to construct the simple geometries.
CO 2	Construct the various engineering curves using the drawing instruments.
CO 3	Apply the concept of orthographic projection of an object to draw several 2D views and its sectional views for visualizing the physical state of the object.
CO 4	Apply the visualization skill to draw a simple isometric projection from given orthographic views precisely using drawing equipment.
CO 5	Draw the development of lateral surfaces for cut section of geometrical solids.
CO 6	Draw fully-dimensioned 2D, 3D drawings using computer aided drafting tools.

SUB CODE: (107008)	Subject: Engineering Mathematics II
CO1	The effective mathematical tools for solutions of first order differential equations that model physical processes such as Newton's law of cooling, electrical circuit, rectilinear motion, mass spring systems, heat transfer etc.
CO2	Advanced integration techniques such as Reduction formulae, Beta functions, Gamma functions, Differentiation under integral sign and Error functions needed in evaluating multiple integrals and their applications.
CO3	To trace the curve for a given equation and measure arc length of various curves.
CO4	the concepts of solid geometry using equations of sphere, cone and cylinder in a comprehensive manner.
CO5	Evaluation of multiple integrals and its application to find area bounded by curves, volume bounded by surfaces, Centre of gravity and Moment of inertia.