

**DEPARTMENT OF SCIENCE AND HUMANITIES 2018 SCHEME-CO's**

Course Code	Course Name	CO Code	CO
18PHY12/22	ENGINEERING PHYSICS	CO1	Understand various types of oscillations and their implications, the role of Shock waves in various fields and recognize the elastic properties of materials for Engineering Applications
		CO2	Realize the interrelation between time varying electric field and magnetic field, the transverse nature of EM waves and their role in optical fiber communication
		CO3	Compute Eigen values, Eigen Functions, momentum of Atomic and subatomic particles using Time Independent 1-D Schrodinger's wave equation.
		CO4	Apprehend theoretical background of laser, construction and working of different types of laser and its applications in different fields
		CO5	Understand various electrical and thermal properties of materials like conductors, semiconductors and dielectrics using different theoretical models
18PHYL16/26	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.
18ELE13/23	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
18EGDL15/25	ENGINEERING GRAPHICS	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.
18CIV14/24	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

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		CO5	Express the relationship between the motion of bodies.
18CHE12/22	Engineering Chemistry	CO1	use of free energy in equilibria, rationalise bulk properties and processes using thermodynamic considerations, electrochemical energy systems
		CO2	Causes and 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 electroless plating
		CO3	Solve problems using recurrence relations and generating functions. : Production and consumption of energy for industrialization of country and living standards of people. Electrochemical and concentration cells. Classical. Modern batteries and fuel cells. Utilization of solar energy for different useful forms of energy
		CO4	Environmental pollution, waste management and water chemistry
		CO5	Different techniques of instrumental methods of analysis. Fundamental principles of nano materials
18CHEL16/26	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
18MAT11	Engineering Mathematics I	CO1	Apply the knowledge of calculus to solve problems related to polar curves and its applications in determining the bentness of a curve
		CO2	Learn the notion of partial differentiation to calculate rates of change of multivariate functions and solve problems related to composite functions and Jacobians
		CO3	Apply the concept of order of integration and variables to evaluate multiple integrals and their usage in computing the area and volumes
		CO4	Solve first order linear/ nonlinear differential equation analytically using standard methods
		CO5	Make use of matrix theory for solving system of linear equations and compute eigenvalues and eigenvectors required for matrix diagonalization process
18MAT21	Engineering Mathematics 2	CO1	Illustrate the applications of multivariate calculus to understand the solenoidal and irrotational vectors and also exhibit the inter dependence of line, surface and volume integrals.
		CO2	Demonstrate various physical models through higher order differential equations and solve such linear ordinary differential equations.
		CO3	Construct variety of Partial differential equations and solution by exact methods/method of separation of variables.
		CO4	Explain the applications of infinite series and obtain series solution of ordinary differential equations
		CO5	Apply the knowledge of numerical methods in the modeling of various physical and engineering phenomena.
18CPS13/23	C Programming for Problem Solving	CO1	Understand the fundamentals of Computer, algorithm, Flowchart, Basic of C Program.
		CO2	Understand the concepts of Conditional Branching, Looping and I/O Operations.
		CO3	Understand the Concepts of Arrays and how to implement in real time Problems

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		CO4	Understand the Concepts of functions and Recursions and how to implement in real time problems.
		CO5	Understand the Concepts of Structures, Pointers and Preprocessor directives
18CPL17/27	COMPUTER PROGRAMMING LAB	CO1	Understand the basic concepts of Computers.
		CO2	Develop the program for mathematical operations and Real time applications.
		CO3	Develop the program for mathematical operations using arrays and functions
		CO4	Develop the program for Real time applications using strings.
		CO5	Develop the program for mathematical operations using pointers.
18ELN14/24	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.
18ELEL27/17	BASIC ELECTRICAL ENGINEERING LAB-CO	CO1	Identifying the common electrical components and measuring instruments
		CO2	compare power factor of lamp
		CO3	determination of impedance of an electrical circuits power consumed by 3 phase load
		CO4	determination of two way and three way lamp
		CO5	understanding of earthing.