

## Course Outcomes for First Year Engineering (All Subjects)

	After the completion of the course, learner will be able to,
<b>FEC101</b>	<b>Engineering Mathematics-I</b>
FEC101.1	Determine powers of complex numbers and roots of equations using D'Moivres Theorem
FEC101.2	Use hyperbolic functions and logarithm of complex numbers to separate into real and imaginary parts
FEC101.3	Compute the partial differentiation of functions of two & three variables.
FEC101.4	Determine nth order derivative and extreme values of a given function.
FEC101.5	Apply the concept of matrices to solve system of linear simultaneous equations.
FEC101.6	Solve the system of Linear Algebraic and transcendental equations numerically
<b>FEC102</b>	<b>Engineering Physics-I</b>
FEC102.1	Describe the concepts of quantum mechanics and its applications of Schrodinger's equation to study the simple physical system.
FEC102.2	Explain the basic principles and methodologies of crystal structures for their application in crystallography using the x-ray diffraction technique.
FEC102.3	Illustrate the concepts of semiconductor physics and applications of semiconductors in electronic devices.
FEC102.4	Apply the concepts of interference in thin films for various measurements.
FEC102.5	Discuss the properties of Superconductors and Supercapacitors to apply them in the novel applications.
FEC102.6	Compare the properties of engineering materials for their current and futuristic applications.
<b>FEC103</b>	<b>Engineering Chemistry-I</b>
FEC103.1	Apply EDTA method to determine the hardness of water.
FEC103.2	Illustrate the concept of fabrication of plastic & viscoelasticity.
FEC103.3	Apply the concept of atomic and molecular orbital theory to calculate bond order & magnetism of molecules.
FEC103.4	Apply Huckel's Rule to find out the aromaticity of a molecule.
FEC103.5	Apply Gibb's phase rule to calculate number of phases, component & degree of freedom of one & two component systems.
FEC103.6	Differentiate ionic, dipolar & Vander waal's intermolecular forces of attraction.
<b>FEC104</b>	<b>Engineering Mechanics</b>
FEC104.1	Compute resultant and support reactions for force systems.
FEC104.2	Determine the position of centroid with respect to a given reference axis.

FEC104.3	Determine friction forces in various engineering applications.
FEC104.4	Establish relation between position, velocity, acceleration & time for a particle.
FEC104.5	Develop kinematic relations for rigid bodies.
FEC104.6	Develop the relation between various forces and motion of a particle using Newton second law, work-energy and impulse momentum principles.
<b>FEC105</b>	<b>Basic Electrical Engineering</b>
FEC105.1	Determine the circuit response / behavior for DC network theorems
FEC105.2	Determine the circuit parameters for single phase AC circuits.
FEC105.3	Illustrate the working of series & parallel resonance circuits.
FEC105.4	Examine voltage/current/power relationship in star and delta for three phase AC circuits.
FEC105.5	Determine efficiency & equivalent parameters of single phase transformer.
FEC105.6	Illustrate the working principle of single phase and three phase machines
<b>FEC201</b>	<b>Engineering Mathematics-II</b>
FEC201.1	Solve differential equations of first order & first degree
FEC201.2	Solve linear differential equations with constant coefficients , variable coefficients of higher order.
FEC201.3	Solve Improper integrals using Beta, Gamma Functions and DUIS
FEC201.4	Compute Area of a Plane region using Double integration
FEC201.5	Determine Volume of Solids using triple integrations.
FEC201.6	Solve Differential equations & Definite integrals Numerically
<b>FEC202.1</b>	<b>Engineering Physics-II</b>
FEC202.1	Employ the knowledge of diffraction of light in various engineering applications.
FEC202.2	Apply the foundation of laser and fiber optics in development of modern communication systems.
FEC202.3	Illustrate the basics of electrodynamics, which are the prerequisites for satellite communications, and antenna theory.
FEC202.4	Explain the fundamentals of theory of relativity and its applications.
FEC202.5	Describe the broad outline of nanotechnology and their application to engineering.
FEC202.6	Interpret the basic sensing techniques for physical measurements in modern instrumentations.
<b>FEC203</b>	<b>Engineering Chemistry-II</b>
FEC203.1	Illustrate anodic & cathodic protection method for prevention of corrosion.
FEC203.2	Determine the volume of oxygen & air required for combustion of fuel.
FEC203.3	Illustrate the concept of Emission Spectroscopy.

FEC203.4	Differentiate the phenomenon of fluorescence & Phosphorescence.
FEC203.5	Apply Nernst equation to calculate EMF of cell.
FEC203.6	Apply 12 principles of green chemistry for synthesis of drugs.
<b>FEC204</b>	<b>Engineering Graphics</b>
FEC204.1	Apply the basic principles of projections in Projection of Lines and Planes
FEC204.2	Apply the basic principles of projections in Projection of Solids & Section of solids
FEC204.3	Apply the basic principles of projections in converting 3D view to 2D drawing.
FEC204.4	Visualize an object from the given two views.
<b>FEC205</b>	<b>Computer Programming</b>
FEC 205.1	Write an algorithm to support Structure Programming approach.
FEC 205.2	Use variables, derived data types and control structures to write c program
FEC 205.3	Decompose a problem into functions and synthesize a complete program
FEC 205.4	Use Array and String for solving complex computational problem
FEC 205.5	Use Structure-Union for solving complex computational problem
FEC 205.6	Use Pointers for solving complex computational problem
<b>FEC206</b>	<b>PCE-I theory</b>
FEC206.1	Interpret verbal & non-verbal cues for effective communication at workplace and social situations.
FEC206.2	Choose appropriate vocabulary and avoid grammatical errors in oral and written communication.
FEC206.3	Apply reading and writing strategies for faster comprehension and summarization of texts.
FEC206.4	Develop writing skills required for well-structured business letters and technical documents.
FEC206.5	Apply effective writing skills to frame definition, user instruction and description of a technical object or scientific process.
FEC206.6	Make use of learned social etiquettes and personality traits to interact in all kinds of situations.