

Institute of Engineering

Department of Engineering Sciences & Mathematics

Course (2015 Pattern)	Course Outcomes	
107001 Engineering Mathematics I	107001.1	Able to solve the system of linear equations arising in all engineering fields, using matrix methods, stability of engineering systems where knowledge of Eigen values and Eigen vectors are essential.
	107001.2	Able to understand and solve algebraic and transcendental equations.
	107001.3	Able to do the error analysis and approximations.
	107001.4	Able to solve ordinary and partial differential equations.
	107001.5	Able to understand engineering applications such as vibration theory, heat transfer, electrical circuits.
	107001.6	Able to find stationary values of functions (Maxima & Minima), arising in optimization problems.
107009 Engineering Chemistry	107009.1	Able to understand the technology involved in improving quality of water for its industrial used.
	107009.2	Able to understand the basic concepts of electro analytical techniques that facilitate rapid and reliable measurements.
	107009.3	Able to understand the chemical structure of polymer and its effect on their various properties when used as an engineering material to lay foundation for the application of polymer for specific application and as the composite material.
	107009.4	Able to do study of fossil fuel and derived fuel, its properties and applications.
	107009.5	Able to insight into nonmaterial and composite material aspect of modern chemistry.
	107009.6	Able to understand the principle of chemical and electrochemical reactions causing corrosion and method used for minimizing corrosion.

107002 Engineering Physics	107002.1	Able to develop understanding of interference, diffraction and polarization, connect it to few engineering applications.
	107002.2	Able to learn basics of lasers and optical fibers and their use in some applications.
	107002.3	Able to understand concepts and principles in quantum mechanics, relate them to some applications.
	107002.4	Able to understand the theory of semiconductors and their applications in some semiconductor devices.
	107002.5	Able to summarize basics of Magnetism and superconductivity. Explore few of their technological applications.
	107002.6	Able to comprehend use of concepts of physics for Non destructive Testing, learn some properties of Nanomaterials and their applications.
103004 Basic Electrical Engineering	103004.1	Able to understand basic concept of EMF & Current along with resistance, also Energy conversion form.
	103004.2	Able to differentiate between electrical and magnetic circuits and derive mathematical relation for self and mutual inductance along with coupling effect.
	103004.3	Able to demonstrate the operation of single phase transformer and calculate efficiency and regulation at different loading conditions. Also concept of electrostatics.
	103004.4	Able to derive expression for impedance, current, power in series and parallel RLC circuit with AC supply along phasor diagram.
	103004.5	Able to understand series and parallel AC circuits and also relate phase and line electrical quantities in polyphase networks.
	103004.6	Able to understand DC circuits and apply various theorems for analysis of circuits.
104012 Basic Electronics Engineering	104012.1	Able to apply knowledge of some basic electronic components and circuits.
	104012.2	Able to apply basics of diode and transistor circuits.
	104012.3	Able to understand working of some IC based circuits.
	104012.4	Able to apply logic gates, and their usage in digital circuits.
	104012.5	Able to understand working of some power electronic devices, transducers and application of transducers.
	104012.6	Able to understand basic aspect of electronic communication systems.

101005 Basic Civil and Environmental Engineering	101005.1	Able to learn the brief introduction of all area covered under the head of Civil Engineering.
	101005.2	Able to understand the need of monitoring land, water and air pollution and take measures to control them. Fast growing industrialization has put heavy responsibilities on engineers to preserve and protect the environment.
	101005.3	Able to understand the basic concepts of ecology and ecosystem facilitate reliable ecological system.
	101005.4	Able to get aware about various civil engineering software's used in surveying Like GIS, Auto Civil.
	101005.5	Able to measure and map the earth surface and learn about various topographical features of land.
	101005.6	Technology involved in improving quality of cleaner environment.
102006 Engineering Graphics-I	102006.1	Able to perform basic sketching techniques and hand letter will improve.
	102006.2	Able to imagine the objects to convert 3D into 2D drawing.
	102006.3	Able to draw orthographic projection and section views.
	102006.4	Architectural and engineering scales will increase.
	102006.5	Able to read and produce engineering drawing.
	102006.6	Ability to create 3D drawing.
110003 Fundamental Programming Language-I	110003.1	Able to use modular programming approach in diversified problem domains.
	110003.2	Able to apply programming logic to solve real world problems.
	110003.3	Able to decide effectiveness of computer based solutions.
111007 Workshop Practices	111007.1	Able to know different types of woodworking hand tools & joints.
	111007.2	Able to know different types of fitting operations, drilling & tapping
	111007.3	Able to know different shop-floor safety measures.
	111007.4	Able to know different forging operations.
	111007.5	Able to know metal casting & Plastic molding operations.
	111007.6	Able to know different machine tools.

107008 Engineering Mathematics II	107008.1	Able to make Modeling of various physical systems such as Newton's Law of cooling, L-C-R Circuits, rectilinear motion, mass-spring systems heat transfer etc.
	107008.2	Able to design and analysis of continuous and discrete system, where knowledge of Fourier series and Harmonic analysis is required
	107008.3	Able to use advanced techniques to evaluate integrals.
	107008.4	Able to measure of arc lengths of various curves.
	107008.5	Able to understand the Sphere, Cone and Cylinder that arise in vector calculus, electro-magnetic field theory, cad-cam computer graphics etc.
	107008.6	Able to understand the multiple integrals which are used in calculating areas, volumes, mean and RM values, mass, moment of inertia and centre of gravity.
101011 Engineering Mechanics	101011.1	Able to study of all force system.
	101011.2	Able to understand equilibrium of force system.
	101011.3	Mechanics also involved the kinematics of particles, Particle dynamics, energy methods for particles, kinematics of plane motion of rigid bodies, energy impulse momentum method and vibration.
	101011.4	Able to analyze structure and friction.
	101011.5	Able to understand Rectilinear motion of particles.
	101011.6	Able to learn about the curvilinear motion of particles.
102013 Basic Mechanical Engineering	102013.1	Able to acquire the knowledge of mechanical engineering.
	102013.2	Able to describe the scope of mechanical engineering with multidisciplinary industries.
	102013.3	Able to understand and identify common machine elements with their functions and power transmission devices.
	102013.4	Able to learn conventional machine tools and understand the concept of design in mechanical engineering.
	102013.5	Able to understand basic concept of thermodynamics, applied to industrial application.
	102013.6	Able to learn principles of energy conversion system and power plants.
110010 Fundamental Programming Language-II	110010.1	Able to develop programs using object oriented concepts.
	110010.2	Able to design and develop web pages using HTML.
	110010.3	Able to design and develop mobile application using Android SDK.
	110010.4	Able to design and develop simple application using Embedded Programming.