Semester – I

Unique Course Number: FEC101 **Course Name: Engineering Mathematics-I**

Unique CO Number	Course Outcome (CO) Statement
FEC1011	Apply De Moivre's Theorem to obtain the powers and roots of a complex number.
FEC1012	Use the relation between circular and hyperbolic functions to separate into real and imaginary parts of hyperbolic and logarithmic functions.
FEC1013	Apply the concept of partial differentiation to find the total derivative and extreme values & Apply Euler's Theorem and Corollaries to Homogeneous and Non-Homogeneous functions
FEC1014	Calculate the rank of a matrix by reducing it to Echelon form, Normal form, and use this concept to solve the system of linear equations. & compare the method with the Gauss-Seidel Iteration Method.
FEC1015	Apply Numerical Techniques to solve the Transcendental equations
FEC1016	Develop skills to find the nth Derivative of function/ product of functions.

Unique Course Number: FEC102 **Course Name: Engineering Physics-I**

Unique CO Number	Course Outcome (CO) Statement
FEC1021	Recall the basic principles, methodologies and crystal structures.
FEC1022	Understand and describe the concepts pertaining to quantum mechanics, crystallography and semiconductor physics.
FEC1023	Discuss the principles of interference in thin films, superconductivity and engineering materials.
FEC1024	Apply the theory of quantum mechanics, crystallography and semiconductor physics for explaining the structure and functionality of atoms, crystals and devices.
FEC1025	Develop and utilize the concepts of interference in thin films, superconductivity and engineering materials for interpretation under varying conditions.
FEC1026	Demonstrate the use of concepts learnt in practical applications.

Unique Course Number: FEC103 **Course Name: Engineering Chemistry –I**

Unique CO Number	Course Outcome (CO) Statement
FEC1031	Discuss the basic concepts of engineering chemistry such as atomic and molecular structure, intermolecular forces, phases, polymers and hardness of Water.
FEC1032	Apply the concept of microscopic chemistry in terms of atomic and molecular orbital theory and relate it to molecular structure.
FEC1033	Illustrate the knowledge of various types of intermolecular forces and relate it to properties of materials.
FEC1034	Interpret phase transformation of a given material with the concept of phase Rule.
FEC1035	Select polymers and its fabrication method in various industrial fields.
FEC1036	Analyze the quality of water and suggest method for treatment.

Unique Course Number: FEC104 **Course Name: Engineering Mechanics**

Unique CO Number	Course Outcome (CO) Statement
FEC1041	Explain the basic concepts of Engineering Mechanics such as System of Coplanar Forces and Non-Coplanar Forces, Centroid, Equilibrium, Friction, Kinematics of particle and rigid body & Kinetics of particle.
FEC1042	Apply the concept of Varignon's theorem, center of gravity, law of equilibrium, laws of friction, Newton's laws of motion to different engineering applications.
FEC1043	Illustrate the knowledge of various types of systems of forces, different types of motions with & without considering forces and relate it to different engineering applications.
FEC1044	Interpret the state of the body either at rest or in motion by using the concept of angle of repose & cone of friction.
FEC1045	Analyze Equilibrium conditions of bodies, forces in space, Friction, Impact & Kinematics of rigid bodies in various industrial applications.
FEC1046	Analysis of beam and friction in various bodies by using conditions of equilibrium and determine the support reactions, unknown loads on the beam & coefficient of friction for different surfaces.

Unique Course Number: FEC105 **Course Name: Basic Electrical Engineering**

Unique CO Number	Course Outcome (CO) Statement
FEC1051	Explain methodologies, procedures and principles of basic electrical engineering
FEC1052	Describe the various electrical circuit theorems and principles.
FEC1053	Explain the principle and working of static electrical machines.
FEC1054	Explain the principle and working of rotating electrical machines.
FEC 1055	Apply network theorems to circuits to determine the circuit response
FEC 1056	Analyze behavior of basic electrical circuits.

Unique Course Number: FEL101 **Course Name: Engineering Physics-I**

Unique LO Number	Lab Outcome (LO) Statement
FEL1011	To recall the basic concepts of Engineering Physics in experiments allied with crystallography, thin film interference, semiconductors, quantum mechanics and supercapacitors.
FEL1012	To interpret and demonstrate understanding of the theory and relate it to the principles established for experimentation.
FEL1013	To select, organize and apply appropriate technique and build up the experimental set up for respective experiments.
FEL1014	To compute and examine the observations and outputs obtained in respective experiments with the established procedures and theoretical formula
FEL1015	To evaluate the results obtained in the experiments with respect to theoretical principles and concepts.
FEL1016	To apply the knowledge and concepts of Physics in designing and developing miniature projects.

Unique Course Number: FEL102 **Course Name: Engineering Chemistry-I**

Unique LO Number	Lab Outcome (LO) Statement
FEL1021	Explain the principle for determination of chloride content, hardness, pH in the given sample.
FEL1022	Describe the procedure of the experiment.
FEL1023	Solve the numerical equation using experimental findings.
FEL1024	Select and use the appropriate Apparatus/Instrument for the experiment.
FEL1025	Infer the conclusion from the experimental observations.
FEL1026	Assess the quality and predict application

Unique Course Number: FEL103 **Course Name: Engineering Mechanics**

Unique LO Number	Lab Outcome (LO) Statement
FEL1031	Explain the principle of the experiment.
FEL1032	Describe the procedure of the experiment.
FEL1033	Solve the numerical equation using experimental findings.
FEL1034	Select and use the appropriate Apparatus/Instrument for the experiment.
FEL1035	Infer the conclusion from the experimental observations.
FEL1036	Assess the quality and predict application

Unique Course Number: FEL104 **Course Name: Basic Electrical Engineering**

Unique LO Number	Lab Outcome (LO) Statement
FEL1041	Recall and implement electric circuits.
FEL1042	Explain the theoretical concept and relate it with practical behavior of electric circuits.
FEL1043	Describe the construction and working of electrical machines.
FEL1044	Demonstrate correct usage of a method or procedure for electric circuits.
FEL1045	Identify the assumptions and differentiate between theoretical and practical results, within permissible limits of errors in the electric circuit.
FEL1046	Analyze the losses and efficiency of static electrical machines.

Unique Course Number: FEL105 **Course Name: Basic Workshop practice-I**

Unique LO Number	Lab Outcome (LO) Statement
FEL1051	Study and use of hand tools and power tools
FEL1052	Performing marking, punching, cutting, filling, drilling, tapping etc. operations on fitting job
FEL1053	Welding of two metal parts by using butt and lap joint
FEL1054	Identify different components of computer hardware & troubleshooting
FEL1055	Installation of OS, device drivers and application software
FEL1056	Identify network devices, network cables & crimping