



Agnel Charities'

Fr. C. Rodrigues Institute of Technology, Vashi, Navi Mumbai.

***Course Outcomes of
First Year Engineering
Academic Year 2022-23***



Subject Code	Subject Name	CO-ID	CO-Statement
SEMESTER – I			
FEC101	ENGINEERING MATHEMATICS-I	FEC101.1	Apply the basic concepts of Complex numbers to solve problems in the domain of Complex number.
		FEC101.2	Apply the basic principles of partial differentiation to find the maxima & minima of a function.
		FEC101.3	Apply the basic concepts of successive differentiation to find the expansion of functions using Taylor and Maclaurin Series.
		FEC101.4	Apply the basic concepts and operations of Matrices to solve simultaneous algebraic equations.
		FEC101.5	Adapt SCILAB programming techniques to find the numerical solutions of linear equations.
FEC102	ENGINEERING PHYSICS-I	FEC102.1	The learner will be able to utilize the fundamentals of quantum mechanics to solve one dimensional motion of particles.
		FEC102.2	The learner will be able to apply the concept of miller indices to identify the crystal planes in cubic structure and to analyse the crystal structure.
		FEC102.3	The learner will be able to apply the basic knowledge of semiconductors and applications of semiconductors in electronic devices.
		FEC102.4	The learner will be able to employ the concept of interference in thin films in various measurements.
		FEC102.5	The learner will be able to discuss the properties of Superconductors, Supercapacitors and engineering materials to apply them in novel applications.
FEC103	ENGINEERING CHEMISTRY -I	FEC103.1	Learners will be able to use the concept of microscopic chemistry in terms of molecular orbital theory and relate it to the structure, bonding and stability of molecules.
		FEC103.2	Learners will be able to apply the concept of intermolecular forces, critical phenomena in relation with real gases.
		FEC103.3	Learners will be able to interpret various phase transformations in chemical system by using phase rule equations.
		FEC103.4	Learners will be able to use the knowledge of polymeric materials, their synthesis, properties, fabrication methods and conducting polymers in various industrial fields.
		FEC103.5	Learners will be able to analyse the quality of water and suggest suitable methods of treatment.
FEC104	ENGINEERING MECHANICS	FEC104.1	Learner will be able to Apply the concepts of static equilibrium to find resultant and reactive forces.
		FEC104.2	Learner will be able to Apply the concepts of Centroid to locate it for a given 2-D body.
		FEC104.3	Learner will be able to Apply the Laws of Friction to find its effect in real life application under static



			equilibrium.
		FEC104.4	Learner will be able to Analyse the motion of a particle using kinematic equations.
		FEC104.5	Learner will be able to Analyse the General plane motion of a rigid body for locating ICR.
		FEC104.6	Learner will be able to Analyse motion of a particle using Kinetic relations
FEC105	BASIC ELECTRICAL ENGINEERING	FEC105.1	Learner will be able to Study Kirchhoff laws and apply them to solve problems on Mesh, Nodal analysis and network theorems.
		FEC105.2	Learner will be able to understand AC circuit fundamentals, apply the knowledge to analyze the behaviour of series and parallel AC circuits.
		FEC105.3	Learner will be able to Identify three-phase star/delta connection and apply appropriate voltage-current relationships.
		FEC105.4	Learner will be able to Analyze single-phase transformer.
		FEC105.5	Learner will be able to Know the working and classify 3-phase induction motor.
		FEC105.6	Learner will be able to Know the working principle of single-phase induction motor and classify stepper motors.
SEMESTER – II			
FEC201	ENGINEERING MATHEMATICS - II	FEC201.1	Illustrate the basic concepts of first order & first-degree differential equations and apply it to solve problems in the field of engineering.
		FEC201.2	Illustrate the basic concepts of higher order differential equations and apply it to solve problems in the field of engineering.
		FEC201.3	Illustrate the concepts of Beta & Gamma functions to solve improper integrals.
		FEC201.4	Illustrate the basic concepts of Double integration and triple integration of different co-ordinate systems and apply it to solve problem based on area of bounded regions, volume of solids.
		FEC201.5	Adapt SCILAB programming techniques to find the numerical solutions of definite integrals.
FEC202	ENGINEERING PHYSICS-II	FEC202.1	The learner will be able to employ the knowledge of diffraction through slits in various measurements.
		FEC202.2	The learner will be able to utilize the basic concepts of laser and optical fibre in practical applications.
		FEC202.3	The learner will be able to employ the fundamentals of electrodynamics with required mathematical concepts in formulation of Maxwell's equations.
		FEC202.4	The learner will be able to interpret the basic concepts of relativity.
		FEC202.5	The learners will be able to explore the fundamentals of nanotechnology and the basic sensing techniques for



			advanced applications.
FEC203	ENGINEERING CHEMISTRY-II	FEC203.1	Learners will be able to use the concept of spectroscopy and its types along with the phenomena of fluorescence and phosphorescence.
		FEC203.2	Learners will be able to apply the concept of electrode potential, reference electrode and Nernst theory to electrochemical cells.
		FEC203.3	Learners will be able to identify different types of corrosion and suggest control measures for the same.
		FEC203.4	Learners will be able to relate the principles of green chemistry to synthesize various products and drugs and interpret its impact on the environment.
		FEC203.5	Learners will be able to use the knowledge of determination of quality of fuel and quantify the oxygen required for combustion of fuel.
FEC204	ENGINEERING GRAPHICS	FEC204.1	Learner will be able to Apply the basic principles of projections to plot views of Lines with different orientations.
		FEC204.2	Learner will be able to Apply the basic principles of Projections to draw different views of 2D and 3D Geometries.
		FEC204.3	Learner will be able to Apply the basic principles of engineering drawing to plot sectional views.
		FEC204.4	Learner will be able to Apply the basic principles of projections in converting Isometric drawing into Orthographic Views
		FEC204.5	Learner will be able to Interpret a given drawing to plot the missing view.
		FEC204.6	Learner will be able to Apply the basic principles of projections in converting Orthographic Views into Isometric drawing.
FEC205	C.- PROGRAMMING	FEC205.1	Formulate algorithm and design flow chart for a simple problem and translate them to programs in C language.
		FEC205.2	use control structure concepts in C programming for a given problem
		FEC205.3	define functions or recursive functions, decompose a problem into functions and synthesize a complete program in C
		FEC205.4	define one or two dimensional arrays and solve problem involving numbers or strings in C
		FEC205.5	declare and define structure, nested structure and union in C and solve problem involving different types of data
		FEC205.6	declare pointers, perform operations on pointers in C and use dynamic memory allocation
FEC206	PROFESSIONAL COMMUNICATION & ETHICS-I	FEC206.1	Learner will be able to engage within groups clearly and effectively to speak and to write.
		FEC206.2	Learner will be able to convincingly present before an audience using accurate and appropriate lexis and enhanced digital content exhibiting the attitude leadership and team building.



		FEC206.3	Learner will be able to Read, analyze objectively and summarize graphically and paraphrase effectively.
		FEC206.4	Learner will be able to Communicate effectively along the various channels of communication within a business organization and follow the general code of conduct of the organization.
		FEC206.5	Learner will be able to write a set of effective and easy to understand technical description and instructions and convey the same using global information technology with appropriate netiquettes
		FEC206.6	Learner will be able to understand technical description and instructions and convey the same using global information technology with appropriate netiquettes.