

Department of Chemical Engineering
Second Year Engineering
SEM-III

Subject Code	Subject	Course Outcomes	
207004	Engineering Mathematics-III	CO1	Solve higher order linear differential equations and apply to modelling and analysing heat and mass transfer systems
		CO2	Evaluate Laplace Transform and apply it to solve Differential Equations
		CO3	Evaluate Fourier Transform and apply it to solve Integral Equations.
		CO4	Apply statistical methods like correlation and regression for data analysis and predictions. Apply the concepts of probability and probability distributions for data analysis, sampling and testing.
		CO5	Analyze the vector fields by performing vector differentiation & Apply vector differentiation and integration to compute line, surface and volume integral.
		CO6	Solve various partial differential equations such as wave equation, one and two dimensional heat flow equations
209341	Industrial Chemistry I	CO1	Apply the concept of bonding and reactivity for different molecules.
		CO2	Estimate the kinetics of reaction and analyze the factors controlling the rate of reactions.
		CO3	Analyze the given chemical substance by different Instrumentation techniques
		CO4	Estimate the quantity of solute and synthesize the solution based on the properties.
		CO5	Evaluate the mechanism of reactions and apply proper factor for increasing the yield of the desired product
		CO6	Apply the basic concepts of dyes and synthesize industrially important dyes
209342	Fluid Mechanics	CO1	Able to understand the different fluid properties and rheological behaviour of fluids.
		CO2	Able to apply the equation of fluid statics and select manometers for the pressure measurement.
		CO3	Able to analyze basic equations of fluid flow and their applications to determine fluid flow rate by different devices.
		CO4	Able to formulate mathematical equations for flow of fluid through different systems and determine different losses occurring in pipelines.

		CO5	Able to develop correlations amongst the system variables using dimensional analysis and to study concept of boundary layer theory.
		CO6	Able to understand the fluidization phenomena and select valves and pumps for transportation of fluid through pipelines.
209343	Engineering Materials	CO1	Describe scope of Engineering materials, properties of materials and Selection of materials
		CO2	Test different materials and describe organic materials.
		CO3	Define corrosion, describe it's types, Control and prevent corrosion.
		CO4	Describe polymers Compare types of polymerization and classify plastics, rubbers
		CO5	Describe Nanomaterial and its synthesis
		CO6	Test internal properties of engineering materials
209344	Process Calculations	CO1	Able to calculate the composition of the materials
		CO2	Able to apply the various laws governing solid, liquid and gas phases
		CO3	Able to relate material balance for various unit operations or processes in chemical engineering
		CO4	Able to estimate the energy requirement for various unit operations or processes in chemical engineering
		CO5	Able to Calculate amount of product with Purity and raw material required.
		CO6	Able to decide good quality fuel and air requirement for combustion of fuel.
209345	Soft Skills	CO1	Express effectively through verbal or oral communication and improve listening skills.
		CO2	Write precise brief or reports and technical documents
		CO3	Prepare for group discussions/ meetings/ interviews and presentations
		CO4	Explore goal or target setting, self-motivation and practicing creative thinking.
		CO5	Operate effectively in multi-disciplinary and heterogeneous teams through the knowledge of teamwork.
		CO6	Develop leadership skills through strong inter-personal relationships and conflict management.

SEM-IV

Subject Code	Subject	Course Outcomes	
209347	Industrial Chemistry II	CO1	Able to apply the concept of naturally occurring polymer and applying polymers synthesized by green routes
		CO2	Able to apply the theory of synthesis of complex and evaluate their properties
		CO3	Able to analyse the given chemical substance by different Instrumentation techniques
		CO4	Able to apply surface chemistry to determine catalyst properties
		CO5	Able to understand concept of isomerism and analyse different isomers and their properties
		CO6	Able to understand concept of thermodynamics and apply in chemical industries
209348	Heat Transfer	CO1	Able to Understand to solve problems related to heat transfer in chemical process industries
		CO2	Ability to comprehend and solve conduction, convection and radiation heat transfer problems
		CO3	Able to explain the mechanism of heat transfer to a fluid in motion over a solid surface
		CO4	Able to perform a general Heat balance for various types of heat exchangers given that the heat exchanger
		CO5	To Evaluate heat transfer with phase change during boiling and condensation
		CO6	To Calculate radiation heat transfer between 'black' surfaces using electromagnetic radiation principles
209349	Principles of Design	CO1	To Estimate Stress Strain Behaviour of Various Machine Elements
		CO2	To Test Force Analysis and Estimate Bending Moments of Machine Elements
		CO3	To Determine Diameter, Thickness and Power Transmission of Shaft
		CO4	To Evaluate Strength of Different Joints and Tension in Drives
		CO5	To Implement Stress Analysis and Evaluate Diameter and Thickness of Thin Pressure Vessel
		CO6	To Implement Stress Analysis and Evaluate Diameter and Thickness of Thick Pressure Vessel
209350	Chemical Technology I	CO1	To apply various unit process for chlor-alkali industry
		CO2	To differentiate processes for producing phosphates and potassium related products
		CO3	To demonstrate detailed process for production of nitrogenous products
		CO4	To apply various processes used in surfactant manufacturing sector
		CO5	To apply various methods of polymerization techniques used in plastic industry

		CO6	To illustrate different process involved in petroleum processing industry
209351	Mechanical Operations	CO1	To analyze particle size distribution and to evaluate screen effectiveness and power required for size reduction.
		CO2	To estimate the particle behaviour in suspensions and use the information to determine thickener height & diameter.
		CO3	To demonstrate various beneficiation Operations in Process Industries
		CO4	To analyze Performance of mixers and estimate power consumptions in mixing and agitation.
		CO5	To examine the filtration parameters so as to estimate rate & time required for filtration operation.
		CO6	To differentiate techniques for handling & conveying of solid.