

Course Outcome for all subjects B.E.-Sem VII & VIII (Chemical Engineering)

CHC701	Process Equipment Design (PED)
Course Code	Course Outcomes
CHC701.1	Remember the basics concepts of design according to codes & standards for Chemical process equipment design and basics of flow diagrams.
CHC701.2	Understand basic of design of heat transfer equipment.
CHC701.3	Understand the stress analysis study for tall column shell and design of mass transfer equipment's
CHC701.4	Acquire basic of construction and design of high pressure vessels
CHC701.5	Interpret appropriate design of Crystallizers, Filters and Dryers
CHC701.6	Achieve adequate perspectives of pipeline design and selection of appropriate pipeline according to the nature of fluids

CHC702	Process Engineering (PE)
Course Code	Course Outcomes
CHC702.1	Understand role and various activities of process engineer in industries and criteria for the selection of best process alternative
CHC702.2	Acquire the knowledge of how to represent the process by various means such as PFD, P&ID and their importance in process development
CHC702.3	Synthesize the chemical process flow sheets using design heuristics
CHC702.4	Evaluate the material and energy requirements for the process by performing mass and energy balance around process flow sheet and utility requirement through techniques like pinch analysis
CHC702.5	Apply certain design heuristics and thumb rules to design process equipments and evaluate their cost
CHC702.6	Analyze and synthesize the most suitable control strategies necessary to avoid run away of the process as well they will be able to

	understand and analyze safety aspects of process
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CHC703	Process Dynamics & Control (PDC)
Course Code	Course Outcomes
CHC703.1	The student will be able to develop dynamic models for systems
CHC703.2	The students must be able to derive transfer function equations for first order, second order and other systems.
CHC703.3	The students will be able to study responses of first and second order systems in Time, Laplace and Frequency domains
CHC703.4	The student will be able to understand feedback and feedback control mode, servo and regulator problem, basic control modes (P,PI,PID), design and tune controllers for important chemical processes
CHC703.5	The students should be able to study stability of process by different methods such as Routh criteria, Root locus, Bode plots, Nyquist plots

CHC704	Petroleum Refining Technology (PRT)
Course Code	Course Outcomes
CHE704.1	Understand origin of petroleum, its composition, overall refinery structure and various petroleum refinery products
CHE704.2	Acquire knowledge about assay of crude oil and important physical properties of petroleum products
CHE704.3	Demonstrate Crude Oil Processing & Refining, various Fractionation of Petroleum processes, and its applications in chemical industries.
CHE704.4	Identify various Treatment techniques of Gasoline, Kerosene, Lubes & Wax
CHE704.5	Comprehend with Catalytic Cracking & Thermal Processes
CHE704.6	Understand Asphalt Technology & Environmental issues of petroleum industry

CHC801	Modelling, Simulation & Optimization (MSO)
Course Code	Course Outcomes
CHC801.1	Formulate linear balance equations for single units as well as complete flow sheet.
CHC801.2	Formulate systems of non-linear equations for single and multiple units.
CHC801.3	Estimate solution of non-linear equations arising in modeling of units by using different numerical methods
CHC801.4	Analyze flowsheets to simplify the same by partitioning-tearing algorithms and understand different solution strategies
CHC801.5	Demonstrate simulation of individual unit as well as overall flowsheet
CHC801.6	Use various numerical method to solve optimization problems

CHC802	Project Engineering & Entrepreneurship Management (PEEM)
Course Code	Course Outcomes
CHC802.1	To understand scientific principles of project management to manage projects in process industries
CHC802.2	To understand feasibility reports, finances, clearances, and it's relevance to real life constraints
CHC802.3	To understand contract management and project organization
CHC802.4	To understand project planning, project scheduling-monitoring-control techniques and material management techniques and motivated to become entrepreneurs

CHC803	Environmental Engineering (EE)
Course Code	Course Outcomes
CHC803.1	To have knowledge of air, water & solid pollutants & noise sources & their adverse effects
CHC803.2	Understand sampling, measurement & standard of water quality
CHC803.3	Design of various equipment involved in waste water treatment plant
CHC803.4	Understand sampling, measurement & control method for air pollutant & meteorological aspects of air pollutant dispersion

CHC804	Energy System Design (ESD)
Course Code	Course Outcomes
CHC804.1	Acquire knowledge about global and Indian energy scenario in term of energy resources, reserves, demand, supply and intensity
CHC804.2	Understand the concept, purpose and methodology of energy audit and apply the same to evaluate energy audit for process industries
CHC804.3	Acquire knowledge about various energy efficient technologies related to different process systems and apply the same while designing the process
CHC804.4	Evaluate energy requirement of process and integrate the energy by synthesizing heat exchanger network by applying pinch technology to conserve energy
CHC804.5	Understand major heat integration techniques such as multiple effect evaporation and multiple effect distillation to improve energy efficiency and apply the same to design those systems
CHC804.6	Acquire knowledge about various techniques of cogeneration and waste heat recovery, their benefits and importance in energy conservation

CHC805 (Elective)	Advanced Separation Technology (AST)
Course Code	Course Outcomes
CHE805.1	Acquire basic knowledge of Adsorption process, its basic principle and design of same.
CHE805.2	Apply knowledge of foam fractionation in separation of oil-aqueous systems
CHE805.3	Learn different chromatographic technique that are used in separation processes
CHE805.4	Understand principle behind different chromatography techniques
CHE805.5	Demonstrate understanding of different membrane processes, material used for preparation of membrane, characterization techniques used for it, preparation methods for membrane.
CHE805.6	Understand transport phenomena in membranes and study different membrane module

CHC805 (Elective)	Biotechnology (BT)
Course Code	Course Outcomes
CHE805.1	Demonstrate the knowledge of biotechnology in various fields and understand cell and metabolism.
CHE805.2	Acquire deep knowledge of biological polymers
CHE805.3	Acquire deep knowledge of enzymes.
CHE805.4	Understand other uses of biotechnology in medical field and industrial genetics.
CHE805.5	Understand how biotechnology helps in agricultural, food and beverage industry, chemical industries, environment and energy sectors.
CHE805.6	Understand how biological products are recovered.