



AISSMS
COLLEGE OF ENGINEERING

ज्ञानम् सकलजनहिताय
Accredited by NAAC with "A+" Grade



Department of Chemical Engineering

CO-PO & CO-PSO Mapping 2015 Course

SE Term-1



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Department of Chemical Engineering

CO – PO – PSO Mapping

Engineering Mathematics - III (207004)

Course Outcome:

On completion of the course, students will be able to	
207004.1	Solve higher order linear differential equations and its applications to engineering problems in their disciplines.
207004.2	Apply Integral transform techniques such as Fourier transform to solve differential equations involved in Liquid level systems and related engineering applications.
207004.3	Apply Integral transform techniques such as Laplace transform to solve differential equations involved in Vibration theory, Heat transfer, and related engineering applications.
207004.4	Perform vector differentiation, analyze the vector fields and apply to fluid flow problems.
207004.5	Perform vector integration, analyze the vector fields and apply to fluid flow problems.
207004.6	Solve various partial differential equations such as wave equation, one and two dimensional heat flow equations.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C207004.1	3	2	1		1							
C207004.2	3	2	1		1							
C207004.3	3	2	1		1							
C207004.4	3	2	1		1							
C207004.5	3	2	1		1							
C207004.6	3	2	1		1							

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication

Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software like AutoCAD, MATLAB and UNISIM.

CO - PSO Mapping:

CO	PSO1	PSO2
C207004.1	1	1
C207004.2		
C207004.3		
C207004.4	1	1
C207004.5		1
C207004.6	1	1



Department of Chemical Engineering

CO – PO – PSO Mapping

Chemistry-I (209341)

Course Outcome:

On completion of the course, students will be able to	
209341.1	Apply the knowledge of bonding and reactivity of organic molecules.
209341.2	Calculate the order of simple and complex chemical reactions.
209341.3	Understand the principles of analytical instruments (UV, IR, GC and HPLC).
209341.4	Calculate the molar mass from colligative properties of solutions.
209341.5	Predict the inorganic reaction mechanisms.
209341.6	Analyze the structure, preparations and reactions of heterocyclic compounds and dyes.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C209341.1	2	2	2	1					1	2		
C209341.2	2	2	2	1					1	2		
C209341.3	2	2	2	1	2				1	2		
C209341.4	2	2	2	1					1	2		
C209341.5	2	2	2	1					1	2		
C209341.6	2	2	2	1					1	2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
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CO - PSO Mapping:

CO	PSO1	PSO2
C209341.1	1	
C209341.2	1	
C209341.3	1	2
C209341.4	1	
C209341.5	1	
C209341.6	1	



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Department of Chemical Engineering

CO – PO – PSO Mapping

Fluid Mechanics (209342)

Course Outcome:

On completion of the course, students will be able to	
209342.1	Apply basic concepts of fluid mechanics and determine properties of fluids.
209342.2	Derive fluid statics laws and apply it to pressure measuring devices in chemical industry.
209342.3	Analyze basic equations of fluid flow and their applications to determine fluid flow rate by different devices.
209342.4	Formulate mathematical equations for flow of fluid through different systems and determine different losses occurring in pipelines.
209342.5	Develop relationships among process/system variables using dimensional analysis.
209342.6	Identify and apply different valves and pumps for transportation of fluid through pipelines.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C209342.1	2	2	1	2					1	2		
C209342.2	2	2	1	2					1	2		
C209342.3	2	2	1	2					1	2		
C209342.4	2	2	1	2					1	2		
C209342.5	2	2	2	2					1	2		
C209342.6	2	2	1	2					1	2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
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Conduct investigations of complex Problems	Ethics	Life-long learning
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PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software like AutoCAD, MATLAB and UNISIM.

CO - PSO Mapping:

CO	PSO1	PSO2
C209342.1	2	
C209342.2	2	
C209342.3	2	
C209342.4	2	
C209342.5	2	
C209342.6	2	



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CO – PO – PSO Mapping

Engineering Materials (209343)

Course Outcome:

On completion of the course, students will be able to	
209343.1	Describe scope of Engineering materials, properties of materials and Selection of materials
209343.2	Test different materials and describe organic materials
209343.3	Define corrosion, describe it's types, Control and prevent corrosion.
209343.4	Describe polymers Compare types of polymerization and classify plastics, rubbers.
209343.5	Describe Nanomaterials and its synthesis.
209343.6	Test internal properties of engineering materials.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C209343.1	2								1	2		
C209343.2	2	1	1	1	1				1	2		
C209343.3	2								1	2		
C209343.4	2								1	2		
C209343.5	2								1	2		
C209343.6	2								1	2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

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PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software like AutoCAD, MATLAB and UNISIM.

CO - PSO Mapping:

CO	PSO1	PSO2
C209343.1	1	
C209343.2	1	1
C209343.3	1	
C209343.4	1	
C209343.5	1	
C209343.6	1	



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CO – PO – PSO Mapping

Process Calculations (209344)

Course Outcome:

On completion of the course, students will be able to	
209344.1	Carry out dimensional analysis and unit conversions.
209344.2	Apply the concept of material balance on Non-Reactive Systems.
209344.3	Use stoichiometry and apply material balance on Reactive Systems.
209344.4	Apply energy balance on unit operation or process.
209344.5	Apply material balance on different unit operations.
209344.6	Perform material balance calculations for combustion reactions.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C209344.1	2	2								1		
C209344.2	3	3	2	2						1		
C209344.3	3	3	2	2						1		
C209344.4	3	3	2	2						1		
C209344.5	3	3	2	2						1		
C209344.6	3	3	2	2						1		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

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CO - PSO Mapping:

CO	PSO1	PSO2
C209344.1	2	
C209344.2	2	
C209344.3	2	
C209344.4	2	
C209344.5	2	
C209344.6	2	



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CO – PO – PSO Mapping

Introduction to Chemical Engineering (209345)

Course Outcome:

On completion of the course, students will be able to	
209345.1	Understand scope of Chemical engineering.
209345.2	Understand unit operations in Chemical industry.
209345.3	Understand unit processes in Chemical industry.
209345.4	Understand basic chemical calculations.
209345.5	Understand basic concept of chemical processes.
209345.6	Understand process instrumentation and safety.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C209345.1	1		1									
C209345.2	1		1									
C209345.3	1			2	1		1					
C209345.4	1				1		1					
C209345.5	1							1				
C209345.6	1					3		1				

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
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CO - PSO Mapping:

CO	PSO1	PSO2
C209345.1	2	
C209345.2	2	1
C209345.3	2	1
C209345.4	2	1
C209345.5	2	1
C209345.6	2	1



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CO – PO – PSO Mapping

Soft Skills (209346)

Course Outcome:

On completion of the course, students will be able to	
209346.1	Communicate, interact and present ideas to other professionals.
209346.2	Prepare and analyze Strengths, Weaknesses, Opportunities and Threats (SWOT)
209346.3	Develop self -motivation, raise aspirations and belief in one's own abilities
209346.4	Set and achieve goals
209346.5	Evaluate, assess and accomplish task.
209346.6	Utilize the diverse skills to achieve the set objectives.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C209346.1								2	2	3		1
C209346.2								2	2	3		1
C209346.3								2	2	3		1
C209346.4								2	2	3		1
C209346.5								2	2	3		1
C209346.6								2	2	3		1

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

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CO - PSO Mapping:

CO	PSO1	PSO2
C209346.1	1	
C209346.2	1	
C209346.3	1	
C209346.4	1	
C209346.5	1	
C209346.6	1	



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CO-PO & CO-PSO Mapping 2015 Course

SE Term-2



Department of Chemical Engineering

CO – PO – PSO Mapping

Chemistry-II (209347)

Course Outcome:

On completion of the course, students will be able to	
209347.1	Understand structure and properties of bio-molecules.
209347.2	Understand properties of transition metals and co ordination chemistry.
209347.3	Understand theories of adsorption and catalysis.
209347.4	Analyse the volumetric analysis.
209347.5	Understand stereochemistry.
209347.6	Classify drugs and pesticides and their synthesis.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C209347.1	2	2	1	1					1	2		
C209347.2	2	2	1	1					1	2		
C209347.3	2	2	1	1					1	2		
C209347.4	2	2	1	1					1	2		
C209347.5	2	2	1	1					1	2		
C209347.6	2	2	1	1					1	2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
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PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
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CO - PSO Mapping:

CO	PSO1	PSO2
C209347.1	1	
C209347.2	1	
C209347.3	1	
C209347.4	1	
C209347.5	1	
C209347.6	1	



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CO – PO – PSO Mapping

Heat Transfer (209348)

Course Outcome:

On completion of the course, students will be able to	
209348.1	Demonstrate basic concepts of Conduction.
209348.2	Demonstrate basic concepts of Convection.
209348.3	Conduct experiments as well as to analyze and interpret data.
209348.4	Demonstrate basic concepts of Radiation.
209348.5	Design Heat Exchanger.
209348.6	Demonstrate Evaporator.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C209348.1	2	3	3	3					1	2		
C209348.2	2	3	3	3					1	2		
C209348.3	2	3		3					1	2		
C209348.4	2	3		3						2		
C209348.5	2	3		3					1	2		
C209348.6	2	3	3	3						2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

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CO - PSO Mapping:

CO	PSO1	PSO2
C209348.1	2	2
C209348.2	2	2
C209348.3	2	
C209348.4	2	
C209348.5	3	3
C209348.6	2	2



Department of Chemical Engineering

CO – PO – PSO Mapping

Principles of Design (209349)

Course Outcome:

On completion of the course, students will be able to	
209349.1	Formulate and analyze stresses and strains in machine elements and structures subjected to various loads.
209349.2	Apply multidimensional static failure criteria in the analysis and design of mechanical components.
209349.3	Analyze and design power transmission shafts carrying various elements like keys and couplings with geometrical features.
209349.4	Analyze and design structural joints like riveted and welded joints and select appropriate belt drive arrangement for required service.
209349.5	Design thin-walled pressure vessels for variety of unit operations.
209349.6	Design thick-walled pressure vessels for variety of unit operations.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C209349.1	2	2	2							2		
C209349.2	2	2	2						1	2		
C209349.3	2	2	2						1	2		
C209349.4	2	2	2						1	2		
C209349.5	2	2	2		2				1	2		
C209349.6	2	2	2		2				1	2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
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CO - PSO Mapping:

CO	PSO1	PSO2
C209349.1	1	
C209349.2	1	
C209349.3	1	
C209349.4	2	
C209349.5	2	2
C209349.6	2	2



Department of Chemical Engineering

CO – PO – PSO Mapping

Chemical Engineering Thermodynamics-I (209350)

Course Outcome:

On completion of the course, students will be able to	
209350.1	Apply and analyse the first law of thermodynamics.
209350.2	Use appropriate equation of state for representing the P-V-T behavior of gases.
209350.3	Calculate the heat of reaction at any temperature.
209350.4	Calculate the ideal and actual efficiencies of heat engines and performance of heat pumps.
209350.5	Calculate changes in U, H, S and G for ideal gases, and also for non-ideal gases.
209350.6	Perform refrigerator and heat pump calculations.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C209350.1	1	1	2	2								
C209350.2	1	1	2	2								
C209350.3	1	1	2	2								
C209350.4	1	1	2	2								
C209350.5	1	1	2	2								
C209350.6	1	1	2	2								

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

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Engineering Knowledge	Modern tool usage	Individual and team work
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CO - PSO Mapping:

CO	PSO1	PSO2
C209350.1	1	
C209350.2	1	
C209350.3	1	
C209350.4	1	
C209350.5	1	
C209350.6	1	



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Mechanical Operations (209351)

Course Outcome:

On completion of the course, students will be able to	
209351.1	Select suitable type of screen and size reduction equipment for different particle sizes.
209351.2	Study different types of thickeners and clarifiers for separation of suspended solid particles.
209351.3	Apply fluidization and beneficiation techniques in Chemical Industries.
209351.4	Select a suitable type of agitator for mixing and agitation and to estimate power consumption in mixing and agitation.
209351.5	Select a suitable type of filter for filtration of a slurry or a suspension.
209351.6	Select a suitable type of conveyor for transportation of different types of solids.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C209351.1	2	2	1	2					1	2		
C209351.2	2	2	2	2					1	2		
C209351.3	2	2	1	2					1	2		
C209351.4	2	2	2	2						2		
C209351.5	2	2	2	2						2		
C209351.6	2	2	2	1					1	2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
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CO - PSO Mapping:

CO	PSO1	PSO2
C209351.1	1	
C209351.2	3	
C209351.3	1	
C209351.4	2	
C209351.5	2	
C209351.6	1	



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CO – PO – PSO Mapping

Workshop Practices (209352)

Course Outcome:

On completion of the course, students will be able to	
209352.1	Familiar with safety norms to prevent any mishap in workshop.
209352.2	Understand the construction, working and functions of lathe machine and prepare a simple job on it.
209352.3	Perform welding using arc welding technique and prepare simple job.
209352.4	Perform indexing and produce a spur gear on a horizontal milling machine.
209352.5	Know about pattern and make a simple job by sand casting process.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C209352.1			1			1						
C209352.2	1											
C209352.3	1											
C209352.4	1											
C209352.5	1											

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

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PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C209352.1		
C209352.2		
C209352.3		
C209352.4		
C209352.5		



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TE Term-1



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Department of Chemical Engineering

CO – PO – PSO Mapping

Chemical Engineering Mathematics (309341)

Course Outcome:

On completion of the course, students will be able to	
309341.1	Understand types of error and Solve problems using root finding methods.
309341.2	Solve problems of simultaneous linear algebraic equations.
309341.3	Perform regression analysis and interpolation.
309341.4	Solve ordinary differential equations using Euler's Method, RK2, RK4 etc.
309341.5	Solve partial differential equations.
309341.6	Understand basic concepts of optimization and formulation and Solve problems of process optimization.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C309341.1	2	2	1	1						2		
C309341.2	2	2	1	1						2		
C309341.3	2	2	1	1						2		
C309341.4	2	2	1	1						2		
C309341.5	2	2	1	1						2		
C309341.6	2	2	1	1						2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C309341.1	2	
C309341.2	2	
C309341.3	2	
C309341.4	2	
C309341.5	2	
C309341.6	2	



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Department of Chemical Engineering

CO – PO – PSO Mapping

Mass Transfer-I (309342)

Course Outcome:

On completion of the course, students will be able to	
309342.1	Estimate mass transfer rate.
309342.2	Understand the concept of mass transfer coefficient.
309342.3	Calculate no. of trays and height of packing for gas mixture separation using absorption.
309342.4	Use psychrometric chart and calculate height of cooling tower.
309342.5	Understand the construction and working of gas dispersal and liquid dispersal equipments.
309342.6	Select a suitable dryer to dry a given material.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C309342.1	2	2	1	2					1	2		
C309342.2	2	2	1	2					1	2		
C309342.3	2	2	2	2					1	2		
C309342.4	2	2	2	2					1	2		
C309342.5	2	1	1	1					1	2		
C309342.6	2	2	2	2					1	2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C309342.1	2	
C309342.2	2	
C309342.3	2	
C309342.4	2	
C309342.5	1	
C309342.6	2	



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Department of Chemical Engineering

CO – PO – PSO Mapping

Industrial Organization and Management (309343)

Course Outcome:

On completion of the course, students will be able to	
309343.1	Apply the concepts of Management Science.
309343.2	Identify managerial skills to increase the productivity.
309343.3	Analyze and implement concepts of Quotaion, Tenders and Comparative statements.
309343.4	Understand the knowledge of international trade.
309343.5	Use the knowledge of Management laws in Industrial Organizations.
309343.6	Paraphrase the knowledge of stores management.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C309343.1	2	2				1		2	1	2	1	2
C309343.2	2	2				1		2	1	2	1	2
C309343.3	2	3				1		2	1	2	1	2
C309343.4	3	3				1		2	1	2	1	2
C309343.5	2	2				1		2	1	2	1	2
C309343.6	2	2				1		2	1	2	1	2

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C309343.1	1	
C309343.2	1	
C309343.3	1	
C309343.4	1	
C309343.5	1	
C309343.6	1	



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CO – PO – PSO Mapping

Chemical Process Technology (309344)

Course Outcome:

On completion of the course, students will be able to	
309344.1	Understand the unit operations and processes for chlor-alkali, sea chemicals and electrolytic industries.
309344.2	Understand the knowledge of unit operations and processes in Nitro-phosphorus and Sulfur industries.
309344.3	Apply the knowledge of unit operations and processes for Sugar-starch, Paper-pulp and fermentation industries.
309344.4	Understand the knowledge of unit operations and processes for Natural Chemicals.
309344.5	Know the unit operations and processes for industrial gases and petroleum industries.
309344.6	Apply the knowledge of unit operations and processes for petrochemical industries.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C309344.1	2	2	1						1	2		
C309344.2	2	2	1						1	2		
C309344.3	2	2	1						1	2		
C309344.4	2	2	1						1	2		
C309344.5	2	2	1		2				1	2		
C309344.6	2	2	1		2				1	2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance

Conduct investigations of complex Problems	Ethics	Life-long learning
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Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C309344.1	2	
C309344.2	2	
C309344.3	2	
C309344.4	2	
C309344.5	2	2
C309344.6	2	2



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CO – PO – PSO Mapping

Chemical Engineering Thermodynamics-II (309345)

Course Outcome:

On completion of the course, students will be able to	
309345.1	Apply fugacity and fugacity coefficient calculations for pure species and solutions
309345.2	Calculate activity coefficients for solutions using Margules and Van Laar equations
309345.3	Perform VLE calculations using modified Raoult's Law and K-Values
309345.4	Understand Liquid-liquid and Solid-liquid equilibria
309345.5	Evaluate the effect of temperature on Equilibrium Constant
309345.6	Investigate the effect of pressure, composition and inert gases on conversion

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C309345.1	2	2		1						2		
C309345.2	2	2	1	1						2		
C309345.3	2	2	1							2		
C309345.4	2	2	1							2		
C309345.5	2	2	1							2		
C309345.6	2	2	1	1						2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C309345.1	2	
C309345.2	2	
C309345.3	2	
C309345.4	2	
C309345.5	2	
C309345.6	2	



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Department of Chemical Engineering

CO – PO – PSO Mapping

Computer Aided Chemical Engineering-I (309346)

Course Outcome:

On completion of the course, students will be able to	
309346.1	Apply principles of calculus to chemical engineering problems
309346.2	Design algorithms for numerical integration and differentiation.
309346.3	Develop algorithms for root finding and numerical optimization.
309346.4	Analyze data-fitting methods with regression.
309346.5	Create a MS-Excel sheet for process calculation.
309346.6	Discuss the applications of artificial intelligence methods to chemical engineering systems.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C309346.1	2	2	2		2				1	2		
C309346.2	2	2	2		2				1	2		
C309346.3	2	2	2		2				1	2		
C309346.4	2	2	2		2				1	2		
C309346.5	2	2	2		2				1	2		
C309346.6	2	2							1	2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C309346.1	2	2
C309346.2	1	2
C309346.3	1	2
C309346.4	1	2
C309346.5	2	2
C309346.6	1	



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CO – PO – PSO Mapping

Industrial Training Evaluation (309347)

Course Outcome:

On completion of the course, students will be able to	
309347.1	Evaluate actual industrial working environment.
309347.2	Understand the actual operation of the chemical plants and machineries.
309347.3	Apply theoretical knowledge to industrial practice.
309347.4	Prepare a report based on the experiences gained in Industry.
309347.5	Develop technical writing and oral presentation skills.
309347.6	Apply ethics in industrial practice.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C309347.1	2	1	1			2	2	2	2	2	1	1
C309347.2	2	1	1			2	2	2	2	2	1	1
C309347.3	2	1	1			2	2	2	2	2	1	1
C309347.4	2	1	1			2	2	2	2	2	1	1
C309347.5	2	1	1			2	2	2	2	2	1	1
C309347.6	2	1	1			2	2	2	2	2	1	1

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C309347.1	2	
C309347.2	2	
C309347.3	2	
C309347.4	2	
C309347.5	2	
C309347.6	2	



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Department of Chemical Engineering

CO-PO & CO-PSO Mapping 2015 Course

TE Term-2



Department of Chemical Engineering

CO – PO – PSO Mapping

Chemical Reaction Engineering-I (309348)

Course Outcome:

On completion of the course, students will be able to	
309348.1	Implement basic homogeneous kinetics calculations.
309348.2	Analyze and interpret batch reactor data.
309348.3	Perform reactor design for Batch reactor, Ideal PFR and MFR.
309348.4	Design reactors for parallel and series reactions.
309348.5	Investigate the effect of temperature and pressure on reaction kinetics.
309353.6	Design reactors for deviations from ideal reactors.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C309348.1	3	2	1	2					1	2		
C309348.2	3	2	2	2					1	2		
C309348.3	3	2	2	2					1	2		
C309348.4	3	2	1	2						2		
C309348.5	3	2	2	2					1	2		
C309348.6	3	2	2	2						2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C309348.1	2	
C309348.2	2	1
C309348.3	2	1
C309348.4	2	
C309348.5	2	
C309348.6	2	



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Department of Chemical Engineering

CO – PO – PSO Mapping

Transport Phenomena (309349)

Course Outcome:

On completion of the course, students will be able to	
309349.1	Apply the fundamentals of momentum transport in a fluid flow.
309349.2	Apply the concept of energy transport for different configurations.
309349.3	Develop understanding of mass transport across boundaries.
309349.4	Carry out analysis of transient momentum transport for isothermal systems.
309349.5	Implement the basics of interphase transport for isothermal systems.
309349.6	Develop understanding of interphase transport for multi-component systems.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C309349.1	2	2		2						2		
C309349.2	2	2		2						2		
C309349.3	2	2		2						2		
C309349.4	2	2		2						2		
C309349.5	2	2		2						2		
C309349.6	2	2		2						2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C309349.1	3	
C309349.2	3	
C309349.3	3	
C309349.4	3	
C309349.5	3	
C309349.6	3	



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CO – PO – PSO Mapping

Chemical Engineering Design-I (309350)

Course Outcome:

On completion of the course, students will be able to	
309350.1	Formulate and design storage vessels and tall vertical vessels
309350.2	Formulate and design of supports
309350.3	Formulate and design of heat exchangers
309350.4	Formulate and design of evaporators, condenser, etc
309350.5	Design auxiliary process vessels like decanter, cyclone separators and gas liquid separators
309350.6	Compare typical engineering materials like glass, ceramics etc.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C309350.1	3	3	3	2	3	1	2	2	2	3	2	3
C309350.2	3	3	3	2	3	1	2	2	2	3	2	3
C309350.3	3	3	2	2	3	1	2	2	2	3	2	2
C309350.4	3	3	3	2	3	1	1	2	2	3	2	1
C309350.5	3	3	3	2	3	1	1	2	2	3	1	1
C309350.6	3	3	3	2	3	1	1	2	2	3	1	1

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C309350.1	3	3
C309350.2	3	3
C309350.3	3	3
C309350.4	3	3
C309350.5	3	3
C309350.6	3	3



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CO – PO – PSO Mapping

Mass Transfer-II (309351)

Course Outcome:

On completion of the course, students will be able to	
309351.1	Apply mass transfer theories and principles to distillation operation and study different types of distillation.
309351.2	Solve problems related to continuous distillation.
309351.3	Understand Liq.-Liq. Extraction operation and solve problems.
309351.4	Understand leaching operation and solve single stage and multistage leaching problems.
309351.5	Understand basic principle and equilibria in adsorption and solve single stage, multistage adsorption problems.
309351.6	Solve problems of crystallization and understand membrane separation techniques.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C309351.1	3	3	2	2					1	2		
C309351.2	3	3	2	2					1	2		
C309351.3	3	3	2	2					1	2		
C309351.4	3	3	2	2					1	2		
C309351.5	3	3	2	2					1	2		
C309351.6	3	3	2	2					1	2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance

Conduct investigations of complex Problems	Ethics	Life-long learning
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Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C309351.1	2	
C309351.2	2	
C309351.3	2	
C309351.4	2	
C309351.5	2	
C309351.6	2	



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CO – PO – PSO Mapping

Process Instrumentation & Control (309352)

Course Outcome:

On completion of the course, students will be able to	
309352.1	Discuss the fundamentals of process instrumentation.
309352.2	Understand the temperature measuring instruments.
309352.3	Understand the pressure measuring instruments.
309352.4	Understand the level and flow measuring instruments.
309352.5	Outline the basics of instrumental methods of analysis.
309352.6	Analyze the concepts of process dynamics and control.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C309352.1	1	1								2		
C309352.2	2	1	1	2						2		
C309352.3	2	1	1	2						2		
C309352.4	2	1	1	2						2		
C309352.5	2	1	1	2						2		
C309352.6	2	2	2							2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C309352.1		
C309352.2	1	1
C309352.3	1	1
C309352.4	1	1
C309352.5	1	1
C309352.6	1	1



Department of Chemical Engineering

CO – PO – PSO Mapping

Seminar (309353)

Course Outcome:

On completion of the course, students will be able to	
309353.1	Undertake literature review on selected topic
309353.2	Understand the process methodology
309353.3	Undertake detailed case study of selected topic
309353.4	Prepare a technical report
309353.5	Prepare and present the findings on investigated topic

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C309353.1	2	2				1	2	2	2	2		2
C309353.2	2	2				1	2	2	2	2		2
C309353.3	2	2				1	2	2	2	2		2
C309353.4						1	2	2	2	2		2
C309353.5						1	2	2	2	2		2

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C309353.1	2	
C309353.2	2	
C309353.3	2	
C309353.4	2	
C309353.5	2	



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CO-PO & CO-PSO Mapping 2015 Course

BE Term-1



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Department of Chemical Engineering

CO – PO – PSO Mapping

Process Dynamics and Control (409341)

Course Outcome:

On completion of the course, students will be able to	
409341.1	Understand the dynamic modeling of simple processes.
409341.2	Understand the design of single-loop feedback control system.
409341.3	Apply the knowledge of stability analysis to feedback systems.
409341.4	Analyze the stability of linear processes by frequency response.
409341.5	Understand the design of complex control system.
409341.6	Understand the recent digital and computer-based control system schemes.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C409341.1	2	2	2	2	2				1	2		
C409341.2	2	2	2	2	2				1	2		
C409341.3	2	2	2	2	2				1	2		
C409341.4	2	2	2	2	2				1	2		
C409341.5	2	2								2		
C409341.6	2									2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C409341.1	2	2
C409341.2	2	2
C409341.3	2	2
C409341.4	2	2
C409341.5	1	
C409341.6	2	



Department of Chemical Engineering

CO – PO – PSO Mapping

Chemical Reaction Engineering-II (409342)

Course Outcome:

On completion of the course, students will be able to	
409342.1	Develop rate equation and design reactors for Fluid Particle reaction system
409342.2	Develop rate equation and design reactors for Fluid-Fluid reaction system
409342.3	Find out the physical properties of catalyst like surface area, Void Volume etc
409342.4	Study Effectiveness of Catalytic reaction
409342.5	Study different methods for finding out rate equations for catalytic reactions
409342.6	Develop rate equation for Biochemical Reaction

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C409342.1	2	3	3	3						2		
C409342.2	2	3	3	3						2		
C409342.3	2	3		3						2		
C409342.4	2	3		3						2		
C409342.5	2	3	3	3						2		
C409342.6	2	3	3	3						2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C409342.1	3	
C409342.2	3	
C409342.3	3	
C409342.4	3	
C409342.5	3	
C409342.6	3	



Department of Chemical Engineering

CO – PO – PSO Mapping

Chemical Engineering Design - II (409343)

Course Outcome:

On completion of the course, students will be able to	
409343.1	process and mechanical design of Plate type Distillation Column.
409343.2	process and mechanical design of Packed Columns for Distillation & Gas Absorption.
409343.3	design of pipelines on the basis of fluid dynamic parameters.
409343.4	design of pipelines used transportation of Natural Gas and Crude Oil.
409343.5	use of Plant Utilities, Steam Generators and Thermic Fluid Heaters.
409343.6	maintenance of pumps, valves, blowers and piping.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C409343.1	3	2	2	1	1			1	1	2		
C409343.2	3	2	2	2	1			1	1	2		
C409343.3	3	2	2	2	1			1	1	2		
C409343.4	2	1	2	2	1			1	1	2		
C409343.5	2	1	1	1	1				1	1		
C409343.6	1	1	1	1					1	2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C409343.1	2	1
C409343.2	2	1
C409343.3	2	1
C409343.4	2	1
C409343.5	2	1
C409343.6	1	



Department of Chemical Engineering

CO – PO – PSO Mapping

Industrial Training-II (409346)

Course Outcome:

On completion of the course, students will be able to	
409346.1	Evaluate actual industrial working environment.
409346.2	Understand the actual operation of the chemical plants and machineries.
409346.3	Apply theoretical knowledge to industrial practice.
409346.4	Prepare a report based on the experiences gained in Industry.
409346.5	Develop technical writing and oral presentation skills.
409346.6	Apply ethics in industrial practice.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C409346.1	2	1	1			2	2	2	2	2	1	1
C409346.2	2	1	1			2	2	2	2	2	1	1
C409346.3	2	1	1			2	2	2	2	2	1	1
C409346.4	2	1	1			2	2	2	2	2	1	1
C409346.5	2	1	1			2	2	2	2	2	1	1
C409346.6	2	1	1			2	2	2	2	2	1	1

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C409346.1	2	
C409346.2	2	
C409346.3	2	
C409346.4	2	
C409346.5	2	
C409346.6	2	



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Department of Chemical Engineering

CO – PO – PSO Mapping

Computer Aided Chemical Engineering- II (409347)

Course Outcome:

On completion of the course, students will be able to	
409347.1	Solve chemical engineering problems using various tools such as MATLAB, UniSim and ChemCAD.
409347.2	Develop computer programs for solving linear, non-linear, steady state and unsteady state equations.
409347.3	Develop computer programs for solving ODE and PDE.
409347.4	Develop computer programs for plotting P-x-y and T-x-y diagram.
409347.5	Develop computer programs for reactor design, distillation column, heat exchangers, mass transfer equipment and fluid flow operations problems.
409347.6	Analyze simulation of steady state flow sheeting.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C409347.1	2	2	2	1	3				1	2		
C409347.2	2	2	2	1	3				1	2		
C409347.3	2	2	2	1	3				1	2		
C409347.4	2	2	2	1	3				1	2		
C409347.5	2	2	2	1	3				1	2		
C409347.6	2	2	2	1	3				1	2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C409347.1	1	2
C409347.2	1	2
C409347.3	1	2
C409347.4	1	2
C409347.5	1	2
C409347.6	1	2



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Department of Chemical Engineering

CO – PO – PSO Mapping

Project Phase-I (409348)

Course Outcome:

On completion of the course, students will be able to	
409348.1	Undertake literature survey.
409348.2	Select suitable process from various synthesis methods.
409348.3	Analyze thermodynamic feasibility.
409348.4	Calculate Material Balances.
409348.5	Calculate Energy Balances.
409348.6	Investigate the process and effect of parameters thereon experimentally or theoretically.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C409348.1	2	3	2	2				2	2	3	1	2
C409348.2	2	3	3					2	2	3	1	1
C409348.3	3	3	3		3			2	2	3	1	1
C409348.4	3	3	3	3	3			2	2	3	1	1
C409348.5	2	3	3	3				2	2	3	1	1
C409348.6						3		2	2	3	1	2

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C409348.1	2	
C409348.2	2	
C409348.3	2	1
C409348.4	2	1
C409348.5	2	1
C409348.6	2	



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Department of Chemical Engineering

CO-PO & CO-PSO Mapping 2015 Course

BE Term-2



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Department of Chemical Engineering

CO – PO – PSO Mapping

Process Modeling and Simulation (409349)

Course Outcome:

On completion of the course, students will be able to	
409349.1	Derive laws of conservation of mass, momentum and energy needed for modelling.
409349.2	Develop model equations for Fluid Flow Phenomena.
409349.3	Establish Model Development Process for Heat Transport Phenomena.
409349.4	Develop model equations for the Mass transfer Operations.
409349.5	Develop model equations and solution methodology for Chemical Reactors
409349.6	Apply modeling concepts to transient analysis of Chemical Processes

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C409349.1	2	1	1		1				1	2		
C409349.2	2	2	2		2				1	2		
C409349.3	3	3	2		2				1	2		
C409349.4	2	2	2		2				1	2		
C409349.5	1	1	1		2				1	2		
C409349.6	1	1	1		2				1	2		

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C409349.1	2	2
C409349.2	2	2
C409349.3	2	2
C409349.4	2	2
C409349.5	2	2
C409349.6	2	2



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Department of Chemical Engineering

CO – PO – PSO Mapping

Process Engineering Costing and Plant Design (409350)

Course Outcome:

On completion of the course, students will be able to	
409350.1	Distinguish the knowledge of basic process development, process selection and equipment specification sheet.
409350.2	Interpret basic principles of process economics, costing and depreciation of process equipment.
409350.3	Evaluate the knowledge of cost estimation of process equipment, related taxes and insurances.
409350.4	Optimize design of batch and cyclic operations.
409350.5	Recite the selected process equipment case studies for optimum design of equipments.
409350.6	Analyse and design project using PERT and CPM Technique.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C409350.1	2	2	1	1	1				1	2	1	
C409350.2	2	2	1	1	1				1	2	3	
C409350.3	2	2	1	1	1				1	2	3	
C409350.4	2	2	1	1	1				1	2	2	
C409350.5	2	2	1	1	1				1	2	3	
C409350.6	2	2	1	1	1				1	2	3	

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance

Conduct investigations of complex Problems	Ethics	Life-long learning
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Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C409350.1	2	1
C409350.2	2	1
C409350.3	2	1
C409350.4	2	1
C409350.5	2	1
C409350.6	2	1



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Department of Chemical Engineering

CO – PO – PSO Mapping

Project Phase-II (409353)

Course Outcome:

On completion of the course, students will be able to	
409353.1	Discuss the knowledge of chemical Process & operation.
409353.2	Understand the knowledge of chemical Process & operation.
409353.3	Apply the knowledge of chemical Process & operation.
409353.4	Outline the basic need of different systems.
409353.5	Check the economy and safety aspects of chemical Process & operation.
409353.6	Plan the solution for chemical Process & operation.

CO - PO Mapping:

CO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	P10	P11	P12
C409353.1	2							2	2	3	1	1
C409353.2	2							2	2	3	1	1
C409353.3	3	3	3					2	2	3	3	1
C409353.4				3	3			2	2	3	1	1
C409353.5							3	2	2	3	1	1
C409353.6						3		2	2	3	3	2

Mapping Levels: – 1 – Low, 2 - Medium, 3– High

Program Outcomes

Engineering Knowledge	Modern tool usage	Individual and team work
Problem Analysis	The engineer and society	Communication
Design/development of solutions	Environment and sustainability	Project management and finance
Conduct investigations of complex Problems	Ethics	Life-long learning

Program Specific Outcomes:

	Our Graduates will be able to
PSO1	Identify, analyze, design and develop solutions to Chemical Engineering problems of practical importance to industry and society.
PSO2	Demonstrate sound understanding of Chemical engineering fundamentals to solve problems through the use of modern experimental methods and computer aided design and simulation software.

CO - PSO Mapping:

CO	PSO1	PSO2
C409353.1	2	
C409353.2	2	
C409353.3	2	1
C409353.4	2	1
C409353.5	2	1
C409353.6	2	