



SCHEME OF STUDIES

Batch (2025)

Chemical Engineering									
First Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hrs.			Course Code	Course Title	Credit Hrs.		
		Th.	Pr.	Total			Th	Pr.	Total
ES-108	Ideology and Constitution of Pakistan	2	0	2	MM-102	Introduction to Engineering Materials	2	0	2
ES-206/ ES-209	Islamic Studies/ Ethical Behaviour (for Non-Muslims)	2	0	2	ES-105/ ES-127	Pakistan Studies / Pakistan Studies (for Foreigners)	2	0	2
MT-116	Calculus and Analytical Geometry	3	0	3	PF-101	IT Fundamentals and Applications	2	1	3
CH-110	Chemical Engineering Principles	3	1	4	EA-128	Functional English	3	0	3
CY-110	Applied Chemistry for Engineers	2	1	3	PH-129	Applied Physics	3	0	3
PP-103	Workshop Practice	0	1	1	MT-221	Linear Algebra & Ordinary Differential Equations	3	0	3
CY-100	Essentials of Chemistry (For computer science students)	NC			-	-	-	-	-
Total		12	3	15	Total		15	1	16
Second Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hrs.			Course Code	Course Title	Credit Hrs.		
		Th	Pr.	Total			Th	Pr.	Total
PF-201	Civics & Community Engagement	2	0	2	CH-209	Fluid Mechanics-I	2	1	3
CH-109	Chemical Engineering Drawing	0	1	1	CH-220	Chemical Engineering Thermodynamics-II	2	0	2
CH-107	Chemical Engineering Thermodynamics-I	2	1	3	CH-219	Heat Transfer	3	1	4
CH-216	Physical & Analytical Chemistry	2	1	3	CH-221	Particulate Technology	3	1	4
EE-124	Basic Electricity and Electronics	2	1	3	MT-224	Complex Variables & Fourier Series	3	0	3
CH-218	Chemical Process Industries	3	0	3	PF-301	Professional Ethics	2	0	2
XX-###	Social Science Elective	2	0	2	PF-205	Community Service	NC		
Total		13	4	17	Total		15	3	18

Third Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hrs.			Course Code	Course Title	Credit Hrs.		
		Th	Pr.	Total			Th	Pr.	Total
CH-315	Fuel & Energy	2	1	3	CH-309	Chemical Reaction Engineering	3	1	4
CH-313	Fluid Mechanics-II	2	0	2	CH-316	Instrumentation & Process Control	3	1	4
CH-222	Programming & Data Science for Chemical Engineers	2	1	3	CH-318	Integrated Management Systems	3	0	3
CH-312	Mass Transfer	3	1	4	CH-314	Numerical Methods with Software Applications for Chemical Engineers	2	1	3
MT-331	Probability & Statistics	3	0	3	CH-320	Environmental Engineering	2	1	3
EA-304	Business Communication and Ethics	3	0	3	EA/ ES-###	Foreign Language-I	NC		
Total		15	3	18	Total		13	4	17
Final Year									
Fall Semester					Spring Semester				
Course Code	Course Title	Credit Hrs.			Course Code	Course Title	Credit Hrs.		
		Th	Pr.	Total			Th	Pr.	Total
CH-421	Process Modeling, Simulation & Optimization	3	1	4	CH-424	Chemical Process Safety & OSHA	2	0	2
CH-422	Chemical Plant Design	3	0	3	CH-423	Chemical Process Utility & Maintenance Engineering	2	0	2
CH-420	Separation Processes	3	1	4	CH-###	Depth Elective-II	2	0	2
CH-###	Depth Elective-I	2	0	2	CH-###	Depth Elective-III	2	0	2
CH-499	Chemical Engineering Design Project	0	3	3	CH-415	Transport Phenomenon	3	0	3
PF-401	Entrepreneurship	2	0	2	CH-425	Project Management	2	0	2
EA/ES-###	Foreign Language-II	NC		-	CH-499	Chemical Engineering Design Project	0	3	3
Total		13	5	18	Total		13	3	16
					Curriculum Total		109	26	135

Course Code	Depth Elective-I
CH-426	Nanotechnology Engineering
CH-427	Computational Fluid Dynamics (CFD)
CH-428	Machine Learning Technology
CH-429	Petroleum Refinery Engineering
CH-430	Gas Processing & Transmission

Course Code	Social Science Elective
PF-206	Engineering Economics and Management
MG-257	Organizational Behavior
MG-228	Sociology & Development

Course Code	Depth Elective-II
CH-412	Biochemical Engineering
CH-432	Biofuels and Biorefineries
CH-433	Environmental Impact Assessment
CH-434	Sustainability in Process & Energy Systems
CH-435	Nuclear Waste Assessment & Management

Course Code	Depth Elective-III
CH-436	Computer-Aided Process Synthesis
CH-437	Polymer & Composites
CH-438	Corrosion Engineering
CH-439	Energy Auditing and Management
CH-440	Clean Coal Technology and Co-Generation

Foreign Language-I			Foreign Language-II	
Course Code	Course Title		Course Code	Course Title
EA-220	Chinese Language-I		EA-221	Chinese Language-II
EA-231	Turkish Language-I		EA-232	Turkish Language-II
EA-224	German Language-I		EA-225	German Language-II
EA-226	French Language-I		EA-227	French Language-II
ES-222	Arabic Language-I		ES-223	Arabic Language-II
EA-233	Japanese Language-I		EA-234	Japanese Language-II
EA-235	Russian Language-I		EA-236	Russian Language-II