MAULANA AZAD
NATIONAL INSTITUTE OF TECHNOLOGY, BHOPAL-462003
DEPARTMENT OF CHEMICAL ENGINEERING
M.Tech. in Chemical Engineering
SCHEME OF STUDY (w.e.f. July 2022)

First Semester:

Course No.	Subject	Scheme of studies Periods per week			Total Credits
		L	T	P	
MTH 514	Advanced Mathematics	3	-	-	3
CHE 511	Advanced Transport Phenomena	3	-	-	3
CHE 512	Reaction Engineering and Catalysis	3	-	-	3
CHE 513	Novel Separation Processes	3	-	-	3
HUM 511	Communication Skills	2	-	-	2
	Elective – 1 (A)	3	-	-	3
	Elective – 2 (A)	3	-	-	3
CHE 514	Advanced Chemical Engineering Lab	-	-	2	1
CHE 515	Seminar-1	-	-	2	1
Total Hours: 24 **Total Credits: 22**		**Total Semester Credits**			**22**

Second Semester:

Course No.	Subject	Scheme of studies Periods per week			Total Credits
		L	T	P	
CHE 521	Thermodynamics of Chemical Processes	3	-	-	3
CHE 522	Bioprocessing and Biochemical Engineering	3	-	-	3
CHE 523	Environmental Science and Technology	3	-	-	3
	Elective – 3 (A)	3	-	-	3
	Elective – 4 (A)	3	-	-	3
	Elective – 5 (C)	3	-	-	3
CHE 524	Research Methodology	1	1	-	2
CHE 525	Software Lab	-	-	2	1
CHE 526	Seminar-2	-	-	2	1
Total Hours: 24 **Total Credits: 44**		**Total Semester Credits**			**22**

Third Semester:

Course No.	Subject	Scheme of Studies periods per week			Total Credits
		L	T	P	
CHE 611	Dissertation Phase - I	-	-	32	16
Total Hours: 32 **Total Credits: 60**		**Total Semester Credits**			**16**

Fourth Semester:

Course No.	Subject	Scheme of Studies periods per week			Total Credits
		L	T	P	
CHE 621	Dissertation Phase - II	-	-	40	20
Total Hours: 40 **Total Credits: 80**		**Total Semester Credits**			**20**

List of Program Electives

List of Program Electives A		List of Open Electives C	
CHE551	Polymer Science & Technology	ARP-581	Introduction to Urban Planning
CHE552	Nanotechnology	BSE-581	Bioprocess Engineering
CHE553	Advanced Oil and Paint Technology	BSE-582	Biophysics Tools and Techniques
CHE554	Pinch Technology	CE-581	Solid Waste Management
CHE555	Advanced Fluid Dynamics	CE-582	Basic Concept of GIS
CHE556	Advanced Process Dynamics and Control	CE-583	Road Safety
CHE557	Petroleum Engineering & Technology	CSE-581	Machine Learning
CHE558	Environmental Chemistry & Pollution Acts	CSE-582	Advanced Data Structures and Algorithms
CHE559	Industrial Catalysis	PHY-581	Nanotechnology and Nanoscience
CHE560	Air and Noise Pollution Control	EE-581	Electric Machines & Applications
CHE561	Advanced Environmental Biotechnology	EE-582	Control and Instrumentation
CHE562	Corrosion Science & Engineering	ECE-581	Introduction to Fuzzy Logic
CHE563	Solid Waste Management	ECE-582	Neural Networks and its Applications
CHE564	Bioenergy & Biorefinery Engineering	EC-581	Energy Resource Technology
CHE565	Wastewater Treatment	HUM-581	Intellectual Property Rights for Engineers
CHE566	Advance Heat & Mass transfer	HUM-582	Applied Psychology: Human Centered Design and Engineering
CHE567	Optimization Techniques	MTH-581	Advanced Operations Research
CHE568	Energy Management in Process Industries	MTH-582	Computing Technologies
CHE569	Food Processing &Technology	ME-581	Value Engineering
CHE570	Textile Technology	ME-582	Design Thinking
CHE571	Multiphase Flow Modeling	ME-583	Mechatronics and NDT in Engineering
CHE572	Paper and Pulp Technology	MME-581	Advanced Instrumentation Methods for Material Analysis
CHE573	Membrane Science and Technology	MME-582	Smart Materials and their Application
CHE574	Economics and Management of Chemical Industries	MBA-581	Engineering Startup Management
CHE575	Fire Safety & Management		
CHE576	Regulatory Procedures for safety and Environment		
CHE577	Energy Resources & Utilization		
CHE578	Modeling & Simulation of Engineering Processes		
CHE579	Industrial Safety and Hazard Management		