Maulana Azad National Institute of Technology, Bhopal - 462003

DEPARTMENT OF CHEMICAL ENGINEERING

SCHEME FOR B.TECH. (Chemical Engineering)

(2021 admitted batch onwards)

First Year Credits (Cumulative) 45

THIRD SEMESTER

Course Code	Course Name	Scheme of Studies Periods per week			Credits
		L	T	P	
MTH 231	Mathematics-3	3	1	-	4
HUM 251	Fundamentals of Entrepreneurship	3	-	-	3
CHE 211	Chemical Process Calculations	3	-	-	3
CHE 212	Fluid Mechanics	3	-	-	3
CHE 213	Chemical Engineering Thermodynamics	3	-	-	3
CHE 214	Mechanical Operations	3	-	-	3
CHE 215	Computer Aided Process Calculations Lab	-	-	2	1
CHE 216	Fluid Mechanics Lab	-	-	2	1
CHE 217	Mechanical Operations Lab	-	-	2	1
CHE 218	Professional Practices	-	2	-	2
Total Hours = 27		**18**	**3**	**6**	**24**
Total Credits (Cumulative)					**69**
Additional Subject: National Cadet Corps (NCC)					
NCC 251	National Cadet Corps III	**1**	**5**	**1**	**7**
Total Credits (Cumulative)					**11**

FOURTH SEMESTER

Course Code	Course Name	Scheme of Studies Periods per week			Credits
		L	T	P	
MTH 241	Mathematics-4	3	-	-	3
ME 252	Fundamentals of Design	2	1	-	3
CHE 221	Heat Transfer	3	1	-	4
CHE 222	Mass Transfer - 1	3	-	-	3
CHE 223	Chemical Reaction Engineering-1	3	-	-	3
CHE 224	Chemical Process Technology	3	-	-	3
CHE 225	Heat Transfer Lab	-	-	2	1
CHE 226	Chemical Process Technology Lab	-	-	2	1
CHE 227	Project Based Lab - 1	-	-	2	1
Total Hours = 25		**17**	**2**	**6**	**22**
Total Credits (Cumulative)					**91**
Additional Subject: National Cadet Corps (NCC)					
NCC 252	National Cadet Corps IV	**2**	**-**	**1**	**3**
Total Credits (Cumulative)					**14**

FIFTH SEMESTER

Course Code	Course Name	Scheme of Studies Periods per week			Credits
		L	T	P	
ME 351	Engineering Management	3	-	-	3
CHE 311	Instrumentation & Process Dynamics Control	3	1	-	4
CHE 312	Mass Transfer-2	3	-	-	3
CHE 313	Chemical Reaction Engineering - 2	3	-	-	3
CHE 314	Safety & Hazard Management in Chemical Industries	3	-	-	3
	Programme Elective - 1(A)	3	-	-	3
CHE 315	Mass Transfer Lab	-	-	2	1
CHE 316	Chemical Reaction Engineering Lab	-	-	2	1
CHE 317	Software Lab	-	-	2	1
CHE 318	Internship/ Industrial Training	-	-	2	1
	Total Hours = 27	**18**	**1**	**8**	**23**
				Total Credits (Cumulative)	**114**
Additional Subject: National Cadet Corps (NCC)					
NCC 351	National Cadet Corps V	**1**	**5**	**1**	**7**
				Total Credits (Cumulative)	**21**

SIXTH SEMESTER

Course Code	Course Name	Scheme of Studies Periods per week			Credits
		L	T	P	
CS 352	Data Structure and Algorithm	3	1	-	4
CHE 321	Chemical Process Equipment Design	3	1	-	4
CHE 322	Process Modeling and Simulation	3	-	-	3
CHE 323	Plant Design and Economics	3	-	-	3
	Programme Elective - 2(A)	3	-	-	3
CHE 324	Process Control & Instrumentation Lab	-	-	2	1
CHE 325	Process Modeling and Simulation Lab	-	-	2	1
CHE 326	Process Equipment Design & Drawing Lab	-	-	2	1
CHE 327	Project-1	-	-	4	2
	Total Hours = 27	**15**	**2**	**10**	**22**
				Total Credits (Cumulative)	**136**
Additional Subject: National Cadet Corps (NCC)					
NCC 352	National Cadet Corps VI	**2**	**-**	**1**	**3**
				Total Credits (Cumulative)	**24**

SEVENTH SEMESTER

Course Code	Course Name	Scheme of Studies Periods per week			Credits
		L	T	P	
HUM 451	Engineering Economics & IPR	3	-	-	3
CHE 411	Transport Phenomena	3	-	-	3
	Programme Elective - 3(A)	3	-	-	3
	Programme Elective - 4(A)	3	-	-	3
	Open Elective - 1(C)	3	-	-	3
CHE 412	Fuels & Combustion Lab	-	-	2	1
CHE 413	Project Based Lab - 2 / Mini project	-	-	4	2
CHE 414	Internship / Field Training	-	-	2	1
Total Hours = 23		**15**	**-**	**8**	**19**
Total Credits (Cumulative)					**155**

EIGHTH SEMESTER

Course Code	Course Name	Scheme of Studies Periods per week			Credits
		L	T	P	
	Programme Elective - 5(A)	3	-	-	3
	Programme Elective - 6(A)	3	-	-	3
CHE 421 / CHE 422	Project-2 / Internship	-	-	16	8
CHE 423	General Proficiency	-	-	-	1
Total Hours = 22		**6**	**-**	**16**	**15**
Cumulative Credits					**170**

List of Programme Electives (Group A)	
Programme Elective- 1(A) CHE 351 Bio Chemical Engineering CHE 352 Oil and Paint Technology CHE 353 Sustainable Engineering CHE 354 Paper and pulp technology CHE 355 Petroleum Refinery Engineering CHE 356 Fertilizer Technology CHE 357 Novel Separation Techniques **Programme Elective- 2(A)** CHE 361 Industrial Pollution Control CHE 362 Process Piping Design CHE 363 Packaging Technology CHE 364 Transport in Porous media CHE 365 Computer Aided Process Control & Design CHE 366 Fluidization Engineering CHE 367 Fuels and Combustion **Programme Elective- 3(A)** CHE 451 Air Pollution and control CHE 452 Oil and Gas well testing and enhanced oil recovery CHE 453 Membrane Science and Technology CHE 454 Industrial Catalysis CHE 455 Introduction to Multi Phase Flow CHE 456 Trends in Healthcare and Technology CHE 457 Wastewater Treatment	**Programme Elective- 4(A)** CHE 461 Plant Utility CHE 462 Numerical and Statistical Methods in Chemical Engineering CHE 463 Cleaner Technologies in Chemical Process Industries CHE 464 Computational Fluid Dynamics CHE 465 Sustainability and Green Chemistry CHE 466 Nanotechnology in Catalysis CHE 467 Hazardous Waste Treatment and Manageme **Programme Elective- 5(A)** CHE 471 Advanced Material Characterization CHE 472 Bio Energy Technology CHE 473 Solid Waste Management CHE 474 Economics and Managements of Chemical Industries CHE 475 Advanced Analytical Techniques CHE 476 Material Synthesis processes CHE 477 Ceramic Technology **Programme Elective- 6(A)** CHE 481 Advanced Process Optimization CHE 482 Introduction to Nano-Science and Technology CHE 483 Rubber Technology CHE 484 Polymer Science &Technology CHE 485 Textile Technology CHE 486 Petrochemical Technology