



मौलाना आजाद राष्ट्रीय प्रौद्योगिकी संस्थान, भोपाल-462003
MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY BHOPAL – 462003
B.Tech. Scheme of Study (Branch: Chemical Engineering)
Session 2025-26 Onwards

Chemical/Dispatch No. 133
DATE 28-04-2026

B Tech III Semester

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
MCMT2001	Applied Numerical Methods	3	1	-	4
HS2001	Fundamental of Entrepreneurship	3	-	-	3
CL2101	Chemical Process Calculations	3	-	-	3
CL2102	Transport Phenomena	3	-	-	3
CL2103	Chemical Engineering Thermodynamics-1	3	-	-	3
CL2104	Mechanical Operations	3	-	-	3
CL2105	Application of AI in Chemical Engineering	-	-	2	1
CL2106	Fuels and Combustion Lab	-	-	2	1
CL2107	Mechanical Operations Lab	-	-	2	1
CL2108	Professional Practice	-	2	-	2
Total Hours = 27		18	3	6	24
Total Credits (Cumulative)					65
Additional Subject: National Cadet Corps (NCC)					
NC2151	National Cadet Corps III	1	5	1	7
Total Credits (Cumulative)					11

B Tech IV Semester

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
CS2001	Data Structure and Algorithm	2	1	-	3
CL2201	Heat Transfer	3	1	-	4
CL2202	Mass Transfer-1	3	-	-	3
CL2203	Chemical Reaction Engineering-1	3	-	-	3
CL2204	Fluid Mechanics	3	-	-	3
CL2205	Chemical Engineering Thermodynamics-2	3	-	-	3
CL2206	Heat Transfer Lab	-	-	2	1
CL2207	Fluid Mechanics Lab	-	-	2	1
CL2208	Project Based Lab-1	-	-	2	1
Total Hours = 25		17	2	6	22
Total Credits (Cumulative)					87
Additional Subject: National Cadet Corps (NCC)					
NC 2251	National Cadet Corps IV	2		1	3
Total Credits (Cumulative)					14

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B Tech V Semester

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
CL3101	Computational Chemical Engineering	3	-	-	3
CL3102	Chemical Process Equipment Design	3	1	-	4
CL3103	Mass Transfer-2	3	-	-	3
CL3104	Chemical Reaction Engineering-2	3	-	-	3
CL3105	Plant Design and Economics	3	-	-	3
CL3151-3159	Departmental Elective-1 (A)	3	-	-	3
CL 3106	Mass Transfer Lab	-	-	2	1
CL 3107	Chemical Reaction Engineering Lab	-	-	2	1
CL 3108	Process Equipment Design & Drawing Lab	-	-	2	1
CL3109	Internship/ Industrial Training	-	-	2	1
Total Hours = 27		18	1	8	23
Total Credits (Cumulative)					110
Additional Subject: National Cadet Corps (NCC)					
NC3151	National Cadet Corps V	1	5	1	7
Total Credits (Cumulative)					21
*Optional	[NPTEL/SWAYAM Courses only]	3	-	-	3

B Tech VI Semester

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
CL3201	Fundamental of Material Science	3	-	-	3
CL3202	Process Dynamics & Control	3	1	-	4
CL3203	Process Modeling and Simulation	3	1	-	4
CL3204	Chemical Process Technology	3	-	-	3
CL3251-3259	Department Elective-2 (A)	3	-	-	3
CL3205	Chemical Process Technology Lab	-	-	2	1
CL3206	Computational Process Modeling and Simulation Lab	-	-	2	1
CL3207	Process Control & Instrumentation Lab	-	-	2	1
CL3208	Project Based Lab-2#/Start-Up activities	-	-	2	1
Total Hours = 25		15	2	8	21
Total Credits (Cumulative)					131
Additional Subject: National Cadet Corps (NCC)					
NC3251	National Cadet Corps VI	2	-	1	3
Total Credits (Cumulative)					24

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B Tech VII Semester

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
HS4101	Engineering Economics & IPR	3	-	-	3
CL4101	Safety & Hazard Management in Chemical Industries	3	-	-	3
CL4151-4159	Department Elective-3 (A)	3	-	-	3
CL4161-4169	Department Elective-4 (A)	3	-	-	3
CL4181-4182	Open Elective-1(C)	3	-	-	3
CL4102	Advanced Materials and Analytical Lab	-	-	2	1
CL4103	Project-1#	-	-	4	2
CL4104	Internship/Field Training	-	-	2	1
Total Hours = 23		15	-	8	19
Total Credits (Cumulative)					150

B Tech VIII Semester

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
CL4251-4259	Department Elective-5(A) [NPTEL/SWAYAM Courses only]	3	-	-	3
CL4261-4269	Department Elective-6(A) [NPTEL/SWAYAM Courses only]	3	-	-	3
CL4201	Project-2 / Internship#	-	-	16	8
CL4202	General Proficiency	-	-	-	1
Total Hours = 22		6	-	16	15
Total Credits (Cumulative)					165

It may be earned by startup activities



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3rd Year

Course Number	Department Elective-1 (A)	V Semester
CL3151	Biochemical Engineering	
CL3152	Sustainable Engineering	
CL3153	Paper and pulp technology	
CL3154	Petroleum Refinery Engineering	
CL3155	Fertilizer Technology	
CL3156	Novel Separation Techniques	
CL3157	Advanced Material Characterization	
CL3158	Bio Energy Technology	
CL3159	Solid Waste Management	

Course Number	Department Elective-2 (A)	VI Semester
CL3251	Industrial Pollution Control	
CL3252	AI and Machine Learning in Process Industries	
CL3253	Packaging Technology	
CL3254	Transport in Porous media	
CL3255	Fluidization Engineering	
CL3256	Fuels and Combustion	
CL3257	Economics and Managements of chemical Industries	
CL3258	Advanced Analytical Techniques	
CL3259	Nanofabrication	

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4th year

Course Number	Department Elective-3 (A)	VII Semester
CL4151	Air Pollution and control	
CL4152	Membrane Science and Technology	
CL4153	Industrial Catalysis	
CL4154	Introduction to Multi Phase Flow	
CL4155	Semiconductor Technology	
CL4156	Wastewater Treatment	
CL4157	Ceramic Technology	
CL4158	Advanced Process Optimization	
CL4159	Introduction to Nano-Science and Technology	

Course Number	Department Elective-4 (A)	VII Semester
CL4161	Cleaner Technologies in Chemical Process Industries	
CL4162	Computational Fluid Dynamics	
CL4163	Sustainability and Green Chemistry	
CL4164	Hazardous Waste Treatment and Management	
CL4165	Polymer Science & Technology	
CL4166	Textile Technology	
CL4167	Petrochemical Technology	
CL4168	Statistical analysis and design of experiments in chemical engineering	
CL4169	Electrochemical Engineering	

Course Number	Open Elective-1(C)	VII Semester
CL 4181	Petroleum Refinery & Petrochemicals	
CL 4182	Physico-chemical Separation Processes	
CL 4183	Life Cycle Assessment and Sustainable Engineering	
CL 4184	Hydrogen Technology and Economy	
CL 4185	Advanced Functional Materials and Applications	