



मौलाना आज़ाद राष्ट्रीय प्रौद्योगिकी संस्थान, भोपाल-462003

MAULANA AZAD NATIONAL INSTITUTE OF TECHNOLOGY BHOPAL – 462003
B.Tech. Scheme of Study (Branch: Electronics and Communication Engineering)
Session 2025-26 Onwards

I Semester

Section A,B,C,D & E						Section F, G, H, I & J					
Code	Course Name	Periods per week			Credits	Code	Course Name	Periods per week			Credits
		L	T	P				L	T	P	
MC1101	Mathematics 1	3	1	-	4	MC1101	Mathematics 1	3	1	-	4
PY1102	Physics	3	-	-	3	CY1107	Engineering Chemistry	3	-	-	3
CE1103	Engineering Mechanics	2	1	-	3	EE1108	Basic Electrical & Electronics Engineering	2	1	-	3
ME1104	Engineering Graphics	1	-	-	1	ME1109	Manufacturing Science	1	-	-	1
CS1105	Computer Programming & Problem Solving	2	-	-	2	CY1110	Environmental Science	2	-	-	2
HS1106	Communication Skill	1	-	-	1	BS1111	Biology for Engineers	2	-	-	2
CE1121	Engineering Mechanics Laboratory	-	-	2	1	HS1112	Indian knowledge Systems and Cognitive Well being	-	2	-	2
PY1122	Physics Laboratory	-	-	2	1	EE1125	Basic Electrical & Electronics Engineering Laboratory	-	-	2	1
ME1123	Engineering Graphics Laboratory	-	-	2	1	CY1126	Engineering Chemistry Laboratory	-	-	2	1
CS1124	Computer Programming Laboratory	-	-	2	1	ME1127	Manufacturing Science Laboratory	-	-	2	1
HS1128	Language Laboratory	-	-	2	1	SA1143 or SA1144 or SA1145	NSS or Yoga or Universal Human Values and Professional Ethics	-	-	2	1
SA1141 or SA1142	Life Skill Management or Physical Education	-	-	2	1			13	4	8	21
		12	2	12	20	NC115*	National Cadet Corps I	1	1	-	2
NC115*	National Cadet Corps I	1	1	-	2						

*Not to be counted in SGPA/ CGPA calculations

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II Semester

Section A,B,C,D & E						Section F, G, H, I & J					
Code	Course Name	Periods per week			Credits	Code	Course Name	Periods per week			Credits
		L	T	P				L	T	P	
MC1201	Mathematics II	3	1	-	4	MC1201	Mathematics II	3	1	-	4
CY1207	Engineering Chemistry	3	-	-	3	PY1202	Physics	3	-	-	3
EE1208	Basic Electrical & Electronics Engineering	2	1	-	3	CE1203	Engineering Mechanics	2	1	-	3
ME1209	Manufacturing Science	1	-	-	1	ME1204	Engineering Graphics	1	-	-	1
CY1210	Environmental Science	2	-	-	2	CS1205	Computer Programming & Problem Solving	2	-	-	2
BS1211	Biology for Engineers	2	-	-	2	HS1206	Communication Skill	1	-	-	1
HS1212	Indian knowledge Systems and Cognitive Well being	-	2	-	2	CE1221	Engineering Mechanics Laboratory	-	-	2	1
EE1225	Basic Electrical & Electronics Engineering Laboratory	-	-	2	1	PY1222	Physics Laboratory	-	-	2	1
CY1226	Engineering Chemistry Laboratory	-	-	2	1	ME1223	Engineering Graphics Laboratory	-	-	2	1
ME1227	Manufacturing Science Laboratory	-	-	2	1	CS1224	Computer Programming Laboratory	-	-	2	1
SA1243 or SA1244 or SA1245	NSS or Yoga or Universal Human Values and Professional Ethics	-	-	2	1	HS1228	Language Laboratory	-	-	2	1
		13	4	8	21			12	2	12	
NC125*	National Cadet Corps I	1	1	-	2	NC125*	National Cadet Corps I	1	1	-	2

*Not to be counted in SGPA/ CGPA calculations

First Year

Total Credits	Lecture	Tutorial	Practical	Hours
41	25	6	20	41

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B. Tech. III Semester

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
MCMT2001	Applied Numerical Methods	3	1	-	4
CS2001	Data Structure and Algorithm	3	-	-	3
EC2101	Signals & Systems	3	-	-	3
EC2102	Electronic Circuits and Devices	3	-	-	3
EC2103	Digital Circuit Design	3	-	-	3
EC2104	Network Analysis and Synthesis	3	-	-	3
EC2105	Electronics Circuit Lab	-	-	2	1
EC2106	Digital Circuit Design Lab	-	-	2	1
EC2107	Network Lab	-	-	2	1
EC2108	Professional Practices	-	2	-	2
Total Hours = 27		18	3	6	24
Total Credits (Cumulative)					65
Additional Subject: National Cadet Corps (NCC)					
NC 2151	National Cadet Corps III	1	5	1	7
Total Credits (Cumulative)					11
EC2101	*Signals and Systems	3	-	-	3

B. Tech. IV Semester

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
HS2001	Fundamental of Entrepreneurship	2	1	-	3
EC2201	Analog Communication	3	-	-	3
EC2202	Linear Integrated Circuits	3	-	-	3
EC2203	Digital Signal Processing	3	-	-	3
EC2204	Microprocessors and Microcontrollers	3	1	-	4
EC2205	Electronic Instrumentation and Measurement	3	-	-	3
EC2206	Digital Signal Processing Lab	-	-	2	1
EC2207	Linear Integrated Circuits Lab	-	-	2	1
EC2208	Project Based Lab1 #	-	-	2	1
Total Hours = 25		17	2	6	22
Total Credits (Cumulative)					87
Additional Subject: National Cadet Corps (NCC)					
NC2251	National Cadet Corps IV	2	-	1	3
Total Credits (Cumulative)					14
EC2201	Analog Communication	3	-	-	3

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EC2201	Analog Communication	3	-	-	3
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B. Tech. V Semester

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
EC3101	EM Fields and Transmission Lines	3	-	-	3
EC3102	Embedded Systems	3	-	-	3
EC3103	Control Systems	3	-	-	3
EC3104	Digital Communication	3	1	-	4
EC3105	VLSI Design	3	-	-	3
EC3151-3155	Department Elective-1 (A)	3	-	-	3
EC3106	Microprocessors and Embedded Systems Lab	-	-	2	1
EC3107	Communication Systems Lab	-	-	2	1
EC3108	VLSI Design Lab	-	-	2	1
EC3109	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
EC3101	EM Fields and Transmission Lines	3	-	-	3

B. Tech. VI Semester

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
EC3201	Microwave Engineering	3	-	-	3
EC3202	Machine Learning	3	1	-	4
EC3203	Optical Communication	3	-	-	3
EC3204	Digital Image Processing	3	1	-	4
EC3251-3255	Department Elective-2 (A)	3	-	-	3
EC3205	Control and Instrumentation Lab	-	-	2	1
EC3206	Optical communication Lab	-	-	2	1
EC3207	Microwave Engineering Lab	-	-	2	1
EC3208	Project Based Lab2 #	-	-	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
EC3201	Microwave Engineering	3	-	-	3

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B. Tech. VII Semester

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
HS4101	Engineering Economics and IPR	3	-	-	3
EC4101	RF and Antenna Design	3	-	-	3
EC4151-4159	Department Elective-3 (A)	3	-	-	3
EC4161-4169	Department Elective-4 (A)	3	-	-	3
EC4181-4199	Open Elective-1(C)	3	-	-	3
EC4102	RF & Antenna Lab	-	-	2	1
EC4103	Project-1#	-	-	4	2
EC 4104	Internship/Field Training	-	-	2	1
Total Hours = 23		15	-	8	19
Total Credits (Cumulative)					150
EC4101	RF and Antenna Design*	3	-	-	3

B. Tech. VIII Semester

Course Number	Subject	Scheme of Studies Periods per week			Credits
		L	T	P	
EC4251-4259	Department Elective-5 (A) (NPTEL/SWAYAM Courses only)	3	-	-	3
EC4261-4269	Department Elective-6 (A) (NPTEL/SWAYAM Courses only)	3	-	-	3
EC4201	Project-2 / Internship#	-	-	16	8
EC4202	General Proficiency	-	-	-	1
Total Hours = 22		6	-	16	15
Cumulative Credits					165

It May be earned by startup activity.

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V Semester	Departmental Elective-1 (A)
EC3151	Design of Analog IC
EC3152	Optimization Techniques
EC3153	Computer Networks
EC3154	Probability theory and Random process

VI Semester	Department Elective-2 (A)
EC3251	VLSI Technology
EC3252	Electronic Power Drive Circuits
EC3253	Deep Learning
EC3254	Digital system Design
EC3255	Quantum Communication

VII Semester	Department Elective-3 (A)
EC4151	Satellite Communication
EC4152	Low Power VLSI Design
EC4153	Broadband Optical Communication
EC4154	Mobile Communication
EC4155	Soft Computing

VII Semester	Department Elective-4 (A)
EC4161	Computer Aided Design of Digital Systems
EC4162	Edge AI/ML
EC4163	Physical Design Automation
EC4164	Cyber-Physical Systems
EC4165	Wireless Communication

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VII Semester	Open Electives 1(C) [NPTEL/SWAYAM Courses only]
EC4181	Telecom Switching Theory
EC4182	Fuzzy Logic
EC4183	IOT and Applications
EC4184	RF Design and Planning
EC4185	Nano Technology
EC 4186	Micro Electromechanical Systems

VIII Semester	Department Elective-5(A) [NPTEL/SWAYAM Courses only]
EC4251	Statistical signal processing
EC4252	CMOS RF Circuit Design
EC4253	Computer Vision and Pattern Recognition
EC4254	AI/ML for signal processing
EC4255	Biomedical Signal Processing

VIII Semester	Department Elective-6(A) [NPTEL/SWAYAM Courses only]
EC4261	RADAR & Navigation Systems
EC4262	Video Signal Processing
EC4263	Multi rate Signal Processing
EC4264	Biomedical Instrumentation
EC4265	Neural Networks

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Table 1: Different category of course in B. Tech. Scheme of study Branch.....

S. No.	Category	I& II Sem	III Sem	IV Sem	V Sem	VI Sem	VII Sem	VIII Sem	Credit Breakup	Credit (%)
1	Humanities and Social Sciences including Management courses	5	3				3		11	6.67
2	Basic Science courses	14	4						18	10.91
3	Engineering Science courses including workshop, drawing, basics of electrical/mechanical/computer etc.	14		3					17	10.3
4	Professional core courses		12	16	16	14	3		61	36.97
5	Departmental Electives Courses relevant to chosen specialization / branch				3	3	6	6	18	10.91
6	Open subjects – Electives from other technical and /or emerging subjects						3		3	1.82
7	Project work, seminar and internship in industry or elsewhere		2	1	1	1	3	8	16	9.7
8	Laboratory Courses	8	3	2	3	3	1	1	21	12.73
		41	24	22	23	21	19	15	165	
NCC		0	7	3	7	3	0	0		

Rohit Patel

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