

Birla Institute of Technology, Mesra, Ranchi

Course Structure for B.Tech. (Electronics and Communication Engineering)

Based on NEP-2020, CBCS and OBE, Effective from 2024-2025

Sr. No.	Semester of Study (Recommended)	Category of Course	Course Code	Subjects	Mode of Delivery & Credits <i>L-Lecture; T-Tutorial; P-Practical</i>			Total Credits
					L (Periods/Week)	T (Periods/Week)	P (Periods/Week)	
FIRST		THEORY						
I.1	FS		MA24101	Mathematics - I	3	1	0	4
I.2			CH24101	Chemistry	3	1	0	4
I.3	GE		EC24101	Basic Electronics	2	1	0	3
I.4			ME24101	Basics of Mechanical Engineering	2	1	0	3
I.5	FS		CE24101	Environmental Sciences	2	0	0	2
		LABORATORIES						
I.6	FS		CH24102	Chemistry Lab	0	0	2	1
I.7	GE		EC24102	Basic Electronics Lab	0	0	2	1
I.8			ME24102	Engineering Graphics	0	0	4	2
I.9			PE24102	Workshop Practice	0	0	2	1
I.10	MC		MC24 101/ 102 /103/ 104/105	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA) /Entrepreneurship	0	0	2	1
TOTAL (Theory + Labs)								22
SECOND		THEORY						
II.1	FS		MA24103	Mathematics - II	3	1	0	4
II.2			PH24101	Physics	3	1	0	4
II.3			BE24101	Biological Sciences for Engineers	2	0	0	2
II.4	GE		CS24101	Programming for Problem Solving	3	1	0	4
II.5			EE24101	Basics of Electrical Engineering	2	1	0	3
		LABORATORIES						
II.6	FS		PH24102	Physics Lab	0	0	2	1
II.7	GE		CS24102	Programming for problem Solving Lab.	0	0	2	1
II.8			EE24102	Electrical Engineering Lab.	0	0	2	1
II.9	HSS		HS24131	Communication Skill - I	0	0	3	1.5
II.10	MC		MC24 106 /107/108/10 9/110	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA) /Entrepreneurship	0	0	2	1
TOTAL (Theory + Labs)								22.5
GRAND TOTAL FOR FIRST YEAR								44.5
THIRD		THEORY						
III.1	PC		EC24201	Electronic Devices	3	1	0	4

III.2			EC24203	Digital System Design	3	0	0	3	
III.3			EC24205	Network Theory	3	1	0	4	
III.4			EC24207	Signals and Systems	3	0	0	3	
III.5			EC24209	Probability and Random Processes	3	0	0	3	
III.6		HSS	MT24131	UHV-II: Understanding Harmony	3	0	0	3	
			LABORATORIES						
III.7		PC	EC24202	Electronic Devices Lab	0	0	2	1	
III.8		PC	EC24204	Digital System Design Lab	0	0	2	1	
III.9		MC	MC24 201/202/ 203/204 / 205	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA) / Entrepreneurship	0	0	2	1	
			TOTAL (Theory + Labs)						23
	FOURTH		THEORY						
IV.1		PC	EC24251	Analog Circuits	3	1	0	4	
IV.2			EC24253	Analog Communication	3	1	0	4	
IV.3			EC24255	Computer Architecture	3	0	0	3	
IV.4			EC24257	VLSI Design	3	1	0	4	
IV.5		PE	XX24XXX / MO24201	Open Elective - I / MOOC - I	3	0	0	3	
IV.6			HS24211	Indian Knowledge System	2	0	0	0	
			LABORATORIES						
IV.7		PC	EC24252	Analog Circuits Lab	0	0	2	1	
IV.8		PC	EC24258	VLSI Design Lab	0	0	2	1	
IV.9		MC	MC24 206/ 207/208 / 209/ 210	Choice of : NCC/NSS/ PT & Games/ Creative Arts (CA) / Entrepreneurship	0	0	2	1	
			TOTAL (Theory + Labs)						21
			GRAND TOTAL FOR SECOND YEAR						44
	FIFTH		THEORY						
V.1		PC	EC24301	Electromagnetic Fields and Waves	3	1	0	4	
V.2		PC	EC24303	Digital Communication	3	0	0	3	
V.3		PC	EC24305	Microprocessors	3	0	0	3	
V.4		PC	EC24307	Data Communication and Computer Networking	3	1	0	4	
V.5		PE	EC24XXX	Program Elective-I (PE-I)	3	0	0	3	
V.6		OE	XX24XXX / MO24301	Open Elective - II / MOOC - II	3	0	0	3	
			LABORATORIES						
V.7		PC	EC24304	Communication System Lab	0	0	2	1	
V.8		PC	EC24306	Microprocessors Lab	0	0	2	1	
V.9		PC	EC24300	Project - I				2	
			TOTAL (Theory + Labs)						24
	SIXTH		THEORY						
VI.1		PC	EC24351	Digital Signal Processing	3	1	0	4	
VI.2		PC	EC24353	Control Systems	3	1	0	4	
VI.3		PC	EC24355	Embedded Systems	3	0	0	3	
VI.4		PE	EC24XXX	Program Elective-II (PE-II)	3	0	0	3	
VI.5		OE	XX24XXX / MO24303	Open Elective - III / MOOC - III	3	0	0	3	

VI.6		HSS	MT24204	Constitution of India	2	0	0	0
		LABORATORIES						
VI.7		PC	EC24352	Digital Signal Processing Lab	0	0	2	1
VI.8		PC	EC24356	Embedded Systems Lab	0	0	2	1
VI.9		PE	EC243XXX	Program Elective-II Lab	0	0	2	1
VI.10		PC	EC24350	Project - II				2
VI.11		HSS	HS24133	Communication Skill - II	0	0	3	1.5
TOTAL (Theory + Labs)								23.5
GRAND TOTAL FOR THIRD YEAR								47.5
	SEVENTH	THEORY						
VII.1	H	PC	EC24401	Microwave Theory and Techniques	3	1	0	4
VII.2		PE	EC24XXX	Program Elective-III (PE-III)	3	0	0	3
VII.3		PE	EC24XXX	Program Elective-IV (PE-IV)	3	0	0	3
VII.4		PE	EC24XXX	Program Elective-V (PE-V)	3	0	0	3
VII.5		OE	XX24XXX / MO24401	Open Elective - IV / MOOC - IV	3	0	0	3
		LABORATORIES						
VII.6		PC	EC24402	Microwave Lab	0	0	2	1
VII.7		MC	MC24400	Summer Training (Minimum Four Weeks / 160 Hrs)				4
VII.8		PC	EC24400	Project - III				3
TOTAL (Theory + Labs)								24
VIII.1	EIGHTH	PC	EC24450/ EC24490	Project-IV / Industry Internship				6
VIII.2			EC24498	Comprehensive Viva				2
TOTAL (Theory + Labs)								8
GRAND TOTAL FOR FOURTH YEAR								32
GRAND TOTAL FOR B.TECH.								168

Head
Electronics and Communication Engineering

Signature
6.1.2025

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