

**Scheme of Study (49th Senate) for
B. Tech. in Electronics and Communication
National Institute of Technology Raipur**

Semester 5

National Institute of Technology Raipur												
Course of Study and Scheme of Examination							B. Tech. 5th Semester				Branch: ECE	
S. No.	Subject Code	Subject Name	Periods per Week			TA	Examination Scheme				Total Marks	Credits
			L	T	P		MSE/MTR		ESE/ESVE			
							Theory	Prac.	Theory	Prac.		
1	EC105101EC	Digital Communication	3	1	0	20	30		50		100	4
2	EC105102EC	Microprocessors & Microcontrollers	3	1	0	20	30		50		100	4
3	EC105103EC	Control System Engineering	3	1	0	20	30		50		100	4
4		Program Elective 1	3	0	0	20	30		50		100	3
5		Open Elective 1	3	0	0	20	30		50		100	3
6	EC105401EC	Digital Comm. Lab	0	0	2	40		20		40	100	1
7	EC105402EC	Microprocessors and Microcontrollers Lab	0	0	2	40		20		40	100	1
8	EC105701EC	Summer Internship I	-	-	-	40		20		40	100	1
												21

List of Program Elective 1

Subject Code	Name of Subject
EC105201EC	Operating Systems
EC105202EC	Optimization Techniques
EC105203EC	Data Analytics with Python

List of Open Electives 1

Subject Code	Name of Subject
EC105301EC	Semiconductor Devices and IC Technology
EC105302EC	Optoelectronic Components and Devices

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Semester 6

National Institute of Technology Raipur												
Course of Study and Scheme of Examination							B. Tech. 6th Semester				Branch: ECE	
S. No.	Subject Code	Subject Name	Periods per Week			TA	Examination Scheme				Total Marks	Credits
			L	T	P		MSE/MTR		ESE/ESVE			
							Theory	Prac.	Theory	Prac.		
1	EC106101EC	Wireless Communication	3	1	0	20	30		50		100	4
2	EC106102EC	Microwave Engineering	3	1	0	20	30		50		100	4
3	EC106103EC	VLSI Design	3	1	0	20	30		50		100	4
4		Program Elective 2	3	0	0	20	30		50		100	3
5		Program Elective 3	3	0	0	20	30		50		100	3
6		Open Elective 2	3	0	0	20	30		50		100	3
7	EC106401EC	Microwave Lab	0	0	2	40		20		40	100	1
8	EC106402EC	VLSI Design Lab	0	0	2	40		20		40	100	1
												23

List of Program Elective 2	
Subject Code	Name of Subject
EC106201EC	Advanced Digital Signal Processing
EC106202EC	Computer Communication Network
EC106203EC	Metaheuristic Optimization
EC106204EC	Statistical Signal Processing

List of Program Elective 3	
Subject Code	Name of Subject
EC106205EC	Soft Computing
EC106206EC	Biomedical Signal Processing
EC106207EC	VLSI Technology
EC106208EC	Semiconductor Device Modeling

List of Open Elective 2	
Subject Code	Name of Subject
EC106301EC	Machine Learning and Pattern Recognition
EC106302EC	Information Theory and Coding

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Semester 7

National Institute of Technology Raipur												
Course of Study and Scheme of Examination							B. Tech. 7th Semester				Branch: ECE	
S. No.	Subject Code	Subject Name	Periods per Week			TA	Examination Scheme				Total Marks	Credits
			L	T	P		MSE/MTR		ESE/ESVE			
							Theory	Prac.	Theory	Prac.		
1	EC107101EC	Optical Communication	3	1	0	20	30		50		100	4
2	EC107102EC	5G Communication and Beyond	3	1	0	20	30		50		100	4
3		Program Elective 4	3	0	0	20	30		50		100	3
4		Program Elective 5	3	0	0	20	30		50		100	3
5		Open Elective 3	3	0	0	20	30		50		100	3
6	EC107401EC	Optical Communication Lab	0	0	2	40		20		40	100	1
7	EC107501EC	Project I	0	0	6	40		20		40	100	3
8	EC107701EC	Summer Internship II	-	-	-	40		20		40	100	2
												23

List of Program Elective 4	
Subject Code	Name of Subject
EC107201EC	Introduction to Deep Learning
EC107202EC	Satellite and Space Systems
EC107203EC	Digital Image Processing
EC107204EC	Low Power Circuit Design

List of Program Elective 5	
Subject Code	Name of Subject
EC107205EC	Wireless Sensor Network
EC107206EC	Radar Engineering
EC107207EC	Design, Verification, and Testing of VLSI Circuits
EC107208EC	Analog IC Design

List of Open Elective 3	
Subject Code	Name of Subject
EC107301EC	Real-time Embedded Systems
EC107302EC	Industrial Internet of Things
EC107303EC	Nanoelectronics

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Semester 8

National Institute of Technology Raipur												
Course of Study and Scheme of Examination							B. Tech. 8th Semester				Branch: ECE	
S. No.	Subject Code	Subject Name	Periods per Week			TA	Examination Scheme				Total Marks	Credits
			L	T	P		MSE/MTR		ESE/ESVE			
							Theory	Prac.	Theory	Prac.		
1		Open Elective 4	3	0	0	20	30		50		100	3
2		Open Elective 5	3	0	0	20	30		50		100	3
3	EC108501EC	Project-II	0	0	8	40		20		40	100	4
	EC108701EC	Major Internship*				40		20		40	100	4 (3 [^] +1 ^{^^})
											10	

*For semester long internship as per clause number 4.E.6 of CBCS B. Tech Ordinance.

[^] - Report submission, end semester presentation and viva

^{^^} - Mid semester examination (viva/presentation)

List of Open Elective 4	
Subject Code	Name of Subject
EC108301EC	Computer Vision
EC108302EC	Free space Optics
EC108303EC	Natural Language Processing
EC108304EC	VLSI Signal Processing

List of Open Elective 5	
Subject Code	Name of Subject
EC108305EC	Cryptography and Network Security
EC108306EC	Introduction to Reinforcement Learning
EC108307EC	MEMS Systems