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# Curriculum of B.Tech Degree Programme in Electronics and Communication Engineering

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Effective from 2017 Admitted Batch onwards



Department of Electronics & Communication Engineering

National Institute of Technology Sikkim

South Sikkim 737 139

## Curriculum of B.Tech in ECE, NIT Sikkim

### Semester III

Sl. No.	Course Code	Course Title	L	T	P	Credits
1.	MA 13101	Mathematics III	3	1	0	4
2.	EC 13101	Network Analysis and Synthesis	3	1	0	4
3.	EC 13102	Signals and Systems	2	1	2	4
4.	EC 13103	Probability Theory and Stochastic Process	2	1	0	3
5.	EC 13104	Semiconductor Physics and Devices	3	0	0	3
6.	EC 13105	Analog Electronics-I	3	0	0	3
7.	EC 13201	Analog Electronics Lab	0	0	3	2
	Total Credits		16	4	5	23

### Semester IV

Sl. No.	Course Code	Course Title	L	T	P	Credits
1.	MA 14101	Mathematics IV	3	1	0	4
2.	EC 14101	Digital Electronics	3	1	0	4
3.	EC 14102	Analog Electronics – II	3	0	2	4
4.	EC 14103	Electro-Magnetic Field Theory	3	0	0	3
5.	EC 14104	Analog Communication	3	0	0	3
6.	EC 14201	Analog Communication Lab	0	0	3	2
7.	EC 14202	Digital Electronics Lab	0	0	3	2
	Total Credits		15	2	8	22

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### Semester V

Sl. No.	Course Code	Course Title	L	T	P	Credits
1.	EC 15101	Digital Communication	3	1	0	4
2.	EC 15102	Microprocessor and Microcontroller	3	0	0	3
3.	EC 15103	Transmission Line, Antenna & Propagation	2	1	0	3
4.	EC 15104	Microelectronics Technology	3	0	0	3
5.	EC 15105/ EE	Control Theory	3	0	0	3
6.	EC 15201	Digital Communication Lab	0	0	3	2
7.	EC 15202	Microprocessor & Microcontroller Lab	0	0	3	2
8.	EC 15401	Colloquium/ Industrial Lecture/ Seminar	0	0	2	1
	Total Credits		14	2	8	21

### Semester VI

Sl. No.	Course Code	Course Title	L	T	P	Credits
1.	EC 16101	Computer Networks	3	0	2	4
2.	EC 16102	Microwave Engineering	2	1	0	3
3.	EC 16103	Digital Signal Processing	3	0	0	3
4.	EC 16104	Information Theory & Error Control Coding	2	1	0	3
5.	EC 163XX	Elective-I	3	0	0	3
6.	HS 16101	Professional Communication	2	0	0	2
7.	EC 16201	Microwave Engineering & Antenna Lab	0	0	3	2
8.	EC 16401	Minor Project	0	0	2	1
	Total Credits		15	2	7	21

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### Semester VII

Sl. No.	Course Code	Course Title	L	T	P	Credits
1.	EC 17101	Wireless Communication	3	0	2	4
2.	HS 17101	Principle of Management & Entrepreneurship	2	0	0	2
3.	EC 173XX	Elective – II	3	0	0	3
4.	EC 173XX	Elective – III	3	0	0	3
5.	EC 17201	Digital Signal Processing Lab	0	0	3	2
6.	EC 17401	Major Project I	0	0	4	3
7.	EC 17402	Summer Internship / Summer Project*	0	0	2	1
	Total Credits		11	0	11	18

\*Summer Internship / Summer Project may be carried out after semester VI

### Semester VIII

Sl. No.	Course Code	Course Title	L	T	P	Credits
1.	EC 183XX	Elective – IV	3	0	0	3
2.	EC 183XX	Elective – V	3	0	0	3
3.	EC 183XX	Elective – VI	3	0	0	3
4.	HS 18101	Engineering Economics	2	0	0	2
5.	EC 18401	Major Project II	0	0	6	4
	Total Credits		11	0	6	15

# One elective may be offered as global elective for specific departments.

## Curriculum of B.Tech in ECE, NIT Sikkim

### List of Electives for 6<sup>th</sup> semester:

Sl. No.	Code	Course Title	Credit
1	EC 16301	High Speed Semiconductor Devices	3
2	EC 16302	Signal Estimation and Detection	3
3	EC 16303	Introduction to Nanoscience and Nanotechnology	3
4	EC 16304	Computer Organization & Architecture	3
5	EC 16305	Power Electronics	3
6	EC 16306	Telecommunication Switching & Networks	3
7	EC 16307	Active Network Synthesis	3
8	EC 16308	High Speed Digital Circuits	3

### List of Electives for 7<sup>th</sup> semester:

Sl. No.	Code	Course Title	Credit
1	EC 17301	Modeling and Testing of Digital Systems	3
2	EC 17302	Telecommunication System & Network Modelling	3
3	EC 17303	State of the art and Future Memories	3
4	EC 17304	Wavelet Theory	3
5	EC 17305	Antenna Theory	3
6	EC 17306	Quantum Computation	3
7	EC 17307	Communication Switching Systems	3
8	EC 17308	Advanced Communication Networks	3
9	EC 17309	Opto-electronic Devices and Systems	3
10	EC 17310	Reliability of Semiconductor Devices	3
11	EC 17311	Data Structures and Algorithms	3
12	EC 17312	VLSI Design	3
13	EC 17313	Operating Systems	3
14	EC 17314	Cryptography & Network Security	3

### List of Electives for 8<sup>th</sup> semester:

Sl. No.	Code	Course Title	Credit
1	EC 18301	MOS Device Modeling	3
2	EC 18302	Multi Rate Systems	3
3	EC 18303	Digital Image Processing	3
4	EC 18304	Opto-electronic Communication Systems	3
5	EC 18305	Radar Engineering	3
6	EC 18306	Computational Electromagnetics	3
7	EC 18307	Signal Compression	3
8	EC 18308	Advanced Wireless Communication	3
9	EC 18309	Neural Networks and Genetic Algorithm	3
10	EC 18310	Wireless Adhoc and sensor Networks	3

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Sl. No.	Code	Course Title	Credit
11	EC 18311	Architecture of Advanced Processors	3
12	EC 18312	Radiation and Propagation	3
13	EC 18313	Analog MOS Integrated Circuits	3
14	EC 18314	Silicon on Insulator & Advanced MOSFET based structures	3
15	EC 18315	Speech Processing	3
16	EC 18316	Data Base Management System	3
17	EC 18317	Ultra Wideband Communication	3
18	EC 18318	Software Engineering	3
19	EC 18319	Embedded System Design	3
20	EC 18320	EMI EMC	3
21	EC 18321	Satellite Communication	3
22	EC 18322	MEMS/NEMS	3