

**ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT
NATIONAL INSTITUTE OF TECHNOLOGY, KURUSKHETRA-136119**

Subject: Course Structure of B.Tech. ECE Programme (w.e.f. 2017-18)

Semester I

Code	Course	L	T	P	Credits
HSIR11	Communication Skills in English	2	0	2	3
MAIR11	Differential Calculus and Differential Equations	3	1	0	4
PHIR11	Physics-I (Theory & Lab)	2	1	2	4
CHIR11	Energy and Environmental Science (Theory & Lab)	2	0	2	3
CSIR11	Basics for programming (Theory & Lab)	2	0	2	3
ECIR11	Introduction to Electronics and Communication Engg.	2	0	0	2
MEIR11	Engineering Practice	1	0	3	2
SWIR11	Sports/NCC/Yoga	0	0	2	1
	Total	14	2	13	22

Semester II

Code	Course	L	T	P	Credits
MAIR12	Integral Calculus and Difference Equations	3	1	0	4
HSIR12	Economics for Engineers	2	1	0	3
PHIR13	Physics-II (Theory & Lab)	2	1	2	4
CHIR13	Chemistry (Theory & Lab)	2	1	2	4
ECPC10	Introduction to Semiconductors	3	0	0	3
ECPC11	Circuit Theory (Theory & Lab)	2	1	2	4
ECPC12	Signals and Systems	3	1	0	4
CEIR12	Engineering Graphics	1	0	3	2
	Total	18	6	9	28

Semester III

Code	Course	L	T	P	Credits
ECPC30	Electronic Devices and Circuits	3	1	0	4
ECPC31	Fields and Waves	3	1	0	4
ECPC32	Random Variables and Stochastic Processes	3	1	0	4
ECPC33	Measurement and Instrumentation	3	0	0	3
ECPC34	Digital Design	3	1	0	4
ECPC35	Communication Engineering	3	1	0	4
ECLR30	Electronics-I Lab	0	0	2	1
ECLR31	Digital Design lab	0	0	2	1
ECLR32	Instrumentation Lab	0	0	2	1
ECLR33	MATLAB Programming	0	0	2	1
Total		18	5	8	27

Semester IV

Code	Course	L	T	P	Credits
MAIR23	Complex Analysis and Partial Differential Equations	3	1	0	4
ECPC40	Analog Electronics	3	1	0	4
ECPC43	Control System Engineering	3	1	0	4
ECPC44	Digital Communication	3	1	0	4
ECPExx	...	3	0	0	3
ECPExx	...	3	0	0	3
ECLR40	Electronics-II Lab	0	0	2	1
ECLR41	Communication Lab	0	0	2	1
ECLR45	Digital Communication Lab	0	0	2	1
ECLR43	Object Oriented Programming Lab	0	0	2	1
Total		18	4	8	26

- A. (1) ECPE40 Object Oriented Programming (2) ECPE41 Network Analysis and Synthesis
- B. (1) ECPE42 Computer Architecture (2) ECPE43 Digital Design using Verilog

Semester V

Code	Course	L	T	P	Credits
ECPC50	Information Theory and Coding	3	1	0	4
ECPC51	Antenna & Wave Propagation	3	1	0	4
ECPC52	Digital Signal Processing	3	1	0	4
ECPC55	Microprocessor & Microcontroller	3	0	0	3
ECPExx	...	3	0	0	3
ECPExx	...	3	0	0	3
ECLR51	DSP Lab	0	0	2	1
ECLR52	Transmission Lines & Antenna Lab	0	0	2	1
ECLR53	Embedded systems Lab	0	0	3	1
	Total	18	3	7	24

- A. (1) ECPE50 Data Structure (2) ECPE51 Computer Networks
 (3) ECPE52 Neuro-Fuzzy Systems
- B. (1) ECPE53 Analog and Mixed Signal Design (2) ECPE 54 Embedded System Design
- Open Electives** (1) ECOE50 Electronics Engg. (2) ECOE51 Signal Analysis

Semester VI

Code	Course	L	T	P	Credits
ECIR60/61	Summer Internship/Project Work	0	0	20	10
	Total	0	0	20	10

Semester VII

Code	Course	L	T	P	Credits
ECPC70	Microwave Theory and Devices	3	1	0	4
ECPC71	Microelectronics & VLSI Design	3	1	0	4
ECPC72	Wireless and Mobile Communication	3	1	0	4
ECPExx		3	0	0	3
ECOExx		3	0	0	3
ECLR70	Microwave Lab	0	0	3	1
ECLR71	HDL Lab	0	0	2	1
ECLR72	Seminar	0	1	0	1
IR14 EPR1	Management Course	3	0	0	3
	Total	18	4	5	24

- A. (1) ECPE70 Wireless Sensor Networks (2) ECPE71 Digital Image Processing
 (3) ECPE72 Multicarrier Communication
 (4) ECPE73 Satellite and Radar Engg. (5) ECPE74 Advanced DSP
 (6) ECPE75 Antenna Design
 (7) ECPE76 Optical Communications

- B. (1) ECPE77 Biomedical Electronics (2) ECPE78 Nano Electronics
 (3) ECPE79 Digital IC Design

Open Electives

- (1) ECOE70 Cellular Mobile Communication (2) ECOE71 Introduction to Communication Engineering
 (2) ECOE72 VHDL

Semester VIII

Code	Course	L	T	P	Credits
ECPC80	Data Security	3	0	0	3
ECPExx		3	0	0	3
ECPExx		3	0	0	3
ECOExx		3	0	0	3
ECIR80/81	Project	0	0	6	3
HSIR13	Professional Ethics & IPR	3	0	0	3
ECIR84	Comprehensive Viva	0	0	0	3
	Total	15	0	6	21

- A. (1) ECPE80 Computer Crime Investigation and Forensics
 (2) ECPE81 Pattern Recognition & Machine Learning
 (3) ECPE82 Network Security (4) ECPE83 Internet of Things
 (5) ECPE84 Artificial Intelligence and Expert Systems (6) ECPE85 Computer Vision
 B. (1) ECPE86 Memory Design (2) ECPE87 Bio-sensors (3) ECPE88 RF Circuit Design

Open Electives:

- (1) ECOE80 Microcontrollers (2) ECOE81 Sensor Technology

Summary Branch Subjects

S. No.	Category	Total No.	Credits
1.	Theory Courses IR/PC/PE/OE	30	105
2.	Lab Courses LR	13	13
3.	Seminar	01	1
4.	Internship/project+Project	02	13
5.	Comprehensive Viva	01	3
6.	Others IR	15	47
7.	Even Semesters Load LTP	103	84
8.	Odd Semesters Load LTP	116	98
Grand Total Credits			182