B.Tech. in Electronics and Communication Engineering (ECE)

1st Semester

Courses	T	L	T	P	C
Classical Physics	IC	3	1	0	4
UG Physics Laboratory	IC	0	0	3	2
Mathematics – I	IC	3	1	0	4
Basic Electronics	IC	3	1	0	4
Basic Electronics Lab	IC	0	0	3	2
Computer Programming	IC	3	0	0	3
Computer Programming Lab	IC	0	0	3	2
Technical Comm. in English	IC	3	0	0	3

2nd Semester

Courses	T	L	T	P	C
Mathematics – II	IC	3	1	0	4
Data Structures and Algorithms	IC	3	0	0	3
Data Structures & Algorithms Lab	IC	0	0	2	1
Network Analysis & Synthesis	PC	3	0	0	3
Environmental Ecology & Biology	IC	2	0	2	3
Value Education and Ethics	IC	3	0	0	3
Analog Electronics	PC	3	0	0	3
Analog Electronics Lab	PC	0	0	3	2

3rd Semester

Courses	T	L	T	P	C
Mathematics – III	IC	3	1	0	4
Semiconductor Devices & Circuits	PC	3	0	0	3
Signals and Systems	PC	3	0	0	3
Engineering Electromagnetics	PC	3	0	0	3
Digital Circuits and Systems	PC	3	0	0	3
Digital Circuits and Systems Lab	PC	0	0	3	2
Design Lab – 1	PC	0	0	3	2

4th Semester

Courses	T	L	T	P	C
Probability and Statistics	PC	3	0	1	4
Principles of Communication	PC	3	0	0	3
Signals & Systems & Comm. Lab	PC	0	0	3	2
Control System Engineering	PC	3	0	0	3
Microwave Engineering	PC	3	0	0	3
Microwave Engineering Lab	PC	0	0	3	2
Introduction to VLSI	PC	3	0	0	3

5th Semester

Courses	T	L	T	P	C
Economics for Engineers / Psychology, Technology & Society	IC	3	0	0	3
Digital Communication	PC	3	0	0	3
Digital Communication Lab	PC	0	0	3	2
Microprocessors & Interfacing	PC	3	0	0	3
Microprocessors & Interfacing Lab	PC	0	0	3	2
Digital Signal Processing	PC	3	0	0	3
Digital Signal Processing Lab	PC	0	0	3	2
Program Elective - 1	PE	3	0	0	3

6th Semester

Courses	T	L	T	P	C
Economics for Engineers / Psychology, Technology & Society	IC	3	0	0	3
Computer Networks	PC	3	0	2	4
Design Lab - 2	PC	0	0	3	2
Other Elective - 1	OE	3	0	0	3
Program Elective - 2	PE	3	0	0	3
Program Elective - 3	PE	3	0	0	3
B.Tech. Project	IC	3	0	0	3

7th Semester

Courses	T	L	T	P	C
B.Tech. Project	IC	3	0	0	3
Program Elective – 4	PE	3	0	0	3
Program Elective – 5	PE	3	0	0	3
Other Elective – 2	OE	3	0	0	3

8th Semester

Courses	T	L	T	P	C
Program Elective – 6	PE	3	0	0	3
Other Elective – 3	OE	3	0	0	3
Other Elective – 4	OE	3	0	0	3

B.Tech. (Hons.) in CCE with specialization in Artificial Intelligence & Data Science

1st Semester

Courses	T	L	T	P	C
Classical Physics	IC	3	1	0	4
UG Physics Laboratory	IC	0	0	3	2
Mathematics – I	IC	3	1	0	4
Basic Electronics	IC	3	1	0	4
Basic Electronics Lab	IC	0	0	3	2
Computer Programming	IC	3	0	0	3
Computer Programming Lab	IC	0	0	3	2
Technical Comm. in English	IC	3	0	0	3

2nd Semester

Courses	T	L	T	P	C
Mathematics – II	IC	3	1	0	4
Data Structures and Algorithms	IC	3	0	0	3
Data Structures and Algorithms Lab	IC	0	0	2	1
Environmental Ecology & Biology	IC	2	0	2	3
Value Education and Ethics	IC	3	0	0	3
Analog Electronics	PC	3	0	0	3
Discrete Mathematical Structures	PC	3	0	0	3
Introduction to Modern Physics*	OE	3	0	0	3

3rd Semester

Courses	T	L	T	P	C
Mathematics – III	IC	3	1	0	4
Com. Organization & Architectures	PC	3	0	2	4
Advanced Programming	PC	3	0	2	4
Signals and Systems	PC	3	0	0	3
Digital Circuits and Systems	PC	3	0	0	3
Digital Circuits and Systems Lab	PC	0	0	3	2
IDMS	PC	3	0	2	4

4th Semester

Courses	T	L	T	P	C
Design and Analysis of Algorithms	PC	3	0	0	3
Operating Systems	PC	3	0	2	4
Control System Engineering	PC	3	0	0	3
Principles of Communication	PC	3	0	0	3
Signals & Systems and Comm. Lab	PC	0	0	3	2
Probability and Statistics	PC	3	1	0	4

5th Semester

Courses	T	L	T	P	C
Economics for Engineers / Psychology, Technology & Society	IC	3	0	0	3
Introduction to Data Science	PC	3	0	0	3
Artificial Intelligence	PC	3	0	0	3
Digital Communication	PC	3	0	0	3
Digital Communication Lab	PC	0	0	3	2
Digital Signal Processing	PC	3	0	0	3
Digital Signal Processing Lab	PC	0	0	3	2
Software Engineering	PC	3	0	0	3
Multiagent Systems	SC	3	0	0	3
Data Science Lab	SC	0	0	2	1
Artificial Intelligence Lab	SC	0	0	2	1

6th Semester

Courses	T	L	T	P	C
Computer Networks	PC	3	0	2	4
Internet of Things	PC	3	0	2	4
BTP	IC	3	0	0	3
Program Elective – 1	PE	3	0	0	3
Other Elective – 1	OE	3	0	0	3
Machine Learning	SC	3	0	0	3
Machine Learning Lab	SC	0	0	2	1
Specialization Elective 1	SE	3	0	0	3

7th Semester

Courses	T	L	T	P	C
BTP	IC	3	0	0	3
Program Elective – 2	PE	3	0	0	3
Program Elective – 3	PE	3	0	0	3
Other Elective – 2	OE	3	0	0	3
Other Elective – 3	OE	3	0	0	3
Introduction to Big Data	SC	2	0	2	3
Specialization Elective 2	SE	3	0	0	3

8th Semester

Courses	T	L	T	P	C
Program Elective – 4	PE	3	0	0	3
Other Elective – 4	OE	3	0	0	3
Ethics in AI & DS	SC	1	0	0	1

B.Tech.-M.Tech. (5-year Integrated Dual Degree) ECE

1st Semester

Courses	T	L	T	P	C
Classical Physics	IC	3	1	0	4
UG Physics Laboratory	IC	0	0	3	2
Mathematics – I	IC	3	1	0	4
Basic Electronics	IC	3	1	0	4
Basic Electronics Lab	IC	0	0	3	2
Computer Programming	IC	3	0	0	3
Computer Programming Lab	IC	0	0	3	2
Technical Comm. in English	IC	3	0	0	3

2nd Semester

Courses	T	L	T	P	C
Mathematics – II	IC	3	1	0	4
Data Structures & Algorithms	IC	3	0	0	3
Data Structures & Algorithms Lab	IC	0	0	2	1
Network Analysis and Synthesis	PC	3	0	0	3
Environmental Ecology & Biology	IC	2	0	2	3
Value Education and Ethics	IC	3	0	0	3
Analog Electronics	PC	3	0	0	3
Analog Electronics Lab	PC	0	0	3	2

3rd Semester

Courses	T	L	T	P	C
Mathematics – III	IC	3	1	0	4
Semiconductor Devices & Circuits	PC	3	0	0	3
Signals and Systems	PC	3	0	0	3
Engineering Electromagnetics	PC	3	0	0	3
Digital Circuits and Systems	PC	3	0	0	3
Digital Circuits and Systems Lab	PC	0	0	3	2
Design Lab – 1	PC	0	0	3	2

4th Semester

Courses	T	L	T	P	C
Probability and Statistics	PC	3	0	1	4
Principles of Communication	PC	3	0	0	3
Signals & Systems & Comm. Lab	PC	0	0	3	2
Control System Engineering	PC	3	0	0	3
Microwave Engineering	PC	3	0	0	3
Microwave Engineering Lab	PC	0	0	3	2
Introduction to VLSI	PC	3	0	0	3

5th Semester

Courses	T	L	T	P	C
Economics for Engineers / Psychology, Technology & Society	IC	3	0	0	3
Digital Communication	PC	3	0	0	3
Digital Communication Lab	PC	0	0	3	2
Microprocessors & Interfacing	PC	3	0	0	3
Microprocessors & Interfacing Lab	PC	0	0	3	2
Digital Signal Processing	PC	3	0	0	3
Digital Signal Processing Lab	PC	0	0	3	2
Program Elective - 1	PE	3	0	0	3

6th Semester

Courses	T	L	T	P	C
Economics for Engineers / Psychology, Technology & Society	IC	3	0	0	3
Computer Networks	PC	3	0	2	4
Design Lab - 2	PC	3	0	3	2
Other Elective - 1	OE	0	0	0	3
Program Elective - 2	PE	3	0	0	3
Program Elective - 3	PE	3	0	0	3

7th Semester

Courses	T	L	T	P	C
M.Tech. Thesis	PC	3	0	0	3
Program Elective – 4	PE	3	0	0	3
Program Elective – 5	PE	3	0	0	3
Other Elective – 2	OE	3	0	0	3
Research Field Elective – 1	PE	3	0	0	3

8th Semester

Courses	T	L	T	P	C
M.Tech. Thesis	PC	3	0	0	3
Program Elective – 6	PE	3	0	0	3
Other Elective – 3	OE	3	0	0	3
Other Elective – 4	OE	3	0	0	3
Research Field Elective – 2	PE	3	0	0	3

9th Semester

Courses	T	L	T	P	C
M.Tech. Thesis	PC	9	0	0	9
Research Field Elective – 3	PE	3	0	0	3

10th Semester

Courses	T	L	T	P	C
M.Tech. Thesis	PC	9	0	0	9
Research Field Elective – 4	PE	3	0	0	3

M.Tech. in Electronics and Communication Engineering

1st Semester

Courses	C
Mathematical Structures for Engg.	4
Information Theory and coding	4
Modern digital communication	4
Program Elective - 1	4
Laboratory 1	2

2nd Semester

Courses	C
Modeling and simulation	4
Tech. Writing & Research Metho.	4
Wireless Communication	4
Program Elective – 2	4
Open Elective	4
Laboratory – 2	2

3rd Semester

Courses	C
M. Tech. Thesis	16

4th Semester

Courses	C
M. Tech. Thesis	16

List of Programme Electives

Advanced DSP	Design for Testability	Microwave Circuits and Systems
Analog VLSI Circuits	Digital Image Processing	Modeling and Simulation
Antenna Engineering	Digital Systems Design with FPGAs	Modern Digital Communication
Broadband Communication	Embedded Systems	Telecommunications Switching Systems & Networks
Co-operative Communication based Advanced Wireless Systems"	Embedded Systems and Design	Wireless Communication
	Information Theory and Coding	

List of other electives for UG students has been provided in page no 16.

Faculty Members

Raghuvir Singh Tomar
Emeritus Professor & HoD
Ph.D., IIT Kanpur
Research Areas: Electromagnetics, Radio Frequency and Microwaves, Antennas

Ranjan Gangopadhyay
Research Professor
Ph.D., IIT Kharagpur
Research Areas: Photonics & Wireless Communication, Cognitive Radio

Ganesh Dutt Sharma
Emeritus Professor
Ph.D., IIT Delhi
Research Areas: Organic Electronics, Organic Solar Cells, Dye Sensitized Solar Cells, Nano-Science & Technology

Divyang Rawal
Associate Professor
Ph.D., DAIICT Gandhinagar
Research Areas: ICT, Signal Processing for Communication