

## Curriculum Y17 Onwards

### 5 Year Integrated B. Tech. – M. Tech. (Dual-Degree) in Electronics and Communication Engineering

#### 1st Semester:

S. No.	Course Code	Course Description	Type	L	T	P	Credits
1	PHY102	Classical Physics	IC	3	1	0	4
2	PHY113	UG Physics Laboratory	IC	0	0	3	2
3	MTH102	Mathematics – I	IC	3	1	0	4
4	ECE105	Basic Electronics	IC	3	1	0	4
5	ECE106	Basic Electronics Lab	IC	0	0	3	2
6	CSE104	Computer Programming	IC	3	0	0	3
7	CSE104(L)	Computer Programming Lab	IC	0	0	3	2
8	ENG105(B)	Technical Communication in English	IC	3	0	0	3
<b>Total Credits = 24</b>							

#### 2nd Semester:

S. No.	Course Code	Course Description	Type	L	T	P	Credits
1	MTH108	Mathematics – II	IC	3	1	0	4
2	CSE213	Data Structures and Algorithms	IC	3	0	0	3
3	CSE213(L)	Data Structures and Algorithms Lab	IC	0	0	2	1
4	ECE113	Network Analysis and Synthesis	PC	3	0	0	3
5	MME201	Environmental Ecology & Biology	IC	2	0	2	3
6	HSS102	Value Education and Ethics	IC	3	0	0	3
7	ECE111	Analog Electronics	PC	3	0	0	3
8	ECE112	Analog Electronics Lab	PC	0	0	3	2
9	PHY114	Introduction to Modern Physics*	OE	3	0	0	3
<b>Total Credits* = 22</b>							

#### 3rd Semester:

S. No.	Course Code	Course Description	Type	L	T	P	Credits
1	MTH213	Mathematics – III	IC	3	1	0	4
2	ECE216	Semiconductor Devices and Circuits	PC	3	0	0	3
3	ECE217	Signals and Systems	PC	3	0	0	3
4	ECE332	Engineering Electromagnetics	PC	3	0	0	3
5	ECE214	Digital Circuits and Systems	PC	3	0	0	3
6	ECE215	Digital Circuits and Systems Lab	PC	0	0	3	2
7	ECE218	Design Lab – 1	PC	0	0	3	2
<b>Total Credits = 20</b>							

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#### 4th Semester:

S. No.	Course Code	Course Description	Type	L	T	P	Credits
1	MTH222	Probability and Statistics	PC	3	0	1	4
2	ECE220	Principles of Communication	PC	3	0	0	3
3	ECE223	Signals & Systems and Communication Lab	PC	0	0	3	2
4	ECE327	Control System Engineering	PC	3	0	0	3
5	ECE221	Microwave Engineering	PC	3	0	0	3
6	ECE222	Microwave Engineering Lab	PC	0	0	3	2
7	ECE224	Introduction to VLSI	PC	3	0	0	3
<b>Total Credits = 20</b>							

#### 5th Semester:

S. No.	Course Code	Course Description	Type	L	T	P	Credits
1	HSS204/ HSS203	Economics for Engineers / Psychology, Technology and Society	IC	3	0	0	3
2	ECE325	Digital Communication	PC	3	0	0	3
3	ECE324	Digital Communication Lab	PC	0	0	3	2
4	ECE331	Microprocessors & Interfacing	PC	3	0	0	3
5	ECE331(L)	Microprocessors & Interfacing Lab	PC	0	0	3	2
6	ECE326	Digital Signal Processing	PC	3	0	0	3
7	ECE323	Digital Signal Processing Lab	PC	0	0	3	2
8		Program Elective -1	PE	3	0	0	3
<b>Total Credits = 21</b>							

#### 6th Semester:

S. No.	Course Code	Course Description	Type	L	T	P	Credits
1	HSS204/ HSS203	Economics for Engineers / Psychology, Technology and Society	IC	3	0	0	3
2	CSE332	Computer Networks	PC	3	0	2	4
3	ECE329	Design Lab -2	PC	0	0	3	2
4		Other Elective-1	OE	3	0	0	3
5		Program Elective -2	PE	3	0	0	3
6		Program Elective -3	PE	3	0	0	3
<b>Total Credits = 18</b>							

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### 5 Year Integrated B. Tech. – M. Tech. (Dual-Degree) in Electronics and Communication Engineering

#### 7th Semester:

S. No.	Course Code	Course Description	Type	L	T	P	Credits
1		M.Tech. Thesis	PC	3	0	0	3
2		Program Elective – 4	PE	3	0	0	3
3		Program Elective – 5	PE	3	0	0	3
4		Other Elective – 2	OE	3	0	0	3
5		Research Field Elective – 1	PE	3	0	0	3
<b>Total Credits = 15</b>							

#### 8th Semester:

S. No.	Course Code	Course Description	Type	L	T	P	Credits
1		M.Tech. Thesis	PC	3	0	0	3
2		Program Elective – 6	PE	3	0	0	3
3		Other Elective – 3	OE	3	0	0	3
4		Other Elective – 4	OE	3	0	0	3
5		Research Field Elective – 2	PE	3	0	0	3
<b>Total Credits = 15</b>							

#### 9th Semester:

S. No.	Course Code	Course Description	Type	L	T	P	Credits
1		M.Tech. Thesis	PC	9	0	0	9
2		Research Field Elective – 3	PE	3	0	0	3
<b>Total Credits = 12</b>							

#### 10<sup>th</sup> Semester:

S. No.	Course Code	Course Description	Type	L	T	P	Credits
1		M.Tech. Thesis	PC	9	0	0	9
2		Research Field Elective – 4	PE	3	0	0	3
<b>Total Credits = 12</b>							

\* A student can take Introduction to Modern Physics course in 2nd semester in lieu of one less Other Elective in remaining semesters.

<b>Total Credits</b>	<b>179</b>
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#### Selective list of Programme Electives

S. No.	Name of course
1	Advanced DSP
2	Analog VLSI Circuits
3	Antenna Engineering
4	Broadband Communication
5	Co-operative Communication based Advanced Wireless Systems
6	Design for Testability
7	Digital Image Processing
8	Digital Systems Design with FPGAs
9	Embedded Systems
10	Embedded Systems and Design
11	Information Theory and Coding
12	Microwave Circuits and Systems
13	Modeling and Simulation
14	Modern Digital Communication
15	Telecommunications Switching Systems and Networks
16	Wireless Communication

#### Selective list of Other Electives:

S. No.	Name of course
1	Active Directory
2	Algebra
3	Automotive Electronics
4	Autosar
5	Basics of Finance and Soft Skills
6	Bio-Medical Engineering
7	Biosensors: Concepts and Applications
8	Cinema and Indian Society
9	Classical Mechanics and Field Theory
10	Colonialism and the Making of Modern India
11	Computational Physics
12	Corpus Pragmatics
13	Digital VLSI Circuits
14	Electrical Machines & Power Systems
15	Engineering Chemistry
16	Entrepreneurship Practice

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### 5 Year Integrated B. Tech. – M. Tech. (Dual-Degree) in Electronics and Communication Engineering

17	Ethnic Conflict: Literature and South Asia
18	French
19	Graph Theory
20	Green Communication and Networking
21	Indian Modernity: Text & Context
22	Industrial Engineering and Management
23	Industrial Management
24	International Economics and Soft Skills
25	Internet of Things
26	Introduction to Nano Science and Engineering
27	Linear Algebra
28	Logical and Critical Thinking
29	Macro Economics for Managers
30	Mathematical Physics
31	Mathematical Structures for Engineers
32	Modernism: Literary Representation
33	Nano Technology
34	Natural Nano world: Design, Fundamentals and Mechanics
35	Non Linear Dynamics and Chaos
36	Numeric Linear Algebra
37	Numerical Analysis
38	Numerical Methods
39	Operation Research
40	Optimization
41	Organic Electronics and Opto Electronics: Material and Application
42	Organizational Behaviour
43	Pervasive Computing
44	Physics of Material
45	Physics of The Universe
46	Pragmatics in Social Media
47	Solid State Physics
48	Superconductivity: Basics and Applications
49	System Dynamics and Control
50	System Level Specifications and Design
51	The Self: Aspects and Implications