

**AVN**INSTITUTE OF
ENGINEERING & TECHNOLOGY
AN AUTONOMOUS INSTITUTION
AFFILIATED TO JNTUH**B.Tech - Electronics and Communication Engineering Course Structure****I B.Tech (I Sem)****Branch/Specialization: ECE**

S.No.	Course Code	Name of the Course	Contact Hours per Week			Credits
			L	T	P	
1	HS101	Matrices and Calculus	3	1	0	4
2	HS103	Applied Physics	3	1	0	4
3	HS107	English for skill Enhancement	2	0	0	2
4	ES106	Programming for Problem Solving*	2	0	4	4
5	HS104	Applied Physics Lab	0	0	3	1.5
6	HS108	English Language and Communication Skills Lab	0	0	2	1
7	ES113	Engineering Workshop Practice	0	0	3	1.5
8	MC101	Environmental Science	1	0	0	0
Total			11	2	12	18

L: Lecture Hour**T: Tutorial Hour****P: Lab/Practice Hour*****Integrated Course (Theory & Lab)****I B.Tech (II Sem)****Branch/Specialization: ECE**

S.No.	Course Code	Name of the Course	Contact Hours per Week			Credits
			L	T	P	
1	HS102	Multivariable and Vector Calculus	3	1	0	4
2	HS105	Engineering Chemistry	3	1	0	4
3	ES101	Basic Electrical Engineering	2	0	0	2
4	ES103	Electronic Devices and Circuits	2	0	0	2
5	ES107	Python Programming*	2	0	2	3
6	ES108	Computer Aided Engineering Graphics	1	0	4	3
7	HS106	Engineering Chemistry Lab	0	0	2	1
8	ES102	Basic Electrical Engineering Lab	0	0	2	1
9	ES104	Electronic Devices and Circuits Lab	0	0	2	1
10	MC102	Morals and Ethics	1	0	0	0
Total			14	2	12	21

L: Lecture Hour**T: Tutorial Hour****P: Lab/Practice Hour*****Integrated Course (Theory & Lab)**

II B.Tech (I Sem)
Branch/Specialization: ECE

S.No.	Course Code	Name of the Course	Contact Hours per Week			Credits
			L	T	P	
1	HS205	Complex Variables and Laplace , Fourier Transforms	3	1	0	4
2	EC201	Analog Circuits	3	0	0	3
3	EC203	Digital Logic Design	3	0	0	3
4	EC205	Signals and Systems	3	1	0	4
5	EC207	Network Analysis and Synthesis	3	0	0	3
6	EC202	Analog Circuits Lab	0	0	2	1
7	EC204	Digital Logic Design Lab	0	0	2	1
8	EC206	Basic Simulation Lab	0	0	2	1
9	HS206	Verbal Communication & Soft Skills Lab	0	0	2	1
10	MC201	Constitution of India	1	0	0	0
Total			16	2	8	21

L: Lecture Hour
T: Tutorial Hour
P: Lab/Practice Hour
II B.Tech (II Sem)
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S.No.	Course Code	Name of the Course	Contact Hours per Week			Credits
			L	T	P	
1	EC208	Probability Theory and Stochastic Processes	3	0	0	3
2	EC209	Electronic Circuit Analysis	3	0	0	3
3	EC211	Linear and Digital IC Applications	3	0	0	3
4	EC213	Analog and Digital Communications	3	0	0	3
5	EC215	Electromagnetic Fields and Transmission Lines	3	0	0	3
6	EC210	Electronic Circuit Analysis Lab	0	0	2	1
7	EC212	Linear and Digital IC Applications Lab	0	0	2	1
8	EC214	Analog and Digital Communications Lab	0	0	2	1
9	EC217	Real time / Field Based Research Project	0	0	4	2
10	MC202	Gender Sensitization Lab	0	0	2	0
Total			15	0	12	20

L: Lecture Hour
T: Tutorial Hour
P: Lab/Practice Hour

III B.Tech (I Sem)
Branch/Specialization: ECE

S.No.	Course Code	Name of the Course	Contact Hours per Week			Credits
			L	T	P	
1	EC301	Microprocessors & Microcontrollers	3	0	0	3
2	EC303	Data Communication & Network	3	0	0	3
3	EC305	Control Systems	3	0	0	3
4	HS207	Business Economics & Financial Analysis	3	0	0	3
5		Professional Elective – 1	3	0	0	3
	EC306	(a) Electronic Measurements & Instrumentation				
	CS220	(b) Computer Organization & Operating Systems				
	EC307	(c) Electronic Packaging				
	EC308	(d) Embedded System Design				
6		Open Elective – 1	3	0	0	3
		(See Annexure – A)				
7	EC302	Microprocessors & Microcontrollers Lab	0	0	2	1
8	EC304	Data Communication & Network Lab	0	0	2	1
9	HS301	Advanced English communication skills Lab	0	0	2	1
10	MC301	Intellectual property Rights	1	0	0	0
Total			19	0	6	21

L: Lecture Hour
T: Tutorial Hour
P: Lab/Practice Hour
III B.Tech (II Sem)
Branch/Specialization: ECE

S.No.	Course Code	Name of the Course	Contact Hours per Week			Credits
			L	T	P	
1	EC309	Digital Signal Processing	3	0	0	3
2	EC311	CMOS VLSI Design	3	0	0	3
3	EC313	Antennas and Wave Propagation	3	0	0	3
4		Open Elective – 2	3	0	0	3
		(See Annexure – A)				
5		Professional Elective – 2	3	0	0	3
	EC315	(a) Digital Image Processing				
	EC316	(b) Mobile communications and Networks				
	EC317	(c)) Hardware-Software Co-Design				
	EC318	(d) Nano Electronics				
6	EC310	Digital signal processing lab	0	0	2	1
7	EC312	CMOS VLSI Design Lab	0	0	2	1
8	EC314	Advanced Communication Lab	0	0	2	1
9	EC319	Industry Oriented Mini Project / Internship	0	0	4	2
Total			15	0	10	20

L: Lecture Hour
T: Tutorial Hour
P: Lab/Practice Hour

IV B.Tech (I Sem)
Branch/Specialization: ECE

S.No.	Course Code	Name of the Course	Contact Hours per Week			Credits
			L	T	P	
1	EC401	Microwave & Optical Communications	3	0	0	3
2	EC403	IoT Architectures and Protocols	3	0	0	3
3		Open Elective – 3 (See Annexure – A)	3	0	0	3
4		Professional Elective – 3	3	0	0	3
	EC405	(a) Radar Systems				
	EC406	(b) CMOS Analog IC Design				
	EC407	(c) Artificial Neural Networks				
	EC408	(d) 5G Communication & MIMO				
5		Professional Elective – 4	3	0	0	3
	EC409	(a) Network security and cryptography				
	EC410	(b) Satellite Communications				
	EC411	(c) Bio medical Instrumentation				
	EC412	(d) FPGA based system design				
6	EC402	Microwave & Optical Communications Lab	0	0	2	1
7	EC404	IoT Architectures and Protocols Lab	0	0	2	1
8	EC413	Project Work Stage I	0	0	6	3
Total			15	0	10	20

L: Lecture Hour
T: Tutorial Hour
P: Lab/Practice Hour
IV B.Tech (II Sem)
Branch/Specialization: ECE

S.No.	Course Code	Name of the Course	Contact Hours per Week			Credits
			L	T	P	
1	EC414	MOOCS :(Any subject which is not 70% same of previous subjects syllabus)	2	0	0	2
2		Professional Elective – 5	3	0	0	3
	EC415	(a) 5G and beyond Communication				
	CS308	(b) Artificial Intelligence				
	CS315	(c) Machine Learning				
	EC416	(d) Test & Testability				
3		Professional Elective – 6	3	0	0	3
	EC417	(a) System on Chip Architecture				
	EC418	(b) Wireless sensor Networks				
	EC419	(c) Multimedia Database Management Systems				
	EC420	(d) Low Power VLSI				
4	EC421	Project Work Stage-II and Seminar	0	0	22	11
Total			8	0	22	19

L: Lecture Hour
T: Tutorial Hour
P: Lab/Practice Hour