<u>4 year B. Tech. Degree Course – Electronics and Computer Engineering w.e.f.</u> <u>2024-25 Batch</u>

Sr.		Course	Course	C	Cont	act	Hours	Credits
No.			Categor					
			У					
	No	Title		Ι	L T P		Р	
					Total			
1.	15B11MA111	Mathematics-1	BSC	3	1	0	4	4
2.	15B11PH111	Physics-1	BSC	3	1	0	4	4
3.	15B11CI111	Software Development	ESC	3	1	0	4	4
		Fundamentals-1						
4.	15B11HS112	English	HSC	1	0	2	3	2
5.	15B17PH171	Physics Lab-1	BSC	0	0	2	2	1
6.	24B15CS111	Software Development	ESC	0	0	2	2	1
		Fundamentals Lab-1						
7.	18B15GE112	Workshop	ESC	0	0	3	3	1.5
8.	24B11EC111	Basic Electronics	ESC	3	1	0	4	4
9.	24B15EC111	Basic Electronics Lab	ESC	0	0	2	2	1
		TOTAL					28	22.5

FIRST SEMESTER

SECOND SEMESTER

Sr.		Course	Course	Co	ntac	t H	ours	Credits
No.			Categor					
			У					
	No.	Title			L	Т	Р	
					To	otal		
1.	15B11MA211	Mathematics-2	BSC	3	1	0	4	4
2.	15B11PH211	Physics-2	BSC	3	1	0	4	4
3	15B11CI211	Software Development	ESC	3	1	0	4	4
		Fundamentals -2						
4.	15B17PH271	Physics Lab-2	BSC	0	0	2	2	1
5.	24B15CS121	Software Development	ESC	0	0	2	2	1
		Fundamentals Lab- 2						
6.	24B16HS111	Life Skills & Professional	HSC	0	0	2	2	Qualifying
		Communication Lab						
7.	18B15GE111	Engineering Drawing & Design	ESC	0	0	3	3	1.5
8.	15B11HS111	Universal Human Values (UHV)	HSC	2	1	0	3	3
		TOTAL					24	18.5

THIRD SEMESTER

S.		Course	Course	(Conta	ct Ho	urs	Credits
No.			Category		1			
	Course Code	Course Title		L	Т	Р	Total	
1.	15B11MA301	Probability and Random	BSC	3	1	-	4	4
		Processes						
2.	15B11CI518	Data Structures and Algorithms	PCC	3	1	-	4	4
3.	24B11EC211	Electronic Devices and Circuits	PCC	3	1	-	4	4
4.	18B11EC215	Digital Circuit Design	PCC	3	1	-	4	4
5.	15B11GE301	Environmental Science	OMC	3	-	-	3	Qualifying
6.	15B17CI578	Data Structures and Algorithms	PCC	-	-	2	2	1
		Lab						
7.	24B15EC211	Electronic Devices and Circuits	PCC	-	-	2	2	1
		Lab						
8.	18B15EC215	Digital Circuit Design Lab	PCC	-	-	2	2	1
9.	15B11HS211	Economics	HSC	2	1	-	3	3
10.	24B17EC211	Summer Training-I (4 weeks)	PRC	-	-	-	-	2
		TOTAL					28	24

FOURTH SEMESTER

S.		Course	Course	C	onta	ct Ho	ours	Credits
No.			Category					
	Course Code	Course Title		L	Т	Р	Total	
1.	XXXXXX	HSS Elective – 1	HSC	2	1	-	3	3
2.	15B11EC411	Analogue Electronics	PCC	3	1	-	4	4
3.	18B11EC214	Signals and Systems	PCC	3	1	-	4	4
4.	24B41EC211	Introduction of Database	PCC	3	1	-	4	4
		Management System						
5.	24B41EC312	Computer Architecture and	PCC	3	1	-	3	3
		Organization						
6.	15B17EC471	Analogue Electronics Lab	PCC	-	-	2	2	1
7	18B15EC214	Signals and Systems Lab	PCC	-	-	2	2	1
8	24B45EC211	Introduction of Database	PCC	-	-	2	2	1
		Management System Lab						
9	XXXXXX	Discipline Elective -1*	PEC	3/2	-	0/2	3/4	3
		TOTAL					27/28	24

* Discipline electives may run in 3 0 0 or 2 0 2 (L T P) mode as per requirement of subject

FIFTH SEMESTER

S.		Course	Course	С	onta	ct Ho	ours	Credits
No.			Category					
	Course Code	Course Title		L	Т	P	Total	
1.	24B41EC311	Operating System Concepts	PCC	3	1	-	4	4
2.	18B11EC212	Analog and Digital Communication	PCC	3	1	-	4	4
3.	24B45EC311	Operating System Concepts Lab	PCC	-	-	2	2	1
4.	18B15EC212	Analog and Digital Communication	PCC	-	-	2	2	1
		Lab						
5.	XXXXXX	Discipline Elective -2^*	PEC	3/2	0	0/2	3/4	3/2
6	XXXXXX	Discipline Elective – 3*	PEC	3/2	0	0/2	3/4	3/2
7.	XXXXXX	Science Elective	BSC	3		-	3	3
8.	18B12HS311	Indian Constitution & Traditional	OMC	3	-	-	3	Qualify
		Knowledge						ing
9.	24B17EC311	Summer Training-II (6 weeks)	PRC	-	-	-	-	2
		TOTAL					24/26	21

SIXTH SEMESTER

S.		Course	Course	C	ont	act I	Hours	Credits
No.			Category					
	Course Code	Course Title		L	Т	Р	Total	
1.	24B41EC314	Embedded Systems and	PCC	3	-	-	3	3
		Microprocessors						
2.	24B41EC313	Fundamentals of Algorithm and Problem Solving	PCC	3		-	3	3
2	24D41DG215		DCC	2			2	2
3.	24B41EC315	Learning	PCC	3		-	3	3
4.	XXXXXX	Discipline Elective – 4*	PEC	3/2	0	0/2	3/4	3
5.	XXXXXX	Discipline Elective -5*	PEC	3/2	0	0/2	3/4	3
6.	XXXXXX	Open Elective - 1	OEC	2			2	2
7.	XXXXXX	Selected Value-Added Course	Value added	2			2	Audit
8.	24B45EC314	Embedded Systems and	PCC	-	-	2	2	1
		Microprocessors Lab						
9.	24B45EC313	Fundamentals of Algorithm and	PCC	-	-	2	2	1
		Problem Solving Lab						
10.	24B15HS311	Soft Skill For Employability	HSC	-	-	2	2	1
11.	24B17EC312	Minor Project	PRC	-	-	4	4	2
		TOTAL					28/30	22

SEVENTH SEMESTER

S.		Course	Course Category	(Cont	act I	Hours	Credits
No.	Course Code	Course Title		L	Т	Р	Total	
1.	XXXXXX	Discipline Elective –6*	PEC	3/2	0	0/2	3/4	3
2.	XXXXXX	Open Elective - 2	OEC	3	-	-	3	3
3.	15B19EC791	Major Project Part-1	PRC	-	-		8	4
4.	24B17EC411	Summer Training-III (6	PRC	-	-	-	-	4
		weeks)						
		TOTAL					14/15	14

EIGHTH SEMESTER

S.		Course	Course Category	(Cont	tact H	ours	Credits
No.	Course Code	Course Title		L	Т	Р	Total	
1.	XXXXXX	Discipline Elective -7*	PEC	3/2	0	0/2	3/4	3
2.	XXXXXX	Open Elective -3	OEC	3	1	-	3	3
3.	24B17EC412	Major Project Part-2	PRC	-	1	16	16	8
		TOTAL					22/23	14

Total Credits for B. Tech. -160

Mandatory Internships/Summer Trainings

Summer Training -I (4 weeks) (In summer vacation after second semester)

S.		Course	Co	onta	Credit		
No.	Course	Course Title			Р	Tot	S
	Code	Course Title				al	
1.	24B17EC	Inter/Intra institutional activites	0		6	6	2
	211	(Training with higher Institutions; Soft skill training					
		organized by Training and Placement Cell of the					
		respective institutions; contribution at incubation/					
		innovation /entrepreneurship cell of the institute;					
		participation in conferences/ workshops/ competitions					
		etc.; Learning at Departmental Lab/ Tinkering Lab/					
		Institutional workshop; Working for consultancy/					
		research project within the institutes and Participation in					
		all the activities of Institute's Innovation Council for eg:					
		IPR workshop/Leadership Talks/ Idea/ Design/					
		Innovation/ Business Completion/ Technical Expos etc.)					
		TOTAL				6	2

Summer Training -II (6 weeks) (In summer vacation after fourth semester)

S.		Course					Credi
No.	Course Code	Course Code Course Title		Т	Р	Tot	ts
	Course Coue	Course The				al	
1.	24B17EC311	Industrial/Govt./ NGO/MSME/ Rural Internship/	0		6	6	2
		Innovation /Entrepreneurship					
		(Students may choose either to work on					
		innovation or entrepreneurial activities resulting					
		in start-up or undergo internship with industry/					
		NGO's/ Government organizations/ Micro/					
		Small/ Medium enterprises to make themselves					
		ready for the industry. In case student want to					
		pursue their family business and don't want to					
		undergo internship, a declaration by a parent may					
		be submitted directly to the TPO.)					
		TOTAL				6	2

Summer Training -III (6 weeks) (In summer vacation after sixth semester)

S.		Course					Credi
No.	Course Code	sa Cada Course Title				Tot	ts
	Course Code	Course The				al	
1.	24B17EC411	Industrial/Govt./ NGO/MSME/ Rural Internship/	0		8	8	4
		Innovation /Entrepreneurship					
		(Students may choose either to work on					
		innovation or entrepreneurial activities resulting					
		in start-up or undergo internship with industry/					
		NGO's/ Government organizations/ Micro/ Small/					
		Medium enterprises to make themselves ready for					
		the industry. In case student want to pursue their					
		family business and don't want to undergo					
		internship, a declaration by a parent may be					
		submitted directly to the TPO.)					
		TOTAL				8	4

List of Electives

Discipline Elective – 1*

- Computer Network
- Internet of Things (IoT)
- Introduction to Deep Learning
- Digital Hardware Design
- Mobile Communication
- Network Analysis and Synthesis
- Information Theory and Application

Discipline Elective – 2*

- Electromagnetic Theory
- Digital Signal Processing
- Hardware Description Languages: VHDL and Verilog

Discipline Elective – 3*

- Java Programming
- Neural Networks and Fuzzy Logic
- Sensor Technology & Android Programming
- Introduction to Blockchain Technology
- Ethical Hacking & Prevention

Discipline Elective – 4*

- Computer Vision
- Digital Image processing
- Wireless Sensor Networks
- RF and Microwave
- Control Systems
- Information Theory & Coding
- Machine Learning and Natural Language Processing

Discipline Elective – 5*

- Cloud Computing
- Machine learning and Statistical pattern recognition
- Modelling and Simulation of Semiconductor Devices
- Network & Cyber Security
- Web Technology and Cyber Security
- Soft Computing Paradigms
- Big Data with Hadoop and Spark

Discipline Elective – 6*

- Introduction to FPGAs
- Fundamentals of Embedded Systems
- MIMO OFDM Applications to Wireless Communication
- Convergence and Next Generation Networks
- Computer Graphics
- Essentials of VLSI Testing
- Automation and Robotics

- System Simulation and Modelling
- Ethical Hacking & Prevention

Discipline Elective – 7*

- Introduction to Blockchain Technology
- Adaptive Systems and Signal Processing
- Satellite and Optical Communication
- Wavelets and Application
- AI for Healthcare & smart Systems
- Next Generation Telecom Networks
- Wireless Communication and Computing
- Basic of Antenna and Wave propagation