

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

FIRST SEMESTER

Sr. No.	Course		Course Category	Contact Hours				Credits
	No.	Title		L	T	P	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 Fundamentals-1	ESC	3	1	0	4	4
4.	15B11HS112	English	HSC	1	0	2	3	2
5.	15B17PH171	Physics Lab-1	BSC	0	0	2	2	1
6.	24B15CS111	Software Development Fundamentals Lab-1	ESC	0	0	2	2	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

SECOND SEMESTER

Sr. No.	Course		Course Category	Contact Hours				Credits
	No.	Title		L	T	P	Total	
1.	15B11MA211	Mathematics-2	BSC	3	1	0	4	4
2.	15B11PH211	Physics-2	BSC	3	1	0	4	4
3	15B11CI211	Software Development Fundamentals -2	ESC	3	1	0	4	4
4.	15B17PH271	Physics Lab-2	BSC	0	0	2	2	1
5.	24B15CS121	Software Development Fundamentals Lab- 2	ESC	0	0	2	2	1
6.	24B16HS111	Life Skills & Professional Communication Lab	HSC	0	0	2	2	Qualifying
7.	18B15GE111	Engineering Drawing &Design	ESC	0	0	3	3	1.5
8.	24B11HS111	Universal Human Values (UHV)	HSC	2	1	0	3	3
		TOTAL					24	18.5

THIRD SEMESTER

S. No.	Course		Course Category	Contact Hours				Credits
	Course Code	Course Title		L	T	P	Total	
1.	15B11MA301	Probability and Random Processes	BSC	3	1	-	4	4
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 Lab	PCC	-	-	2	2	1
7.	24B15EC211	Electronic Devices and Circuits Lab	PCC	-	-	2	2	1
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. No.	Course		Course Category	Contact Hours				Credits
	Course Code	Course Title		L	T	P	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 Management System	PCC	3	1	-	4	4
5.	24B41EC312	Computer Architecture and Organization	PCC	3	-	-	3	3
6.	15B17EC471	Analogue Electronics Lab	PCC	-	-	2	2	1
7.	18B15EC214	Signals and Systems Lab	PCC	-	-	2	2	1
8.	24B45EC211	Introduction of Database Management System Lab	PCC	-	-	2	2	1
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. No.	Course		Course Category	Contact Hours				Credits
	Course Code	Course Title		L	T	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 Lab	PCC	-	-	2	2	1
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 Knowledge	OMC	3	-	-	3	Qualifying
9.	24B17EC311	Summer Training-II (6 weeks)	PRC	-	-	-	-	2
		TOTAL					24/26	21

SIXTH SEMESTER

S. No.	Course		Course Category	Contact Hours				Credits
	Course Code	Course Title		L	T	P	Total	
1.	24B41EC314	Embedded Systems and Microprocessors	PCC	3	-	-	3	3
2.	24B41EC313	Fundamentals of Algorithm and Problem Solving	PCC	3		-	3	3
3.	24B41EC315	Artificial Intelligence and Machine 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 Microprocessors Lab	PCC	-	-	2	2	1
9.	24B45EC313	Fundamentals of Algorithm and Problem Solving Lab	PCC	-	-	2	2	1
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. No.	Course		Course Category	Contact Hours				Credits
	Course Code	Course Title		L	T	P	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 weeks)	PRC	-	-	-	-	4
		TOTAL					14/15	14

EIGHTH SEMESTER

S. No.	Course		Course Category	Contact Hours				Credits
	Course Code	Course Title		L	T	P	Total	
1.	XXXXXX	Discipline Elective -7*	PEC	3/2	0	0/2	3/4	3
2.	XXXXXX	Open Elective -3	OEC	3	-	-	3	3
3.	24B17EC412	Major Project Part-2	PRC	-	-	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. No.	Course		Contact Hours				Credits
	Course Code	Course Title	L	T	P	Total	
1.	24B17EC211	Inter/Intra institutional activities (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.)	0		6	6	2
		TOTAL				6	2

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

S. No.	Course		Contact Hours				Credits
	Course Code	Course Title	L	T	P	Total	
1.	24B17EC311	Industrial/Govt./ NGO/MSME/ Rural Internship/ 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.)	0		6	6	2
		TOTAL				6	2

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

S. No.	Course		Contact Hours				Credits
	Course Code	Course Title	L	T	P	Total	
1.	24B17EC411	Industrial/Govt./ NGO/MSME/ Rural Internship/ 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.)	0		8	8	4
		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