

JAYPEE UNIVERSITY OF ENGINEERING AND TECHNOLOGY

Revised Curriculum for B. Tech. (Electronics and Communication Engineering)
(For Batch 2025-29 onwards)

FIRST SEMESTER

S. No.	Course Code	Dept.	Title of Course	Contact Hours				Credits
				L	T	P	Total	
1.	MA101	MATH	Engineering Mathematics	3	1	0	4	4
2.	PH101	PHY	Physics-1	3	1	0	4	4
3.	HS101	HSS	English	2	0	2	3	3
4.	CS101	CSE	Computer Programming	3	1	0	4	4
5.	PH201	PHY	Physics Lab-1	0	0	2	2	1
6.	CS201	CSE	Computer Programming Lab	0	0	4	4	2
7.	ME201	MEC	Workshop	0	0	3	3	1.5
8.	HS001	HSS	Value Added Course (Human Values and Professional Ethics)	2	0	0	2	2 (Audit Qualifying)
TOTAL								26
								19.5

SECOND SEMESTER

S. No.	Course Code	Dept.	Title of Course	Contact Hours				Credits
				L	T	P	Total	
1.	HS104	HSS	Life Skills and Effective Communication	1	0	2	3	2
2.	MA105	MATH	Discrete Mathematics	3	1	0	4	4
3.	PH102	PHY	Physics-2	3	1	0	4	4
4.	EC101	ECE	Electrical Science	3	1	0	4	4
5.	CS102	CSE	Object Oriented Programming	3	1	0	4	4
6.	PH202	PHY	Physics Lab-2	0	0	2	2	1
7.	EC203	ECE	Electrical Science Lab	0	0	2	2	1
8.	CS202	CSE	Object Oriented Programming lab	0	0	2	2	1
9.	ME203	MEC	Engineering Drawing & Design Lab			3	3	1.5
10.			Value Added Course	2	0	0	2	2 (Audit)
TOTAL								28
								22.5

*EC102- Electrical Circuit Analysis (CE/CHE/ME), EC202- Electrical Circuit Analysis Lab (CE/CHE/ME)

THIRD SEMESTER

S. No.	Course Code	Dept.	Title of Course	Contact Hours				Credits
				L	T	P	Total	
1.	HS103	HSS	Techniques for Decision Making	2	1	0	3	3
2.	CS113	CSE	Data Structures and Algorithms	3	0	0	3	3
3.	EC107	ECE	Signals & Systems	3	1	0	4	4
4.	EC108	ECE	Analog Electronics	3	1	0	4	4
5.	EC109	ECE	Measurement & Instrumentation	3	0	0	3	3
6.	GE101	GE	Value Added Course Environmental Science	2	-	-	2	2(Audit) Qualifying
7.	CS213	CSE	Data Structures and Algorithms Lab	0	0	2	2	1
8.	EC207	ECE	Signals & Systems Lab	0	0	2	2	1
9.	EC208	ECE	Analogue Electronics Lab	0	0	2	2	1
10.	EC209	ECE	Measurement & Instrumentation Lab	0	0	2	2	1
11.		HSS	Value Added Course	0	0	2	2	2(Audit)
12.		CSE	Value Added Course	0	0	2	2	2(Audit)
13.		ECE	Internship/Summer Training (4 weeks - 160-180 hours)	-	-	-	-	4 (Audit, Optional)
			TOTAL				31	21

* EC110: Digital Systems and Microprocessors (CSE), EC210: Digital Systems and Microprocessors Lab (CSE)

FOURTH SEMESTER

S. No.	Course Code	Dept.	Title of Course	Contact Hours				Credits
				L	T	P	Total	
1.		HSS	HSS Elective – 1	3	0	0	3	3
2.	EC111	ECE	Digital Circuit Design	3	0	0	3	3
3.	EC112	ECE	Analog and Digital Communication	3	1	0	4	4
4.	EC113	ECE	Electromagnetic Field Theory	3	1	0	4	4
5.	EC114	ECE	Control System	3	1	0	4	4
6.	EC211	ECE	Digital Circuit Design Lab	0	0	2	2	1
7.	EC212	ECE	Analog and Digital Communication Lab	0	0	2	2	1
8.	EC213	ECE	Hardware Lab	0	0	2	2	1
			TOTAL				24	21

Students will undergo 4 weeks Industrial Training during Summer Vacation after 4th Semester.

FIFTH SEMESTER

S. No.	Course Code	Dept.	Title of Course	Contact Hours				Credits
				L	T	P	Total	
1.		HSS	HSS Elective-2	2	1	0	3	3
2.	MA106	MATH	Probability and Random Processes	3	1	0	4	4
3.		ECE	Discipline Elective -1	3	0	0	3	3
4.			Science Elective	3	0	0	3	3
5.	EC111	ECE	Microprocessor and Interfacing	3	0	0	3	3
6.	EC112	ECE	Digital Signal Processing	3	0	0	3	3
7.	EC210	ECE	Microprocessor and Interfacing Lab	0	0	2	2	1
8.	EC211	ECE	Digital Signal Processing Lab	0	0	2	2	1
9.	EC212	ECE	Minor Project – 1	0	0	4	4	2
10.		ECE	Internship/Summer Training (4 weeks - 160-180 hours)	-	-	-	-	4 (Audit) Qualifying
			TOTAL				27	23

SIXTH SEMESTER

S. No.	Course Code	Dept.	Title of Course	Contact Hours				Credits
				L	T	P	Total	
1.		HSS	HSS Elective-3	3	0	0	3	3
2.	EC113	ECE	Telecommunication Networks	3	0	0	3	3
3.	EC114	ECE	VLSI Design	3	0	0	3	3
4.		ECE	Discipline Elective – 2	3	0	0	3	3
5.		ECE	Discipline Elective – 3	3	0	0	3	3
6.	EC213	ECE	Telecommunication Networks Lab	0	0	2	2	1
7.	EC214	ECE	VLSI Design Lab	0	0	2	2	1
8.	EC215	ECE	Communication Lab-I	0	0	2	2	1
9.	EC216	ECE	Minor Project-2	0	0	4	4	2
10.	HS004	HSS	Value Added Course (Indian Constitution and Traditional Knowledge)	2	0	0	2	2 (Audit) Qualifying
			TOTAL				27	20

1. All students will undergo Value Added Course; however it will not count for CGPA calculations and will not be reflected in transcript of those students who fail to qualify.
2. Students will undergo 6 weeks Industrial Training during Summer Vacation after 6th Semester.

SEVENTH SEMESTER

S. No.	Course Code	Dept.	Title of Course	Contact Hours				Credits
				L	T	P	Total	
1.		All Branches	Open Elective – 1	3	0	0	3	3
2.		ECE	Discipline Elective – 4	3	0	0	3	3
3.		ECE	Discipline Elective– 5	3	0	0	3	3
4.		ECE	Discipline Elective – 6	3	0	0	3	3
5.	EC217	ECE	Major Project Part-I	0	0	8	8	4
6.		ECE	Internship/Summer Training (6 weeks - 240-270 hours)	-	-	-	-	6 (Audit) Qualifying
7.		HSS	Value Added Course	2	-	-	2	2(Audit)
			TOTAL				22	16

EIGHTH SEMESTER

S. No.	Course Code	Dept.	Title of Course	Contact Hours				Credits
				L	T	P	Total	
1.		Engg. Branch	Open Elective – 2	3	0	0	3	3
2.		ECE	Discipline Elective– 7	3	0	0	3	3
3.		ECE	Discipline Elective – 8	3	0	0	3	3
4.	EC218	ECE	Major Project Part-II	0	0	16	16	8
			TOTAL				25	17

Total Credits for B. Tech. –160. (Value Added Courses (Audit courses) will not count for CGPA calculations.)

S. No.	Discipline Elective	
	Course Code	Course Title
1.	EC303	Network Synthesis
2.	EC304	Microwave and Radar System
3.	EC305	Electronic Testing
4.	EC306	Embedded Systems
5.	EC307	Digital Hardware Design
6.	EC309	Optical Communication
7.	EC310	DSP Processors
8.	EC311	Internet Based Automation
9.	EC312	Linear VLSI IC Design
10.	EC313	Multi-rate Signal Processing and Filter Banks
11.	EC314	Information Theory and Coding
12.	EC315	Advance Control System
13.	EC316	Neural Network
14.	EC317	Mobile Communication
15.	EC318	Statistical Signal Processing
16.	EC319	Image and Video Processing
17.	EC320	Spread Spectrum Communication
18.	EC321	Speech Signal Processing
19.	EC322	Wireless Sensor Networks
20.	EC323	Satellite Communication
21.	EC324	Biomedical Signal Processing
22.	EC325	MIMO Systems
23.	EC326	Instrumentation Engineering for Smart Cities
24.	EC327	FPGA based System Design
25.	EC328	Data Compression
26.	EC329	Antenna and Wave Propagation

S. No.	Discipline Elective (VLSI Design Micro-specialization)	
	Course Code	Course Title
1.	EC307	Digital Hardware Design
2.	EC330	FPGA Based System Design
3.		IC Technology
4.		VLSI Verification and Testing

S. No.	Discipline Elective (Advance Communication Technologies Micro-specialization)	
	Course Code	Course Title
1.		Emerging Technologies- Beyond 5 G
2.		Machine Learning for Communication Systems
3.		Green Communication Technologies
4.		Data Analytics for 5 G

S. No.	Discipline Elective (IOT with Machine Learning Micro-specialization)	
	Course Code	Course Title
1.	EC308	Internet of Things
2.	CSE	Machine Learning
3.		Artificial Intelligence of Things
4.		Industrial IoT

S. No.	Science Elective	
	Course Code	Course Title
1.	EC301	Power Science
2.	EC302	Science of Semiconductors
3.	PH302	Nano Science
4.	PH303	Material Science and Applications
5.	CH303	Biochemistry
6.	PH301	Introduction to Quantum Computing

S. No.	Open Elective -1	
	Course Code	Course Title
1.	EC330	Sensors and Transducers
2.	EC331	Introduction to Microprocessors and Micro-controllers
	Open Elective -2	
	Course Code	Course Title
1.	EC332	Introduction to Neural Network
2.	EC333	Introduction to Robotics

S. No.	Value Added Courses	
	Course Code	Course Title
1.	HS001	Value Added Course-1 (Human Values and Professional Ethics)
2.	HS007	Value Added Course-2 (Career Management and Development)
3.	CS002	Value Added Course-3 (Programming in Python)
4.	HS004	Value Added Course-4 (Indian Constitution and Traditional Knowledge)
5.	HSS	Value Added Course-5 (Choice based)
	24B19HS791	Legal and Ethical Issues in Business
	24B19HS792	Introduction to Financial Markets
	24B19HS793	Academic Research and Paper Writing
6.	EC001	Fundamentals of Electronic Devices

Minor Specializations

S. No.	Minor Specialization Offered by ECE dept.	Credits	
1	Embedded System	20	
2	Internet of Robotics Things	20	

Minor Specialization-1: Embedded System

S. No.	Course Code	Dept.	Title of Course	Contact Hours				Credits	Sem.
				L	T	P	Total		
1.	EC333	ECE	Electronic Circuit Design	3	0	0	3	3	III
2.	EC334	ECE	Transducers Engineering	3	0	0	3	3	IV
3.	EC401	ECE	Transducers Engineering Lab	0	0	2	2	1	IV
4.	EC335	ECE	Digital Control System	3	0	0	3	3	V
5.	EC336	ECE	Microcontroller and Embedded System	3	0	0	3	3	VI
6.	EC402	ECE	Microcontroller and Embedded System lab	0	0	2	2	1	VI
7.	EC337	ECE	Embedded Control System	3	0	0	3	3	VII/V III
8.	EC338	ECE	Real Time Embedded System Design	3	0	0	3	3	VII/V III
			Total				22	20	

Minor Specialization-2 offered by ECE dept. with CSE dept. : Internet of Robotics Things for ECE and CSE students)

S. No.	Course Code	Dept.	Title of Course	Contact Hours				Credits	Sem.
				L	T	P	Total		
1.	EC105/ EC335	ECE	Measurement & Instrumentation (for CSE)/ Digital Control System (for ECE)	3	0	0	3	3	V
2.	EC338	ECE	Sensors, Actuators & Signal Processing	3	0	0	3	3	IV
3.	18B11CI916	CSE	Statistical Methods and Data Analysis	3	0	0	3	3	III
4.	18B17CI976	CSE	Statistical Methods and Data Analysis Lab	0	0	2	2	1	III
5.	EC339	ECE/ CSE	Robotics & Machine Vision	3	0	0	3	3	VII/V III
6.	EC403	ECE	Robotics Programming Lab	0		2	2	1	VII/V III
7.	18B17CI997	CSE	Internet of Things Lab	0	0	2	2	1	VII/V III
8.	18B11CI937	CSE	Internet of Things Technology and Applications	2	0	0	2	2	VII/V III
9.	18B11CI918	CSE	Machine Learning	3	0	0	3	3	VI
			Total				23	20	

*Students of ECE will be registered in course of 'Introduction to Artificial Intelligence' as prerequisite of 'Artificial Intelligence and Applications'.

Minor Specialization offered by Mechanical Engg. dept. with ECE dept. (for ECE and MEC students):

Industrial Automation

S. No.	Course Code	Dept.	Title of Course	Contact Hours				Credits	Sem.
				L	T	P	Total		
1	EC334	ECE	Transducers Engineering	3	0	0	3	3	IV
2	EC401	ECE	Transducers Engineering Lab	0	0	2	2	1	IV
3	18B11ME91 1	MEC	Robotics	3	0	0	3	3	V
4	EC335/ EC340	ECE	Digital Control System (for ECE students) /Microprocessors based Control System (For MEC students)	3	0	0	3	3	V
5	18B17ME97 1	MEC	Robotics/CIM Lab	0	0	2	2	1	V
6	18B11ME91 3	MEC	Industrial Automation	3	0	0	3	3	VI
7	18B11ME91 4	MEC	Control of Industrial Automation	3	0	0	3	3	VI
8	18B11ME91 2	MEC	Special Purpose Vehicle	3	0	0	3	3	VII
			Total				22	20	

Minor Specialization offered by Mechanical Engg. dept. with ECE dept. (for ECE and MEC students):

Mechatronics

S. No.	Course Code	Dept.	Title of Course	Contact Hours				Credits	Sem.
				L	T	P	Total		
1	EC334	ECE	Transducers Engineering	3	0	0	3	3	IV
2	EC401	ECE	Transducers Engineering Lab	0	0	2	2	1	IV
3	18B11ME91 7	MEC	Vehicle Dynamics	3	0	0	3	3	V
4	18B11ME91 5	MEC	Computer Integrated Manufacturing	3	0	0	3	3	V
5	18B17ME97 5	MEC	CIM Lab	0	0	2	2	1	V
6	18B11ME91 8	MEC	Control of Mechanical System	3	0	0	3	3	VI
7	EC335	ECE	Micro-controller and Embedded System	3	0	0	3	3	VI
8	18B11ME91 6	MEC	Automated Guided Vehicles	3	0	0	3	3	VII
			Total				22	20	

Minor Specialization-1: Human Resource Management (offered by HSS dept.)								
S. No.	Course Code	Dept.	Title of Course	L	T	P	Contact Hours	Credits
1	18B11HS911	HSS	Human Resource Management	3	0	0	3	3
2	18B11HS912	HSS	Team Building and Leadership	3	0	0	3	3
3	18B11HS913	HSS	Performance Management	3	0	0	3	3
4	18B11HS914	HSS	Training & Development	3	0	0	3	3
5	18B11HS915	HSS	Organizational Change	3	0	0	3	3
6	18B11HS916	HSS	Negotiation & Counselling	3	0	0	3	3
7	18B17HS971	HSS	Minor Project	0	0	4	4	2
Total							22	20

Minor Specialization-2: Financial Management (offered by HSS dept.)								
S. No.	Course Code	Dept.	Title of Course	L	T	P	Contact Hours	Credits
1	18B11HS918	HSS	Fundamentals of Accounting	3	0	0	3	3
2	18B11HS919	HSS	Financial Management	3	0	0	3	3
3	18B11HS920	HSS	Financial Modelling	3	0	0	3	3
4	18B11HS921	HSS	Fundamentals of Financial Markets	3	0	0	3	3
5	18B11HS922	HSS	Security Analysis & Investment Management	3	0	0	3	3
6	18B11HS923	HSS	International Financial Management	3	0	0	3	3
7	18B17HS972	HSS	Minor Project	0	0	4	4	2
Total							22	20

Minor Specialization-3: Digital Marketing (offered by HSS dept.)								
S. No.	Course Code	Dept.	Title of Course	L	T	P	Contact Hours	Credits
1	18B11HS925	HSS	Consumer Behaviour	3	0	0	3	3
2	18B11HS926	HSS	Ethics, IPR and Cyber laws	3	0	0	3	3
3	18B11HS927	HSS	Digital Marketing research	3	0	0	3	3
4	18B11HS928	HSS	Introduction to Social Media Marketing	3	0	0	3	3
5	18B11HS929	HSS	Digital Marketing	3	0	0	3	3
6	18B11HS930	HSS	Digital Marketing Analytics	3	0	0	3	3
7	18B17HS973	HSS	Minor Project	0	0	4	4	2
Total							22	20

Minor Specialization-4: Marketing (offered by HSS dept.)								
S. No.	Course Code	Dept.	Title of Course	L	T	P	Contact Hours	Credits
1	18B11HS932	HSS	Consumer Behaviour	3	0	0	3	3
2	18B11HS933	HSS	Marketing Management	3	0	0	3	3
3	18B11HS934	HSS	Marketing Research	3	0	0	3	3
4	18B11HS935	HSS	Services Marketing	3	0	0	3	3
5	18B11HS936	HSS	Brand Management	3	0	0	3	3
6	18B11HS937	HSS	Sales and Distribution Management	3	0	0	3	3
7	18B17HS974	HSS	Minor Project	0	0	4	4	2
Total							22	20