

# JAYPEE UNIVERSITY OF ENGINEERING AND TECHNOLOGY

Curriculum for B. Tech. 4 Year Electronics Engineering (VLSI Design and Technology)

## 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 Practices	0	0	3	3	1.5
8.		HSS	Value Added Course-1	2	0	0	2	Qualifying
			<b>TOTAL</b>				<b>26</b>	<b>19.5</b>

## 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.	MA104	MATH	Discrete Mathematics	3	1	0	4	4
3.	PH102	PHY	Physics-1	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.	EC201	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
			<b>TOTAL</b>				<b>28</b>	<b>22.5</b>

## 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.	EC103	ECE	Signals & Systems	3	1	0	4	4
4.	EC104	ECE	Analog Electronics	3	1	0	4	4
5.	EC105	ECE	Measurement & Instrumentation	3	0	0	3	3
6.	GE101	GE	Environmental Science	2	0	0	2	Qualifying
7.	CS220	CSE	Data Structures and Algorithms Lab	0	0	2	2	1
8.	EC203	ECE	Signals & Systems Lab	0	0	2	2	1
9.	EC204	ECE	Analogue Electronics Lab	0	0	2	2	1
10.	EC205	ECE	Measurement & Instrumentation Lab	0	0	2	2	1
11.		HSS	Value Added Course-2	0	0	2	2	Qualifying
12.	CS002	CSE	Value Added Course-3	0	0	2	2	Qualifying
			<b>TOTAL</b>				<b>31</b>	<b>21</b>

## 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.	EC107	ECE	Digital Circuit Design	3	0	0	3	3
3.	EC108	ECE	Analog and Digital Communication	3	1	0	4	4
4.		ECE	Introduction to Micro-fabrication	3	0	0	3	3
5.	EC110	ECE	Control Systems	3	1	0	4	4
6.	EC207	ECE	Digital Circuit Design Lab	0	0	2	2	1
7.	EC208	ECE	Analog and Digital Communication Lab	0	0	2	2	1
8.		ECE	Introduction to Micro-fabrication Lab (Foundry familiarization workshop/MOOC Virtual lab)	0	0	2	2	1
9.	EC209	ECE	Hardware Lab	0	0	2	2	1
			<b>TOTAL</b>				<b>25</b>	<b>21</b>

Students will undergo 4 weeks Industrial Training during Summer Vacation after 4<sup>th</sup> 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	Semiconductor Devices and Materials	3	0	0	3	3
4.			Science Elective	3	0	0	3	3
6.	EC111	ECE	Microprocessor and Interfacing	3	0	0	3	3
7	EC112	ECE	Digital Signal Processing	3	0	0	3	3
9.	EC210	ECE	Microprocessor and Interfacing Lab	0	0	2	2	1
10.	EC211	ECE	Digital Signal Processing Lab	0	0	2	2	1
11.	EC212	ECE	Minor Project – 1	0	0	4	4	2
			<b>TOTAL</b>				<b>27</b>	<b>23</b>

## 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 – 1	3	0	0	3	3
5.		ECE	Discipline Elective – 2	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.		HSS	Value Added Course-4	2	0	0	2	Qualifying
			<b>TOTAL</b>				<b>27</b>	<b>20</b>

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 6weeks Industrial Training during Summer Vacation after 6<sup>th</sup> 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 – 3	3	0	0	3	3
3.		ECE	Discipline Elective– 4	3	0	0	3	3
4.		ECE	Discipline Elective – 5	3	0	0	3	3
5.	EC217	ECE	Major Project Part-I	0	0	8	8	4
6.	EC001	ECE	Summer Training Viva	0	0	0	0	Qualifying
7.		HSS	Value Added Course-5	2	0	0	2	Qualifying
			<b>TOTAL</b>				<b>22</b>	<b>16</b>

## 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– 6	3	0	0	3	3
3.		ECE	Discipline Elective – 7	3	0	0	3	3
4.	EC218	ECE	Major Project Part-II	0	0	16	16	8
			<b>TOTAL</b>				<b>25</b>	<b>17</b>

**Total Credits for B. Tech. –160**

### List of Discipline Electives

S. No.	Discipline Elective	
	Course Code	Course Title
1.		Digital Hardware Design
2.		Analog IC Design
3.		Essential of VLSI Testing
4.		Embedded Systems
5.		Modeling and Simulation of Semiconductor Devices
6.		Mixed signal design
7.		Bio Medical Electronics
8.		RF Electronics
9.		Low Power VLSI
10.		Nano Electronics
11.		CAD for VLSI
12.		Introduction to MEMS
13.		Neural Network
14.		Wireless Sensor Networks
15.		Internet Based Automation
16.		FPGA based System Design
17.		Image and Video Processing

S. No.	Science Elective	
	Course Code	Course Title
1.	EC301	Power Science
2.	EC302	Science of Semiconductors
3.	PH302	Nano-science
4.	CH303	Biochemistry

S. No.	Open Elective -1	
	Course Code	Course Title
1.	EC330	Sensors and Transducers
2.	EC331	Introduction to Microprocessors and Microcontrollers
	Open Elective -2	
	Course Code	Course Title
1.	EC332	Introduction to Neural Network
2.	EC341	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.	18B19HS599	Value Added Course-4 (Indian Constitution and Traditional Knowledge)
5.	HSS	Value Added Course-5 ( <b>Choice based</b> )
	24B19HS791	Legal and Ethical Issues in Business
	24B19HS792	Introduction to Financial Markets
	24B19HS793	Academic Research and Paper Writing