

# *B.Tech. (ECE) Course Scheme*

*Academic Year 2021-2022*



*Department of Electronics & Communication Engineering*

*School of Engineering and Technology*

*Central University of Rajasthan*

*NH-8 Jaipur- Ajmer Highway, Bandarsindri*

*Kishangarh -305817*

*District-Ajmer,*

*Rajasthan Website:*

*[www.curaj.ac.in](http://www.curaj.ac.in)*

## 4 Year B.Tech in Electronics and Communication Engineering

### Detailed Scheme

#### First Year

<b>SEMESTER I</b>						
<b>Sr. No</b>	<b>Course Code</b>	<b>Course Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
			<b>Hours/week</b>			
1	ECE 101	Engineering Mathematics-I	3	1	0	4
2	ECE 102	Engineering Physics	3	0	0	3
3	ECE 103	Basic Electrical Engineering	3	0	1	4
4	ECE 104	English (Language and Communication Writing Skills-I)	3	1	0	4
5	ECE 105	Engineering Graphics & Design	3	0	2	4
6	ECE 106	Engineering Physics Lab	0	0	2	1
<b>Total Credit</b>						<b>20</b>

<b>SEMESTER II</b>						
<b>Sr. No</b>	<b>Course Code</b>	<b>Course Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
			<b>Hours/week</b>			
1	ECE 107	Engineering Mathematics-II	3	1	0	4
2	ECE 108	Introduction to Programming	3	0	0	3
3	ECE 109	Basic Electronics Engineering	3	0	1	4
4	ECE 110	Universal Human Value (UHV)	3	1	0	4
5	ECE 111	Workshop Practice	1	0	4	4
6	ECE 112	Programming Lab	0	0	2	1
<b>Total Credit</b>						<b>20</b>

## Second Year

<b>SEMESTER III</b>						
<b>Sr. No</b>	<b>Course Code</b>	<b>Course Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
			<b>Hours/week</b>			
1	ECE201	Discrete mathematics	3	1	0	4
2	ECE202	Electronics devices and circuits	3	0	0	3
3	ECE203	Electronic Measurement and Instrumentation	3	0	0	3
4	ECE204	Circuit theory and Network Analysis	3	0	0	3
5	ECE205	Data structures & Algorithms	3	0	0	3
6	ECE206	Electronic devices and circuits Lab	0	0	3	2
7	ECE207	Electronic measurement and instrumentation Lab	0	0	3	2
8	ECE208	Data structure and algorithm Lab	0	0	3	2
<b>Total Credit</b>						<b>22</b>

<b>SEMESTER IV</b>						
<b>Sr. No</b>	<b>Course Code</b>	<b>Course Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
			<b>Hours/week</b>			
1	ECE209	Principles and Practices of management	3	0	0	3
2	ECE210	Electromagnetic wave and Transmission line	3	1	0	4
3	ECE211	Signal and System	3	0	0	3
4	ECE212	Analog and Linear Integrated Circuit	3	0	0	3
5	ECE213	Digital system design	3	0	0	3
6	ECE214	Signal and System Lab	0	0	3	2
7	ECE215	Analog and Linear Integrated Circuit Lab	0	0	3	2
8	ECE216	Digital system design Lab	0	0	3	2
<b>Total Credit</b>						<b>22</b>

### Third Year

<b>SEMESTER V</b>						
<b>Sr. No</b>	<b>Course Code</b>	<b>Course Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
			<b>Hours/week</b>			
1	ECE301	Environmental Studies	3	0	0	3
2	ECE302	Control System Engineering	3	0	0	3
3	ECE303	Analog Communication System	3	0	0	3
4	ECE304	Antenna and wave propagation	3	0	0	3
5	ECE305	Digital Communication and system	3	0	0	3
6	ECE306	Analog and Digital Communication Lab	0	0	3	2
7	ECE307	Antenna and wave propagation Lab	0	0	3	2
8	ECE308	Electronic Circuit Design workshop	0	0	3	2
<b>Total Credit</b>						<b>21</b>

<b>SEMESTER VI</b>						
<b>Sr. No</b>	<b>Course Code</b>	<b>Course Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
			<b>Hours/week</b>			
1	ECE309	Managerial Economics	3	0	0	3
2	ECE310	Optical Fiber Communication	3	0	0	3
3	ECE311	Power Electronics	3	0	0	3
4	ECE312	Microcontrollers and embedded system	3	0	0	3
5	ECE313	Microwave theory and techniques	3	0	0	3
6	ECE314	Microcontrollers and embedded system lab	0	0	3	2
7	ECE315	Microwave theory and techniques Lab	0	0	3	2
8	ECE316	Optical Fiber Communication Lab	0	0	3	2
<b>Total Credit</b>						<b>21</b>

- **Internship: One-month industrial training can be conducted at the end of VI Semester but evaluation will be done next semester.**

## Fourth Year

<b>SEMESTER VII</b>						
<b>Sr. No</b>	<b>Course Code</b>	<b>Course Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
			<b>Hours/week</b>			
1	ECE401	VLSI Design and Technology	3	0	0	3
2	ECE402	Digital Signal Processing	3	0	0	3
3	--	Program elective 1	3	0	0	3
4	--	Program elective 2	3	0	0	3
5	--	Open elective I	3	0	0	3
6	ECE403	VLSI Design and Technology Lab	0	0	3	2
7	ECE404	Digital Signal Processing Lab	0	0	3	2
8	ECE405	Project Stage-I	0	1	6	3
9	ECE406	Internship	0	0	0	2
<b>Total Credit</b>						<b>24</b>

<b>SEMESTER VIII</b>						
<b>Sr. No</b>	<b>Course Code</b>	<b>Course Name</b>	<b>L</b>	<b>T</b>	<b>P</b>	<b>Credits</b>
			<b>Hours/week</b>			
1	--	Program elective 3	3	0	0	3
2	--	Open Elective-II	3	0	0	3
3	--	Open Elective-III	3	0	0	3
4	ECE407	Project Stage-II	0	1	9	10
<b>Total Credit</b>						<b>19</b>

**Total Credit is: 20+20+22+22+21+21+24+19=169**

Program elective1: Mobile Communication and Network

Program elective 2: Computer Network

Program elective 3: Satellite Communication

Open Elective I: Biomedical Electronics

Open Elective II: Nanoelectronics

Open Elective III: Machine learning and AI

## List of electives/open electives

1. ECE501: Microprocessor theory applications
2. ECE502: Introduction to MEMS
3. ECE503: Electrical Machines
4. ECE504: Information Theory and Coding
5. ECE505: Speech and Audio Processing
6. ECE506: Electronic Device Modeling
7. ECE507: Problem solving using computer
8. ECE508: Embedded system and IOT
9. ECE509: Bio-Medical Electronics
10. ECE510: Computer Network
11. ECE511: Analog and Mixed signal RFIC design and Analysis
12. ECE512: Nano electronics
13. ECE513: Satellite communication
14. ECE514: Mobile Communications and network

## List of Lab for B.Tech (ECE) Program

### ● First Year

1. Basic Electrical Lab
2. Programming in C lab
3. Workshop practice lab

### ● Second Year

1. Electronic Devices and Circuits Lab
2. Electronic Measurement and instrumentation lab
3. Data structure and algorithm lab
4. Signal and system lab
5. Analog Electronics and linear IC lab
6. Digital system design lab

### ● Third year

1. Analog and digital communication lab
2. Antenna and wave propagation lab
3. Microcontroller and embedded lab
4. Microwave theory and techniques lab
5. Electronics Circuit design workshop

### ● Fourth year

1. VLSI design and technology lab
2. Digital signal processing lab
3. Internship
4. Project Stage-I
5. Project Stage-II