Curriculum for Undergraduate Degree
B.Tech. in Electronics and Communications Engineering
(w.e.f. AY: 2025-26)

Part I: Introduction, Theme &Category wise Credit Distribution

A. Definition of Credit:

Sl. No.	Description	Credit
1	1 Hr. Lecture (L) Per Week	1
2	1Hr. Tutorial (T) Per Week	1
3	1Hr.Practical/ Lab(P)Per Week	0.5
4	2Hrs. Practical/ Lab(P)Per Week	1

B. Range of Credits:

As per AICTE, a student covering 160 credits during 4 years of studies as per curriculum of the Institute will be eligible to get Under Graduate B.Tech. degree with one major specialization as opted by the student from a list of major specializations as specified in the program curriculum. Over and above, a student will have to earn additional 20 credits (including the credits transferred from SWAYAM platform) and the same shall be mentioned as minor specialization. A student may opt any minor specialization offered by any department of the institute with the constraints that (i) the papers included in that specific specialization should not be same with any of the papers of his/her mandated curriculum and (ii) the student should have the knowledge of the prerequisites w.r.t. the papers of that specialization.

C. Category wise Credit Distribution:

Sl. No.	Category	Credit Allotted	Credit as per AICTE
1	Humanities and Social Sciences including Management Courses	15	15
2	Basic Science Courses	26	23
3	Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.	19	17
4	Professional Core Courses	58	61
5	Professional Elective Courses relevant to chosen specialization/ branch	12	12
6	Open Elective Courses from other technical and/or emerging subjects	12	12
7	Project Work, Seminar and Internship in Industry or elsewhere	17	20
8	Audit Courses [Environmental Science, Induction Training]	0	Non-Credit
Total		160	160

D. Course Code and Definition:

Sl. No.	Course Code	Definitions
1	L	Lecture
2	T	Tutorial
3	P	Practical
4	BS	Basic Science Courses
5	ES	Engineering Science Courses
6	HM	Humanities and Social Sciences including Management Courses
7	PC	Professional Core Courses
8	PE	Professional Elective Courses
9	OE	Open Elective Courses
10	AU	Audit Courses
11	PW	Project/ Internships/ Sessional
12	MN	Minor Courses

E. Courses in different Category:

Humanities and Social Sciences including Management Courses							
Sl. No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	I	HM-HU101	Communication Skill (JeevanKaushal-I)	2	0	0	2
2	I	HM-HU102	Introduction to Indian Knowledge System (Indian Knowledge System-I)	2	0	0	2
3	II	HM-HU203	Inculcation of Human Values and Professional Ethics (MulyaPravah)	2	0	0	2
4	IV	HM-HU401	Leadership Skill and Management (JeevanKaushal-III)	2	0	0	2
5	V	HM-HU502	Aptitude Skill Development-I	1	0	0	1
6	VI	HM-HU601	Aptitude Skill Development-II	1	0	0	1
7	VIII	HM-HU801	Universal Human Value-II (JeevanKaushal-IV)	2	0	0	2
Total Theory				**12**	**0**	**0**	**12**
Practical/ Sessional/ Audit Course							
1	I	HM-HU191	Communication Skill Laboratory (JeevanKaushal-I)	0	0	2	1

2	V	HM-HU591	Professional Skill (JeevanKaushal-II)	1	0	2	2
Total Practical/ Sessional/ Audit Course				**1**	**0**	**4**	3
Total				**13**	**0**	**4**	**15**

Basic Science Courses							
Sl. No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	I	BS-M101	Mathematics-I	3	1	0	4
2	I	BS-CH101	Chemistry	3	0	0	3
3	II	BS-M201	Mathematics-II	3	1	0	4
4	II	BS-PH201	Physics	3	1	0	4
5	IV	BS-BIO401	Biology for Engineers	2	0	0	2
6	IV	BS-M401	Vedic Mathematics (Indian Knowledge System-II)	2	0	0	2
7	V	BS-M501	Basics of Indian Astronomy (Indian Knowledge System-III)	2	0	0	2
8	VIII	BS-M801	Introduction to Indian Astronomy (Indian Knowledge System-IV)	2	0	0	2
Total Theory				**20**	**3**	**0**	**23**
Practical/ Sessional/ AuditCourse							
1	I	BS-CH191	Chemistry Laboratory	0	0	3	1.5
2	II	BS-PH291	Physics Laboratory	0	0	3	1.5
Total Practical/ Sessional/ Audit Course				**0**	**0**	**6**	**3**
Total				**20**	**3**	**6**	**26**

Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Electronics/ Mechanical/ Computer etc.							
Sl. No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	I	ES-EE101	Basic Electrical and Electronics Engineering	2	1	0	3
2	II	ES-CS201	Programming for Problem Solving	3	0	0	3

3	III	ES-EC301	Numerical Techniques	2	0	0	2
4	IV	ES-EC401	Design Thinking	2	0	0	2
Total Theory				**9**	**1**	**0**	**10**
Practical/ Sessional/ Audit Course							
1	I	ES-EE191	Basic Electrical and Electronics Engineering Laboratory	0	0	4	2
2	I	ES-ME192	Workshop/Manufacturing Practices	0	0	4	2
3	II	ES-CS291	Programming for Problem Solving Laboratory	0	0	4	2
4	II	ES-ME291	Engineering Graphics and Design	0	0	4	2
5	III	ES-EC391	Numerical Techniques Laboratory	0	0	2	1
6	IV	AU-EC492	Idea Laboratory	2	0	4	0
Total Practical/ Sessional/ Audit Course				**0**	**0**	**20**	**9**
Total				**9**	**1**	**20**	**19**

Professional Core Courses							
Sl. No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	III	PC-EC301	Electronic Devices	3	0	0	3
2	III	PC-EC302	Analog Electronic Circuits	3	0	0	3
3	III	PC-EC303	Signals and Systems	3	0	0	3
4	III	PC-EC304	Network Theory	3	0	0	3
5	III	PC-EC305	Data Structure and Algorithm	3	0	0	3
6	IV	PC-EC401	Digital System Design	3	0	0	3
7	IV	PC-EC402	Microprocessor & Microcontrollers	3	0	0	3
8	IV	PC-EC403	Control Systems	3	0	0	3
9	V	PC-EC501	Analog and Digital Communication	3	0	0	3
10	V	PC-EC502	Electromagnetic Waves and Transmission Line	3	0	0	3
11	V	PC-EC503	Computer Architecture	3	0	0	3
12	VI	PC-EC601	Computer Networks	3	0	0	3
13	VI	PC-EC602	Embedded System and VLSI Design	3	0	0	3

14	VI	PC-EC603	Operating system	2	0	0	2
15	VI	PC-EC604	Digital Signal Processing	3	0	0	3
Total Theory				**44**	**0**	**0**	**44**
Practical/ Sessional							
1	III	PC-EC391	Electronic Devices Laboratory	0	0	2	1
2	III	PC-EC392	Analog Electronic Circuits Laboratory	0	0	2	1
3	III	PC-EC394	Network Theory Laboratory	0	0	2	1
4	III	PC-EC395	Data Structure Laboratory	0	0	2	1
5	IV	PC-EC491	Digital System Design Laboratory	0	0	2	1
6	IV	PC-EC492	Microprocessor and Microcontrollers Laboratory	0	0	2	1
7	IV	PC-EC493	Control Systems Laboratory	0	0	2	1
8	V	PC-EC591	Analog and Digital Communication Laboratory	0	0	2	1
9	V	PC-EC592	Electromagnetic Waves and Transmission Line Laboratory	0	0	2	1
10	V	PC-EC593	Computer Architecture Laboratory	0	0	2	1
11	VI	PC-EC691	Computer Networks Laboratory	0	0	2	1
12	VI	PC-EC692	Embedded System and VLSI Design Laboratory	0	0	2	1
13	VI	PC-EC693	Operating System Laboratory	0	0	2	1
14	VI	PC-EC694	Digital Signal Processing Laboratory	0	0	2	1
Total Practical/ Sessional				**0**	**0**	**28**	**14**
Total				**45**	**0**	**28**	**58**

Professional Elective Courses relevant to chosen specialization/ branch

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	V	PE-EC501	Professional Elective-I	3	0	0	3
2	VI	PE-EC601	Professional Elective-II	3	0	0	3
3	VII	PE-EC701	Professional Elective-III	3	0	0	3
4	VII	PE-EC702	Professional Elective-IV	3	0	0	3
Total Theory				**12**	**0**	**0**	**12**

Practical/ Sessional							
Total Practical/ Sessional				**0**	**0**	**0**	**0**
Total				**12**	**0**	**0**	**12**

Open Elective Courses from other technical and/or emerging subjects							
Sl. No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	V	Based on the papers opted from the list of papers offered by other depts.	Open Elective -I	2	0	0	2
2	VII		Open Elective-II	2	0	0	2
3	VII		Open Elective-III	3	0	0	3
4	VIII		Open Elective-IV	2	0	0	2
Total Theory				**9**	**0**	**0**	**9**
Practical/ Sessional							
1	V	Based on the papers opted from the list of papers offered by other depts.	Open Elective -I Laboratory	0	0	2	1
2	VII		Open Elective-II Laboratory	0	0	2	1
3	VIII		Open Elective-IV Laboratory	0	0	2	1
Total Practical/ Sessional				**9**	**0**	**6**	**3**
Total				**9**	**0**	**6**	**12**

Project Work, Seminar and Internship in Industry or elsewhere							
Sl. No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
Total Theory				**0**	**0**	**0**	**0**
Practical/ Sessional							
1	II	PW-BS281	Ideation Laboratory	0	0	2	1
2	IV	PW-EC481	Micro Project	0	0	4	2
3	VI	PW-EC681	Mini Project	0	0	6	3

4	VII	PW-EC781	Seminar	0	0	2	1
5	VII	PW-EC782	Internship	0	0	4	2
6	VII	PW-EC783	Project-I	0	0	4	2
7	VIII	PW-EC881	Project-II	0	0	12	6
8	VIII	PW-EC882	Comprehensive Viva Voce	0	0	0	1
Total Practical/ Sessional				**0**	**0**	**34**	**18**
Total				**0**	**0**	**34**	**18**

Audit Courses [Environmental Science, Induction Training etc.]							
Sl. No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	IV	AU-EC492	Idea Laboratory	2	0	4	0
Total Theory				**2**	**0**	**4**	**0**
Practical/ Sessional/ Audit							
1	II	AU271	NSS/NCC	2	0	0	0
2	III	AU-BS371	Environmental Science	2	0	0	0
Total Practical/ Sessional/ Audit Course				**4**	**0**	**0**	**0**
Total				**6**	**0**	**4**	**0**