Curriculum for Undergraduate Degree
B.Tech in Computer Science and 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/ Laboratory(P)Per Week	0.5
4	2Hrs. Practical/ Laboratory(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 Undergraduate 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 an 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	17	16
2	Basic Science Courses	29	23
3	Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.	22	29
4	Professional Core Courses	58	59
5	Professional Elective Courses relevant to chosen specialization/ branch	9	12
6	Open Elective Courses from other technical and/or emerging subjects	9	9
7	Project Work, Seminar and Internship in Industry or elsewhere	16	15
8	Audit Courses [Environmental Sciences, Induction Training]	Non-Credit	Non-Credit
Total		160	163

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-HU103	Inculcation of Human Values and Professional Ethics (MulyaPravah)	2	0	0	2
2	II	HM-HU201	Communication Skill (JeevanKaushal-I)	2	0	0	2
3	II	HM-HU202	Introduction to Indian Knowledge System (Indian Knowledge System-I)	2	0	0	2
4	III	HM-HU301	Universal Human Values-II (JeevanKaushal-IV)	2	0	0	2
5	V	HM-HU503	Leadership and Management Skills (JeevanKaushal-III)	2	0	0	2
6	VI	HM-HU603	Professional Skill (JeevanKaushal-II)	1	0	0	1
7	VIII	HM-HU803	Entrepreneurship and Start-ups	2	0	0	2
Total Theory				**13**	**0**	**0**	**13**
Practical/ Sessional							
1	II	HM-HU291	Communication Skill Laboratory	0	0	2	1
2	VI	HM-HU693	Professional Skill (JeevanKaushal-II) Laboratory	0	0	2	1

3	V	HM-HU571	Aptitude Skill Development - I	1	0	0	1
4	VI	HM-HU671	Aptitude Skill Development - II	1	0	0	1
Total Practical/ Sessional				**2**	**0**	**4**	**4**
Total				**15**	**0**	**4**	**17**

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-PH101	Physics	3	1	0	4
3	II	BS-M201	Mathematics-II	3	1	0	4
4	II	BS-CH201	Chemistry	3	0	0	3
5	III	BS-M301	Mathematics -III	3	0	0	3
6	III	BS-M303	Vedic Math (Indian Knowledge System-II)	2	0	0	2
7	IV	BS-M403	Basics of Indian Astronomy (Indian Knowledge System-III)	2	0	0	2
8	V	BS-M503	Introduction to Indian Astronomy (Indian Knowledge System-IV)	2	0	0	2
9	VII	BS-BIO703	Biology for Engineers	2	0	0	2
Total Theory				**23**	**3**	**0**	**26**
Practical/ Sessional							
1	I	BS-PH191	Physics Laboratory	0	0	3	1.5
2	II	BS-CH291	Chemistry Laboratory	0	0	3	1.5
Total Practical/ Sessional				**0**	**0**	**6**	**3**
Total				**23**	**3**	**6**	**29**

Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer, etc.

Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	I	ES-CS101	Programming for Problem Solving	3	0	0	3
2	II	ES-EE201	Basic Electrical and Electronics Engineering	2	1	0	3
3	III	ES-EC301	Digital Electronics	3	0	0	3
4	IV	ES-EC401	Signals and Systems	3	0	0	3
Total Theory				**11**	**1**	**0**	**12**
Practical/ Sessional							
1	I	ES-CS191	Programming for Problem Solving Laboratory	0	0	4	2
2	I	ES-ME191	Engineering Graphics and Design	0	0	4	2
3	II	ES-EE291	Basic Electrical and	0	0	4	2

			Electronics Engineering Laboratory				
4	II	ES-ME292	Workshop/Manufacturing Practices	0	0	4	2
5	III	ES-EC391	Digital Electronics Laboratory	0	0	4	2
Total Practical/ Sessional/ Audit Course				**0**	**0**	**20**	**10**
Total				**11**	**1**	**20**	**22**

Professional Core Courses							
Sl No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	III	PC-CS301	Data Structures and Algorithms	3	1	0	4
2	IV	PC-CS401	Discrete Mathematics	3	0	0	3
3	IV	PC-CS402	Computer Organization and Architecture	3	0	0	3
4	IV	PC-CS403	Design and Analysis of Algorithms	3	0	0	3
5	IV	PC-CS404	Operating Systems	3	0	0	3
6	V	PC-CS501	Object-oriented Programming	3	0	0	3
7	V	PC-CS502	Formal Language and Automata Theory	3	0	0	3
8	V	PC-CS503	Machine Learning	3	0	0	3
9	V	PC-CS504	Software Engineering	3	0	0	3
10	VI	PC-CS601	Database Management System	3	0	0	3
11	VI	PC-CS602	Computer Networks	3	0	0	3
12	VI	PC-CS603	Compiler Design	3	0	0	3
13	VI	PC-CS604	Introduction to Cyber Security	3	0	0	3
Total Theory				**39**	**1**	**0**	**40**
Practical/ Sessional							
1	III	PC-CS391	Data Structures Laboratory	0	0	4	2
2	III	PC-CS392	Python for Problem Solving Laboratory	0	0	4	2
3	IV	PC-CS492	Computer Organization and Architecture Laboratory	0	0	3	1.5
4	IV	PC-CS493	Algorithms Laboratory	0	0	4	2
5	IV	PC-CS494	Operating Systems Laboratory	0	0	3	1.5
6	V	PC-CS591	Object-oriented Programming Laboratory	0	0	3	1.5
7	V	PC-CS593	Machine Learning Laboratory	0	0	3	1.5
8	V	PC-CS595	Cloud Management Laboratory	0	0	4	2
9	VI	PC-CS691	Database Management System Laboratory	0	0	4	2
10	VI	PC-CS692	Computer Networks Laboratory	0	0	4	2
Total Practical/ Sessional				**0**	**0**	**36**	**18**
Total				**39**	**1**	**36**	**58**
Professional Elective Courses relevant to chosen specialization/ branch							

Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	VII	PE-CS701	Professional Elective - I	3	0	0	3
2	VII	PE-CS702	Professional Elective - II	3	0	0	3
3	VIII	PE-CS801	Professional Elective - III	3	0	0	3
Total Theory				**9**	**0**	**0**	**9**
Total				**9**	**0**	**0**	**9**

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	VII	Based on the papers opted from the list of papers offered by other depts.	Open Elective - I	3	0	0	3
2	VIII		Open Elective - II	3	0	0	3
3	VIII		Open Elective - III	3	0	0	3
Total Theory				**9**	**0**	**0**	**9**
Total				**9**	**0**	**0**	**9**

Project Work, Seminar, and Internship in Industry or elsewhere

Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Practical/ Sessional							
1	II	PW-BS281	Ideation Laboratory	0	0	2	1
2	IV	PW-CS481	Mini Project	0	0	4	2
3	VI	PW-CS681	Project-I	0	0	4	2
4	VII	PW-CS781	Project-II	0	0	6	3
5	VII	PW-CS782	Summer Internship	0	0	6	3
6	VIII	PW-CS881	Project-III	0	0	8	4
7	VIII	PW-CS882	Comprehensive Viva voce	0	0	2	1
Total Practical/ Sessional				**0**	**0**	**32**	**16**
Total				**0**	**0**	**32**	**16**

Audit Courses [Environmental Science, Induction Training etc.]

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
Total Theory				**0**	**0**	**0**	**0**
Practical/ Sessional							
1	I	AU171	NSS/NCC	2	0	0	0
2	VI	AU671	Environmental Science	2	0	0	0
Total Practical/ Sessional				**4**	**0**	**0**	**0**
Total				**4**	**0**	**0**	**0**