Curriculum for Undergraduate Degree
B.Tech. in Information Technology
(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	18	12
2	Basic Science Courses	29	25
3	Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.	21.5	24
4	Professional Core Courses	51.5	48
5	Professional Elective Courses relevant to chosen specialization/ branch	12	18
6	Open Elective Courses from other technical and/or emerging subjects	9	18
7	Project Work, Seminar and Internship in Industry or elsewhere	19	15
8	Audit Courses [Environmental Sciences, 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	VII	HM-HU701	Entrepreneurship and Start-ups	3	0	0	3
6	VIII	HM-HU801	Universal Human Value-II (JeevanKaushal-IV)	2	0	0	2
Total Theory				**13**	**0**	**0**	**13**
Practical/ Sessional/ Audit Course							
1	I	HM-HU191	Communication Skill Laboratory	0	0	2	1

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2	V	HM-HU571	Aptitude Skill Development-I	1	0	0	1
3	V	HM-HU591	Professional Skill (JeevanKaushal-II)	1	0	2	2
4	V1	HM-HU671	Aptitude Skill Development-II	1	0	0	1
Total Practical/ Sessional/ Audit Course				**3**	**0**	**4**	**5**
Total				**16**	**0**	**4**	**18**

Basic Science Courses							
Sl. No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	I	BS-CH101	Chemistry	3	0	0	3
2	I	BS-M101	Mathematics-I	3	1	0	4
3	II	BS-M201	Mathematics-II	3	1	0	4
4	II	BS-PH201	Physics	3	1	0	4
5	III	BS-M301	Mathematics-III	3	0	0	3
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	VI	BS-BIO601	Biology for Engineers	2	0	0	2
9	VIII	BS-M801	Introduction to Indian Astronomy (Indian Knowledge System -IV)	2	0	0	2
Total Theory				**23**	**3**	**0**	**26**
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				**23**	**3**	**6**	**29**

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	Analog and Digital Electronics	3	0	0	3
4	IV	ES-IT401	Discrete Mathematics	3	0	0	3
		Total Theory		**11**	**1**	**0**	**12**
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	Analog and Digital Electronics Laboratory	0	0	3	1.5
		Total Practical/ Sessional/ Audit Course		**0**	**0**	**19**	**9.5**
Total				**11**	**1**	**19**	**21.5**

Professional Core Courses

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	III	PC-IT301	Data Structure and Algorithms	3	0	0	3
2	III	PC-IT302	Computer Organization and Architecture	3	0	0	3
3	IV	PC-IT402	Database Management System	3	0	0	3
4	IV	PC-IT403	Design and Analysis of Algorithms	3	0	0	3
5	IV	PC-IT404	Object Oriented Programming	3	0	0	3
6	V	PC-IT501	Machine Learning	3	1	0	4
7	V	PC-IT502	Operating Systems	3	0	0	3
8	V	PC-IT503	Theory of Computation	3	0	0	3

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9	VI	PC-IT601	Software Engineering	3	0	0	3
10	VI	PC-IT602	Computer Networks	3	0	0	3
11	VII	PC-IT701	Compiler Design	3	0	0	3
Total Theory				**33**	**1**	**0**	**34**
Practical/ Sessional							
1	III	PC-IT391	Data Structure and Algorithms Laboratory	0	0	3	1.5
2	III	PC-IT392	Computer Organization and Architecture Laboratory	0	0	3	1.5
3	III	PC-IT393	IT Workshop using Python	1	0	3	2.5
4	IV	PC-IT492	Database Management System Laboratory	0	0	3	1.5
5	IV	PC-IT493	Design and Analysis of Algorithms Laboratory	0	0	3	1.5
6	IV	PC-IT494	Object Oriented Programming Laboratory	0	0	3	1.5
7	V	PC-IT591	Machine Learning Laboratory	0	0	3	1.5
8	V	PC-IT592	Operating System Lab	0	0	3	1.5
9	VI	PC-IT691	Software Engineering Laboratory	0	0	3	1.5
10	VI	PC-IT692	Computer Networks Laboratory	0	0	3	1.5
11	VII	PC-IT791	Compiler Design Laboratory	0	0	3	1.5
Total Practical/ Sessional				**1**	**0**	**33**	**17.5**
Total				**34**	**1**	**33**	**51.5**

Professional Elective Courses relevant to chosen specialization/ branch							
Sl. No.	**Semester**	**Course Code**	**Course Name**	**Contact Hours**			**Credits**
				L	**T**	**P**	
Theory							
1	VI	PE-IT601	Professional Elective-I	3	0	0	3
2	VI	PE-IT602	Professional Elective-II	3	0	0	3
3	VII	PE-IT701	Professional Elective-III	3	0	0	3
4	VIII	PE-IT801	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**

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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	VI	Based on the papers opted from the list of papers offered by other depts.	Open Elective -I	3	0	0	3
2	VI		Open Elective-II	3	0	0	3
3	VII		Open Elective-III	3	0	0	3
Total Theory				**9**	**0**	**0**	**9**
Practical/ Sessional							
Total Practical/ Sessional				**0**	**0**	**0**	**0**
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	
Theory							
Total Theory				**0**	**0**	**0**	**0**
Practical/ Sessional							
1	II	PW-BS281	Ideation Laboratory	0	0	2	1
2	IV	PW-IT481	Micro Project	0	0	4	2
3	V	PW-IT581	Mini Project-I	0	0	4	2
4	VI	PW-IT681	Mini Project-II	0	0	4	2
5	VII	PW-IT781	Project-I	0	0	8	4
6	VII	PW-IT782	Industrial Training Evaluation	0	0	0	1
7	VIII	PW-IT881	Project-II	0	0	12	6
8	VIII	PW-IT882	Comprehensive Viva-voce	0	0	0	1
Total Practical/ Sessional				**0**	**0**	**34**	**19**
Total				**0**	**0**	**34**	**19**

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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/ Audit							
1	I	AU-271	NSS/NCC	2	0	0	0
2	II	AU-BS371	Environmental Science	2	0	0	0
Total Practical/ Sessional/ Audit Course				**4**	**0**	**0**	**0**
Total				**4**	**0**	**0**	**0**