

Date: 01.07.2025

Record Minutes of the 36<sup>th</sup> Meeting of Internal Quality Assurance Cell (IQAC) held on 30.06.2025 at 02:00 pm at the Conference Hall of the institute and through online link: <https://meet.google.com/yjq-ogno-bdp>.

**Members Present:**

- Prof. (Dr.) Abhijit Lahiri
- Dr. Pubali Mukherjee
- Dr. Tamal Roy
- Mr. Avijit Bose
- Mr. Sachin Balo
- Mr. Tapas Biswas
- Dr. Dipankar Ghosh
- Dr. Juin Ghosh Sarkar
- Prof. (Dr.) S. S. Thakur
- Prof. (Dr.) Sudipto Chaki
- Prof. (Dr.) Arun Kumar Jalan
- Prof. (Dr.) Prasenjit Chatterjee
- Prof. (Dr.) Parthasarathi Chakraborty (online)
- Mr. Sandip Dutta
- Mr. Subir Bhadra
- Mr. Sudeep Samanta
- Mr. Devasish Basu (online)
- Prof. (Dr.) Satadal Saha

**Members Absent:**

- Mr. Abhay Kejriwal
- Dr. Debopoma Kar Roy
- Dr. Abhijit Dutta
- Dr. Krishnendu Chattopadhyay
- Mr. Biswajit Majumdar
- Mr. Saptarshi Maiti
- Ms. Riya Karmakar

**Agenda of the meeting:**

1. Confirmation of the minutes of 35<sup>th</sup> meeting of IQAC held on 25.03.25.
2. Revision of curriculum for all the UG and PG programs.
3. Registration fee reimbursement for presenting research paper.
4. Recruitment/Re-designation/Resignation information.
5. Miscellaneous.

**Proceedings of the meeting:**

Prof. (Dr.) Satadal Saha, Coordinator, IQAC welcomed all the members present in the meeting. Following points were discussed and included in the resolution of the meeting:

**Item No. 1 of Agenda: Confirmation of the minutes of 35<sup>th</sup> meeting of IQAC held on 25.03.25.**

Minutes of the 35<sup>th</sup> meeting of IQAC of MCKVIE, held on 25.03.2025, as circulated to all the members, were confirmed.

**Item No. 2 of Agenda: Revision of curriculum for all the UG and PG programs.**

As informed by the IQAC Coordinator, the revised curriculum structure for all the programs has been prepared as per the UGC/AICTE guidelines in consultation with industry personnel and has been approved by the respective departmental BoS. The approved curriculum structure has been

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placed in the meeting and is attached herewith (**Annexure-I**) as a reference and subsequent approval.

**Item No. 3 of Agenda: Registration fee reimbursement for presenting research paper.**

It is reported by IQAC Coordinator that Mr. Soumya Paul, Asst. Prof.- CSE, Mr. Arindam Das, Asst. Prof.- IT, Mr. Shilajit Roy, Student-CSE and Mr. Siddhartha Shaw- Student- CSE-DS have presented research papers authored by them in SCOPUS indexed international conferences. They have submitted all the necessary documents and appealed for the reimbursement of the registration fees.

Therefore, as per the institutional incentive policy, Rs. 13,000/- (Rupees Thirteen Thousand only) may be reimbursed in total against the actual registration cost of Rs. 17,620/- (Rupees Seventeen Thousand Six Hundred and Twenty only) as per **Annexure-II**.

**Item No. 4 of Agenda: Recruitment/Re-designation/Resignation information.**

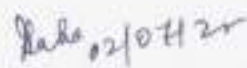
As reported by IQAC Coordinator, during April, 2025 to June 2025 four faculty members and admin staff have joined the institute. The service of four faculty members and admin staff have been confirmed, maternity leave has been approved to one faculty member, one faculty member has resigned and one admin staff has retired. Please refer to **Annexure-III** for the details.

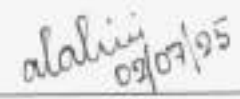
**Item No. 5 of Agenda: Miscellaneous.**

The following points have been discussed and /or resolutions taken under this agenda.

1. It is decided that the institute will apply for NBA accreditation for B.Tech (CSE), B.Tech (IT), B.Tech (ECE) and B.Tech (EE) programs. The respective HoDs are asked to complete the Pre-qualifier and the SAR on an urgent basis.
2. The institute will also apply for renewal of NAAC accreditation under new accreditation framework. All the HoDs are requested to instruct the departmental NAAC Coordinators and/or associated members to complete the job proactively. The Criteria- In-Charges are also asked to collect the data for A.Y. 2024-25 and do the compilation job at the earliest.

There being no other issues the meeting was ended with a vote of thanks to the Chair.

  
Prof. (Dr.) Satadal Saha  
Coordinator, IQAC

  
Prof. (Dr.) Abhijit Lahiri  
Chairman, IQAC

Minutes circulated to:

- Chairman Sir
- All the members of IQAC



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## 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
<b>Total</b>		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 (Mulya Prava)	2	0	0	2
2	II	HM-HU201	Communication Skill (Jeevan Kaushal-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 (Jeevan Kaushal-IV)	2	0	0	2
5	V	HM-HU503	Leadership and Management Skills (Jeevan Kaushal-III)	2	0	0	2
6	VI	HM-HU603	Professional Skill (Jeevan Kaushal-II)	1	0	0	1
7	VIII	HM-HU803	Entrepreneurship and Start-ups	2	0	0	2
<b>Total Theory</b>				<b>13</b>	<b>0</b>	<b>0</b>	<b>13</b>
<b>Practical/ Sessional</b>							
1	II	HM-HU291	Communication Skill Laboratory	0	0	2	1
2	VI	HM-HU693	Professional Skill (Jeevan Kaushal-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
<b>Total Practical/ Sessional</b>				<b>2</b>	<b>0</b>	<b>4</b>	<b>4</b>
<b>Total</b>				<b>15</b>	<b>0</b>	<b>4</b>	<b>17</b>

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



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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 Electronics Engineering Laboratory	0	0	4	2
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
<i>Total Theory</i>				<b>39</b>	<b>1</b>	<b>0</b>	<b>40</b>
<b>Practical/ Sessional</b>							
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
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>36</b>	<b>18</b>
<b>Total</b>				<b>39</b>	<b>1</b>	<b>36</b>	<b>58</b>

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



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<i>Total Theory</i>	9	0	0	9
<b>Total</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>

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
	IV	PW-CS481	Mini Project	0	0	4	2
2	VI	PW-CS681	Project-I	0	0	4	2
3	VII	PW-CS781	Project-II	0	0	6	3
4	VII	PW-CS782	Summer Internship	0	0	6	3
5	VIII	PW-CS881	Project-III	0	0	8	4
6	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 Sciences, Induction Training etc.]							
Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Audit Course							
1	I	AU171	NSS/NCC	2	0	0	0
2	VI	AU671	Environmental Science	2	0	0	0
Total Audit Course				4	0	0	0
Total				4	0	0	0



## Part II: Course Structure & Semester wise Credit Distribution

First Semester (First Year)							
Mandatory Induction Program- 3 Weeks Duration							
Sl No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M101	Mathematics-I	3	1	0	4
2	BS	BS-PH101	Physics	3	1	0	4
3	ES	ES-CS101	Programming for Problem Solving	3	0	0	3
4	HM	HM-HU103	Inculcation of Human Values and Professional Ethics (Mulya Prava)	2	0	0	2
Total Theory				11	2	0	13
Practical/ Sessional/ Audit Course							
1	BS	BS-PH191	Physics Laboratory	0	0	3	1.5
2	ES	ES-CS191	Programming for Problem Solving Laboratory	0	0	4	2
3	ES	ES-ME191	Engineering Graphics and Design	0	0	4	2
4	AU	AU171	NSS/NCC	2	0	0	0
Total Practical/ Sessional/ Audit Course				2	0	11	5.5
Total of First Semester				13	2	11	18.5

Second Semester (First Year)							
Sl No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M201	Mathematics-II	3	1	0	4
2	BS	BS-CH201	Chemistry	3	0	0	3
3	ES	ES-EE201	Basic Electrical and Electronics Engineering	2	1	0	3
4	HM	HM-HU201	Communication Skill (Jeevan Kaushal-I)	2	0	0	2
5	HM	HM-HU202	Introduction to Indian Knowledge System (Indian Knowledge System-I)	2	0	0	2
Total Theory				12	2	0	14
Practical/ Sessional/ Audit Course							
1	BS	BS-CH291	Chemistry Laboratory	0	0	3	1.5



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2	ES	ES-EE291	Basic Electrical and Electronics Engineering Laboratory	0	0	4	2
3	ES	ES-ME292	Workshop/Manufacturing Practices	0	0	4	2
4	HM	HM-HU291	Communication Skill Laboratory	0	0	2	1
5	PW	PW-BS281	Ideation Laboratory	0	0	2	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>15</b>	<b>7.5</b>
<b>Total of Second Semester</b>				<b>12</b>	<b>2</b>	<b>15</b>	<b>21.5</b>



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Third Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M301	Mathematics -III	3	0	0	3
2	BS	BS-M303	Vedic Math (Indian Knowledge System-II)	2	0	0	2
3	ES	ES-EC301	Digital Electronics	3	0	0	3
4	PC	PC-CS301	Data Structures and Algorithms	3	1	0	4
5	HM	HM-HU301	Universal Human Values-II (Jeevan Kaushal-IV)	2	0	0	2
Total Theory				13	1	0	14
Practical/ Sessional/ Audit Course							
1	ES	ES-EC391	Digital Electronics Laboratory	0	0	4	2
2	PC	PC-CS391	Data Structures Laboratory	0	0	4	2
3	PC	PC-CS392	Python for Problem Solving Laboratory	0	0	4	2
Total Practical/ Sessional/ Audit Course				0	0	12	6
Total of Third Semester				13	1	12	20

Fourth Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M403	Basics of Indian Astronomy (Indian Knowledge System-III)	2	0	0	2
2	ES	ES-EC401	Signals and Systems	3	0	0	3
3	PC	PC-CS401	Discrete Mathematics	3	0	0	3
4	PC	PC-CS402	Computer Organization and Architecture	3	0	0	3
5	PC	PC-CS403	Design and Analysis of Algorithms	3	0	0	3
6	PC	PC-CS404	Operating Systems	3	0	0	3
Total Theory				17	0	0	17
Practical/ Sessional/ Audit Course							
1	PC	PC-CS492	Computer Organization and Architecture Laboratory	0	0	3	1.5
2	PC	PC-CS493	Algorithms Laboratory	0	0	4	2
3	PC	PC-CS494	Operating Systems Laboratory	0	0	3	1.5
3	Pw	PW-CS481	Mini Project	0	0	4	2
Total Practical/ Sessional/ Audit Course				0	0	14	7
Total of Fourth Semester				17	0	14	24

Fifth Semester (Third Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M503	Introduction to Indian Astronomy (Indian Knowledge System-IV)	2	0	0	2
2	PC	PC-CS501	Object-oriented Programming	3	0	0	3
3	PC	PC-CS502	Formal Language and Automata Theory	3	0	0	3
4	PC	PC-CS503	Machine Learning	3	0	0	3
5	PC	PC-CS504	Software Engineering	3	0	0	3
6	HM	HM-HU503	Leadership and Management Skills (Jeevan Kaushal-III)	2	0	0	2
Total Theory				16	0	0	16
Practical/ Sessional/ Audit Course							
1	PC	PC-CS591	Object-oriented Programming Laboratory	0	0	3	1.5
2	PC	PC-CS593	Machine Learning Laboratory	0	0	3	1.5
3	PC	PC-CS595	Cloud Management Laboratory	0	0	4	2
4	HM	HM-HU571	Aptitude Skill Development - I	1	0	0	1
Total Practical/ Sessional/ Audit Course				1	0	10	6
Total of Fifth Semester				17	0	10	22

Sixth Semester (Third Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-CS601	Database Management System	3	0	0	3
2	PC	PC-CS602	Computer Networks	3	0	0	3
3	PC	PC-CS603	Compiler Design	3	0	0	3
4	PC	PC-CS604	Introduction to Cyber Security	3	0	0	3
5	HM	HM-HU603	Professional Skill (Jeevan Kaushal-II)	1	0	0	1
Total Theory				13	0	0	13
Practical/ Sessional/ Audit Course							
1	PC	PC-CS691	Database Management	0	0	4	2





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			System Laboratory				
2	PC	PC-CS692	Computer Networks Laboratory	0	0	4	2
3	HM	HM-HU693	Professional Skill (Jeevan Kaushal-II) Laboratory	0	0	2	1
4	PW	PW-CS681	Project-I	0	0	4	2
5	HM	HM-HU671	Aptitude Skill Development - II	1	0	0	1
6	AU	AU671	Environmental Science	2	0	0	0
<i>Total Practical/ Sessional/ Audit Course</i>				<b>3</b>	<b>0</b>	<b>14</b>	<b>8</b>
<b>Total of Sixth Semester</b>				<b>16</b>	<b>0</b>	<b>14</b>	<b>21</b>

Seventh Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-BIO703	Biology for Engineers	2	0	0	2
2	PE	PE-CS701	Professional Elective - I	3	0	0	3
3	PE	PE-CS702	Professional Elective - II	3	0	0	3
4	OE	OE-XXXXXX	Open Elective - I	3	0	0	3
	Total Theory			11	0	0	11
Practical/ Sessional/ Audit Course							
1	PW	PW-CS781	Project-II	0	0	6	3
2	PW	PW-CS782	Summer Internship	0	0	6	3
Total Practical/ Sessional/ Audit Course				0	0	12	6
Total of Seventh Semester				11	0	12	17

Eighth Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PE	PE-CS801	Professional Elective - III	3	0	0	3
2	HM	HM-HU803	Entrepreneurship and Start-ups	2	0	0	2
3	OE	OE-XXXXXX	Open Elective - II	3	0	0	3
4	OE	OE-XXXXXX	Open Elective - III	3	0	0	3
Total Theory				11	0	0	11
Practical/ Sessional/ Audit Course							
1	PW	PW-CS881	Project-III	0	0	8	4
2	PW	PW-CS882	Comprehensive Viva voce	0	0	2	1
Total Practical/ Sessional/ Audit Course				0	0	10	5
Total of Eighth Semester				11	0	2	16

## Part III: Specializations and corresponding List of Elective Papers

Specialization: Advanced Machine Intelligence								
Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VII	PE-CS701A	Professional Elective-I	A. Artificial Intelligence B. Neural Network and Deep Learning	3	0	0	3
2	VII	PE-CS702A	Professional Elective-II	A. Image Processing and Computer Vision B. Natural Language processing	3	0	0	3
3	VIII	PE-CS801A	Professional Elective-III	A. Generative AI B. Reinforcement Learning	3	0	0	3
Total Theory					9	0	0	9
Practical/ Sessional/ Audit Course								
1					0	0	0	0
Total Practical/ Sessional/ Audit Course					0	0	0	0
Total					9	0	0	9

Specialization: Advanced Computing								
Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VII	PE-CS701B	Professional Elective-I	A. High Performance Computing B. Advanced Computer and GPU Architecture	3	0	0	3
2	VII	PE-CS702B	Professional Elective-II	A. Cloud Computing B. Edge Computing	3	0	0	3
3	VIII	PE-CS801B	Professional Elective-III	A. Quantum Computing B. Distributed System	3	0	0	3
Total Theory					9	0	0	9
Practical/ Sessional/ Audit Course								
1					0	0	0	0
Total Practical/ Sessional/ Audit Course					0	0	0	0
Total					9	0	0	9

Specialization: Intelligent and Secure Information Systems								
Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VII	PE-CS701C	Professional Elective-I	A. Soft Computing B. Pattern Recognition	3	0	0	3
2	VII	PE-CS702C	Professional Elective-II	A. Data Mining B. Big Data Analytics	3	0	0	3
3	VIII	PE-CS801C	Professional Elective-III	A. Blockchain Technologies B. Information Security	3	0	0	3
Total Theory					9	0	0	9
Practical/ Sessional/ Audit Course								
1					0	0	0	0
Total Practical/ Sessional/ Audit Course					0	0	0	0
Total					9	0	0	9

## Part IV: List of Open Elective Papers

Open Elective Papers offered by CSE department								
Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	V	OE-CS501A	Open Elective-I	Introduction to Python Programming	2	0	0	2
2	VI	OE-CS601A	Open Elective-II	Data Structures and Algorithms	2	0	0	2
3	VII	OE-CS701A	Open Elective-III	Database Management System	2	0	0	2
4	VII	OE-CS701B		Object-oriented Programming	2	0	0	2
5	VIII	OE-CS801A	Open Elective-IV	Machine Learning	2	0	0	2
Total Theory					10	0	0	10
Practical/ Sessional/ Audit Course								
1	V	OE-CS591A	Open Elective-I	Introduction to Python Programming Laboratory	0	0	2	1
2	VI	OE-CS691A	Open Elective-II	Data Structures Laboratory	0	0	2	1
3	VII	OE-CS791A	Open Elective-III	Database Management System Laboratory	0	0	2	1
4	VII	OE-CS791B		Object-oriented Programming Laboratory	0	0	2	1
5	VIII	OE-CS891A	Open Elective-IV	Machine Learning Laboratory	0	0	2	1
Total Practical/ Sessional/ Audit Course					0	0	10	5
Total					10	0	10	15



## Part V: Curriculum Structure for Minor Degree

### A. Minor Degree in Advanced Web Development

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	IV	MN-CS401A	Fundamentals of Front-end Development	4	0	0	4
2	V	MN-CS501A	Server-Side Programming	4	0	0	4
3	VI	MN-CS601A	Advanced Front-end Development	4	0	0	4
4	VII	MN-CS701A	Fundamentals of Deployment	2	0	0	2
Total Theory				14	0	0	14
Practical/ Sessional/ Audit Course							
1	IV	MN-CS491A	Fundamentals of Front-end Development Laboratory	0	0	2	1
2	V	MN-CS591A	Server-Side Programming Laboratory	0	0	2	1
3	VI	MN-CS691A	Advanced Front-end Development Laboratory	0	0	2	1
4	VII	MN-CS791A	Fundamentals of Deployment Laboratory	0	0	6	3
Total Practical/ Sessional/ Audit Course				0	0	6	6
Total				14	0	6	20



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## Curriculum for Undergraduate Degree B.Tech. in Computer Science and Engineering (Data Science) (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	1 Hr. Tutorial (T) Per Week	1
3	1 Hr. Practical / Laboratory (P) Per Week	0.5
4	2 Hrs. 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 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	17	15
2	Basic Science Courses	29	23
3	Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.	19	22
4	Professional Core Courses (Branch Specific)	61	54



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5	Professional Elective Courses (Branch Specific)	9	18
6	Open Elective Courses from other technical and/or emerging subjects	9	15
7	Project Work, Seminar and Internship in Industry or elsewhere	16	16
8	Audit Courses [Environmental Science, Induction Training]	0	Non-Credit
<b>Total</b>		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 (Mulya Prava)	2	0	0	2
2	II	HM-HU201	Communication Skill (Jeevan Kaushal-I)	2	0	0	2



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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 (Jeevan Kaushal-IV)	2	0	0	2
5	V	HM-HU503	Leadership and Management Skills (Jeevan Kaushal-III)	2	0	0	2
6	VI	HM-HU603	Professional Skill (Jeevan Kaushal-II)	1	0	0	1
7	VIII	HM-HU803	Entrepreneurship and Start-ups	2	0	0	2
<i>Total Theory</i>				<b>13</b>	<b>0</b>	<b>0</b>	<b>13</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	II	HM-HU291	Communication Skill Laboratory	0	0	2	1
2	V	HM-HU571	Aptitude Skill Development - I	1	0	0	1
3	VI	HM-HU671	Aptitude Skill Development - II	1	0	0	1
4	VI	HM-HU693	Professional Skill (Jeevan Kaushal-II) Laboratory	0	0	2	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>2</b>	<b>0</b>	<b>4</b>	<b>4</b>
<b>Total</b>				<b>15</b>	<b>0</b>	<b>4</b>	<b>17</b>

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	2	0	0	2



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			Astronomy (Indian Knowledge System-IV)				
9	VII	BS-BIO703	Biology for Engineers	2	0	0	2
<i>Total Theory</i>				<b>23</b>	<b>3</b>	<b>0</b>	<b>26</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	I	BS-PH191	Physics Laboratory	0	0	3	1.5
2	II	BS-CH291	Chemistry Laboratory	0	0	3	1.5
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>6</b>	<b>3</b>
<b>Total</b>				<b>23</b>	<b>3</b>	<b>6</b>	<b>29</b>

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-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
Total Theory				8	1	0	9
Practical/ Sessional/ Audit Course							
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 Electronics Engineering Laboratory	0	0	4	2
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				8	1	20	19





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## 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	III	PC-CS(D)301	Introduction to Data Science	3	0	0	3
3	IV	PC-CS401	Discrete Mathematics	3	0	0	3
4	IV	PC-CS402	Computer Organization and Architecture	3	0	0	3
5	IV	PC-CS403	Design and Analysis of Algorithms	3	0	0	3
6	IV	PC-CS404	Operating Systems	3	0	0	3
7	IV	PC-CS(D)401	Introduction to AI	2	0	0	2
8	V	PC-CS501	Object-oriented Programming	3	0	0	3
9	V	PC-CS(D)501	Machine Learning	3	1	0	4
10	V	PC-CS(D)502	Computer Networks	3	0	0	3
11	VI	PC-CS601	Database Management System	3	0	0	3
12	VI	PC-CS(D)601	Software Engineering	3	0	0	3
13	VI	PC-CS(D)602	Optimization Techniques	3	0	0	3
14	VI	PC-CS(D)603	Formal language and Automata Theory	3	0	0	3
Total Theory				41	2	0	43
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-CS493	Algorithms Laboratory	0	0	4	2
4	IV	PC-CS494	Operating Systems	0	0	3	1.5



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			Laboratory				
5	IV	PC-CS(D)492	Data Visualization Laboratory	0	0	3	1.5
6	V	PC-CS591	Object-oriented Programming Laboratory	0	0	3	1.5
7	V	PC-CS(D)591	Machine Learning Laboratory	0	0	4	2
8	V	PC-CS(D)592	Computer Networks Laboratory	0	0	3	1.5
9	VI	PC-CS691	Database Management System Laboratory	0	0	4	2
10	VI	PC-CS(D)694	Cloud Management Laboratory	0	0	4	2
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>36</b>	<b>18</b>
<b>Total</b>				<b>41</b>	<b>2</b>	<b>36</b>	<b>61</b>

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-CS(D)701	Professional Elective - I	3	0	0	3
2	VII	PE-CS(D)702	Professional Elective - II	3	0	0	3
3	VIII	PE-CS(D)801	Professional Elective - III	3	0	0	3
Total Theory				9	0	0	9
Practical/ Sessional							
1				0	0	0	0
2				0	0	0	0
Total Practical/ Sessional Course				0	0	0	0
Total				9	0	0	9



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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	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
Practical/ Sessional							
1				0	0	0	0
2				0	0	0	0
Total Practical/ Sessional Course				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							
1				0	0	0	0
2				0	0	0	0
Total Theory				0	0	0	0
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



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<b>Total</b>	<b>0</b>	<b>0</b>	<b>32</b>	<b>16</b>
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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							
1	I	AU171	NSS/NCC	2	0	0	0
2	VI	AU671	Environmental Science	2	0	0	0
Total Theory				4	0	0	0
Practical/ Sessional/ Audit							
1				0	0	0	0
2				0	0	0	0
Total Practical/ Sessional/ Audit Course				0	0	0	0
Total				4	0	0	0



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## Part II: Course Structure & Semester wise Credit Distribution

### First Semester (First Year)

#### Mandatory Induction Program- 3 Weeks Duration

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M101	Mathematics-I	3	1	0	4
2	BS	BS-PH101	Physics	3	1	0	4
3	ES	ES-CS101	Programming for Problem Solving	3	0	0	3
4	HM	HM-HU103	Inculcation of Human Values and Professional Ethics (Mulya Prava)	2	0	0	2
Total Theory				11	2	0	13
Practical/ Sessional/ Audit Course							
1	BS	BS-PH191	Physics Laboratory	0	0	3	1.5
2	ES	ES-CS191	Programming for Problem Solving Laboratory	0	0	4	2
3	ES	ES-ME191	Engineering Graphics and Design	0	0	4	2
4	AU	AU171	NSS/NCC	2	0	0	0
Total Practical/ Sessional/ Audit Course				2	0	11	5.5
Total of First Semester				13	2	11	18.5

### Second Semester (First Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M201	Mathematics-II	3	1	0	4
2	BS	BS-CH201	Chemistry	3	0	0	3
3	ES	ES-EE201	Basic Electrical and	2	1	0	3





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			Electronics Engineering				
4	HM	HM-HU201	Communication Skill (Jeevan Kaushal-I)	2	0	0	2
5	HM	HM-HU202	Introduction to Indian Knowledge System (Indian Knowledge System-I)	2	0	0	2
<i>Total Theory</i>				<b>12</b>	<b>2</b>	<b>0</b>	<b>14</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	BS	BS-CH291	Chemistry Laboratory	0	0	3	1.5
2	ES	ES-EE291	Basic Electrical and Electronics Engineering Laboratory	0	0	4	2
3	ES	ES-ME292	Workshop/Manufacturing Practices	0	0	4	2
4	HM	HM-HU291	Communication Skill Laboratory	0	0	2	1
5	PW	PW-BS281	Ideation Laboratory	0	0	2	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>15</b>	<b>7.5</b>
<b>Total of Second Semester</b>				<b>12</b>	<b>2</b>	<b>15</b>	<b>21.5</b>

Third Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-CS301	Data Structures and Algorithms	3	1	0	4
2	PC	PC-CS(D)301	Introduction to Data Science	3	0	0	3
3	ES	ES-EC301	Digital Electronics	3	0	0	3
4	BS	BS-M301	Mathematics -III	3	0	0	3
5	BS	BS-M303	Vedic Math (Indian Knowledge System-II)	2	0	0	2
6	HM	HM-HU301	Universal Human Values-II (Jeevan Kaushal-IV)	2	0	0	2
Total Theory				16	1	0	17
Practical/ Sessional/ Audit Course							
1	PC	PC-CS391	Data Structures Laboratory	0	0	4	2
2	PC	PC-CS392	Python for Problem Solving	0	0	4	2



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			Laboratory				
3	ES	ES-EC391	Digital Electronics Laboratory	0	0	4	2
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>12</b>	<b>6</b>
<b>Total of Third Semester</b>				<b>16</b>	<b>1</b>	<b>12</b>	<b>23</b>

## Fourth Semester (Second Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-CS401	Discrete Mathematics	3	0	0	3
2	PC	PC-CS402	Computer Organization and Architecture	3	0	0	3
3	PC	PC-CS403	Design and Analysis of Algorithms	3	0	0	3
4	PC	PC-CS404	Operating Systems	3	0	0	3
5	PC	PC-CS(D)401	Introduction to AI	2	0	0	2
6	BS	BS-M403	Basics of Indian Astronomy (Indian Knowledge System-III)	2	0	0	2
Total Theory				16	0	0	16
Practical/ Sessional/ Aduit Course							
1	PC	PC-CS493	Algorithms Laboratory	0	0	4	2
2	PC	PC-CS494	Operating Systems Laboratory	0	0	3	1.5
3	PC	PC-CS(D)492	Data Visualization Laboratory	0	0	3	1.5
4	PW	PW-CS481	Mini Project	0	0	4	2
Total Practical/ Sessional/ Audit Course				0	0	14	7
Total of Fourth Semester				16	0	14	23

## Fifth Semester (Third Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	



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Theory							
1	PC	PC-CS501	Object-oriented Programming	3	0	0	3
2	PC	PC-CS(D)501	Machine Learning	3	1	0	4
3	PC	PC-CS(D)502	Computer Networks	3	0	0	3
4	BS	BS-M503	Introduction to Indian Astronomy (Indian Knowledge System-IV)	2	0	0	2
5	HM	HM-HU503	Leadership and Management Skills (Jeevan Kaushal-III)	2	0	0	2
Total Theory				13	1	0	14
Practical/ Sessional/ Audit Course							
1	PC	PC-CS591	Object-oriented Programming Laboratory	0	0	3	1.5
2	PC	PC-CS(D)591	Machine Learning Laboratory	0	0	4	2
3	PC	PC-CS(D)592	Computer Networks Laboratory	0	0	3	1.5
4	HM	HM-HU571	Aptitude Skill Development - I	1	0	0	1
Total Practical/ Sessional/ Audit Course				1	0	10	6
Total of Fifth Semester				14	1	10	20

Sixth Semester (Third Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-CS601	Database Management System	3	0	0	3
2	PC	PC-CS(D)601	Software Engineering	3	0	0	3
3	PC	PC-CS(D)602	Optimization Techniques	3	0	0	3
4	PC	PC-CS(D)603	Formal language and Automata Theory	3	0	0	3
5	HM	HM-HU603	Professional Skill (Jeevan Kaushal-II)	1	0	0	1
Total Theory				13	0	0	13



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Practical/ Sessional/ Audit Course							
1	PC	PC-CS691	Database Management System Laboratory	0	0	4	2
2	PC	PC-CS(D)694	Cloud Management Laboratory	0	0	4	2
3	PW	PW-CS681	Project-I	0	0	4	2
4	HM	HM-HU671	Aptitude Skill Development - II	1	0	0	1
5	HM	HM-HU693	Professional Skill (Jeevan Kaushal-II) Laboratory	0	0	2	1
6	AU	AU671	Environmental Science	2	0	0	0
Total Practical/ Sessional/ Audit Course				3	0	14	8
Total of Sixth Semester				16	0	14	21

Seventh Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PE	PE-CS(D)701	Professional Elective - I	3	0	0	3
2	PE	PE-CS(D)702	Professional Elective - II	3	0	0	3
3	OE	OE-XXXXXX	Open Elective - I	3	0	0	3
4	BS	BS-BIO703	Biology for Engineers	2	0	0	2
Total Theory				11	0	0	11
Practical/ Sessional/ Audit Course							
1	PW	PW-CS781	Project-II	0	0	6	3
2	PW	PW-CS782	Summer Internship	0	0	6	3
Total Practical/ Sessional/ Audit Course				0	0	12	6
Total of Seventh Semester				11	0	12	17

Eighth Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PE	PE-CS(D)801	Professional Elective - III	3	0	0	3



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2	OE	OE-XXXXXX	Open Elective - II	3	0	0	3
3	OE	OE-XXXXXX	Open Elective - III	3	0	0	3
4	HM	HM-HU803	Entrepreneurship and Start-ups	2	0	0	2
<i>Total Theory</i>				<b>11</b>	<b>0</b>	<b>0</b>	<b>11</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	PW	PW-CS881	Project-III	0	0	8	4
2	PW	PW-CS882	Comprehensive Viva-Voce	0	0	2	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>10</b>	<b>5</b>
<b>Total of Eighth Semester</b>				<b>11</b>	<b>0</b>	<b>10</b>	<b>16</b>



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## Part III: Specializations and corresponding List of Elective Papers

### A. Specialization: Advanced Intelligent Learning

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VII	PE-CS(D)701A	Professional Elective-I	A. Natural Language Processing B. Neural Network and Deep Learning	3	0	0	3
2	VII	PE-CS(D)702A	Professional Elective-II	A. Computer Vision B. Recommendation System	3	0	0	3
3	VIII	PE-CS(D)801A	Professional Elective-III	A. Generative AI B. Prompt Engineering and Foundation Model	3	0	0	3
Total Theory					9	0	0	9
Practical/ Sessional Course								
Total Practical/ Sessional Course								
Total					9	0	0	9

### B. Specialization: Advanced Data Analysis

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VII	PE-CS(D)701B	Professional Elective-I	A. Big Data Analytics B. Data Science in Bioinformatics	3	0	0	3
2	VII	PE-CS(D)702B	Professional Elective-II	A. Pattern Recognition B. Data Mining and	3	0	0	3



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				Data Warehousing				
3	VIII	PE-CS(D)801B	Professional Elective-III	A. Social Network Analysis B. Time Series Analysis	3	0	0	3
<i>Total Theory</i>					9	0	0	9
<b>Practical/ Sessional Course</b>								
<i>Total Practical/ Sessional Course</i>								
<b>Total</b>					9	0	0	9

## C. Specialization: Smart Computing

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VII	PE-CS(D)701C	Professional Elective-I	A. High Performance Computing B. Advanced Algorithm	3	0	0	3
2	VII	PE-CS(D)702C	Professional Elective-II	A. Compiler Design B. Distributed System	3	0	0	3
3	VIII	PE-CS(D)801C	Professional Elective-III	A. Cryptography and Network Security B. Block chain Technologies	3	0	0	3
Total Theory					9	0	0	9
Practical/ Sessional Course								
Total Practical/ Sessional Course								
Total					9	0	0	9



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## Part IV: List of Open Elective Papers

### Open Elective Papers offered by CSE department

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	V	OE-CS501A	Open Elective-I	Introduction to Python Programming	2	0	0	2
2	VI	OE-CS601A	Open Elective-II	Data Structures and Algorithms	2	0	0	2
3	VII	OE-CS701A	Open Elective-III	Database Management System	2	0	0	2
4	VII	OE-CS701B	Open Elective-IV	Object-oriented Programming	2	0	0	2
5	VIII	OE-CS801A	Open Elective-V	Machine Learning	2	0	0	2
Total Theory					10	0	0	10
Practical/ Sessional Course								
1	V	OE-CS591A	Open Elective-I	Introduction to Python Programming Laboratory	0	0	2	1
2	VI	OE-CS691A	Open Elective-II	Data Structures Laboratory	0	0	2	1
3	VII	OE-CS791A	Open Elective-III	Database Management System Laboratory	0	0	2	1
4	VII	OE-CS791B	Open Elective-IV	Object-oriented Programming Laboratory	0	0	2	1
5	VIII	OE-CS891A	Open Elective-V	Machine Learning Laboratory	0	0	2	1
Total Practical/ Sessional Course					0	0	10	5
Total					10	0	10	15





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## Part V: Curriculum Structure for Minor Degree

### A. Minor Degree in Advanced Web Development

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	IV	MN-CS401A	Fundamentals of Front-end development	4	0	0	4
2	V	MN-CS501A	Server-Side Programming	4	0	0	4
3	VI	MN-CS601A	Advanced Front-end development	4	0	0	4
4	VII	MN-CS701A	Fundamentals of deployment	2	0	0	2
Total Theory				14	0	0	14
Practical/ Sessional Course							
1	IV	MN-CS491A	Fundamentals of Front-end development Laboratory	0	0	2	1
2	V	MN-CS591A	Server-Side Programming Laboratory	0	0	2	1
3	VI	MN-CS691A	Advanced Front-end development Laboratory	0	0	2	1
4	VII	MN-CS791A	Fundamentals of deployment Laboratory	0	0	6	3
Total Practical/ Sessional Course				0	0	12	6
Total				14	0	12	20



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## 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



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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
<b>Total</b>		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 (Jeevan Kaushal-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	2	0	0	2



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			and Professional Ethics (Mulya Prava)				
4	IV	HM-HU401	Leadership Skill and Management (Jeevan Kaushal-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 (Jeevan Kaushal-IV)	2	0	0	2
<i>Total Theory</i>				<b>13</b>	<b>0</b>	<b>0</b>	<b>13</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	I	HM-HU191	Communication Skill Laboratory	0	0	2	1
2	V	HM-HU571	Aptitude Skill Development-I	1	0	0	1
3	V	HM-HU591	Professional Skill (Jeevan Kaushal-II)	1	0	2	2
4	V1	HM-HU671	Aptitude Skill Development-II	1	0	0	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>3</b>	<b>0</b>	<b>4</b>	<b>5</b>
<b>Total</b>				<b>16</b>	<b>0</b>	<b>4</b>	<b>18</b>

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	2	0	0	2



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			Knowledge System -IV)				
<i>Total Theory</i>				<b>23</b>	<b>3</b>	<b>0</b>	<b>26</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	I	BS-CH191	Chemistry Laboratory	0	0	3	1.5
2	II	BS-PH291	Physics Laboratory	0	0	3	1.5
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>6</b>	<b>3</b>
<b>Total</b>				<b>23</b>	<b>3</b>	<b>6</b>	<b>29</b>

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



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## 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
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



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11	VII	PC-IT791	Compiler Design Laboratory	0	0	3	1.5
<i>Total Practical/ Sessional</i>				<b>1</b>	<b>0</b>	<b>33</b>	<b>17.5</b>
<b>Total</b>				<b>34</b>	<b>1</b>	<b>33</b>	<b>51.5</b>

## 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-IT601x	Professional Elective-I	3	0	0	3
2	VI	PE-IT602x	Professional Elective-II	3	0	0	3
3	VII	PE-IT701x	Professional Elective-III	3	0	0	3
4	VIII	PE-IT801x	Professional Elective-IV	3	0	0	3
Total Theory				12	0	0	12
Practical/ Sessional							
1	-	-	-	0	0	0	0
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							
1	-	-	-	0	0	0	0
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							
1	-	-	-	0	0	0	0
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





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<b>Total</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>19</b>
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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							
1	I	AU-271	NSS/NCC	2	0	0	0
2	II	AU-BS371	Environmental Science	2	0	0	0
Total Theory				4	0	0	0
Practical/ Sessional/ Audit							
1	-	-	-	0	0	0	0
Total Practical/ Sessional/ Audit Course				0	0	0	0
Total				4	0	0	0



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## Part II: Course Structure & Semester wise Credit Distribution

First Semester (First Year)							
Mandatory Induction Program- 3 Weeks Duration							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M101	Mathematics-I	3	1	0	4
2	BS	BS-CH101	Chemistry	3	0	0	3
3	ES	ES-EE101	Basic Electrical and Electronics Engineering	2	1	0	3
4	HM	HM-HU101	Communication Skill (Jeevan Kaushal-I)	2	0	0	2
5	HM	HM-HU102	Introduction to Indian Knowledge System (Indian Knowledge System-I)	2	0	0	2
Total Theory				12	2	0	14
Practical/ Sessional/ Audit Course							
1	BS	BS-CH191	Chemistry Laboratory	0	0	3	1.5
2	ES	ES-EE191	Basic Electrical and Electronics Engineering Laboratory	0	0	4	2
3	ES	ES-ME192	Workshop/Manufacturing Practices	0	0	4	2
4	HM	HM-HU191	Communication Skill Laboratory	0	0	2	1
Total Practical/ Sessional/ Audit Course				0	0	13	6.5
Total of First Semester				12	2	13	20.5

Second Semester (First Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M201	Mathematics-II	3	1	0	4
2	BS	BS-PH201	Physics	3	1	0	4



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3	ES	ES-CS201	Programming for Problem Solving	3	0	0	3
4	HM	HM-HU203	Inculcation of Human Values and Professional Ethics (Mulya Prava)	2	0	0	2
5	AU	AU271	NSS/NCC	2	0	0	0
<i>Total Theory</i>				<b>13</b>	<b>2</b>	<b>0</b>	<b>13</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	BS	BS-PH291	Physics Laboratory	0	0	3	1.5
2	ES	ES-CS291	Programming for Problem Solving Laboratory	0	0	4	2
3	ES	ES-ME291	Engineering Graphics and Design	0	0	4	2
4	PW	PW-BS281	Ideation Laboratory	0	0	2	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>13</b>	<b>6.5</b>
<b>Total of Second Semester</b>				<b>13</b>	<b>2</b>	<b>13</b>	<b>19.5</b>

Third Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	ES	ES-EC301	Analog and Digital Electronics	3	0	0	3
2	PC	PC-IT301	Data Structure and Algorithms	3	0	0	3
3	PC	PC-IT302	Computer Organization and Architecture	3	0	0	3
4	BS	BS-M301	Mathematics-III	3	0	0	3
Total Theory				12	0	0	12
Practical/ Sessional/ Audit Course							
1	ES	ES-EC391	Analog and Digital Electronics Laboratory	0	0	3	1.5
2	PC	PC-IT391	Data Structure and Algorithms Laboratory	0	0	3	1.5
3	PC	PC-IT392	Computer Organization and Architecture Laboratory	0	0	3	1.5
4	PC	PC-IT393	IT Workshop using Python	1	0	3	2.5
5	AU	AU-BS371	Environmental Science	2	0	0	0



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Total Practical/ Sessional/ Audit Course	3	0	12	7
Total of Third Semester	15	0	12	19

Fourth Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	ES	ES-IT401	Discrete Mathematics	3	0	0	3
2	PC	PC-IT402	Database Management System	3	0	0	3
3	PC	PC-IT403	Design and Analysis of Algorithms	3	0	0	3
4	PC	PC-IT404	Object Oriented Programming	3	0	0	3
5	BS	BS-M401	Vedic Mathematics (Indian Knowledge System -II)	2	0	0	2
6	HM	HM-HU401	Leadership Skill and Management (Jeevan Kaushal-III)	2	0	0	2
Total Theory				16	0	0	16
Practical/ Sessional/ Audit Course							
1	PC	PC-IT492	Database Management System Laboratory	0	0	3	1.5
2	PC	PC-IT493	Design and Analysis of Algorithms Laboratory	0	0	3	1.5
3	PC	PC-IT494	Object Oriented Programming Laboratory	0	0	3	1.5
4	PW	PW-IT481	Micro Project	0	0	4	2
Total Practical/ Sessional/ Audit Course				0	0	13	6.5
Total of Fourth Semester				19	0	13	22.5

Fifth Semester (Third Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							



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1	PC	PC-IT501	Machine Learning	3	1	0	4
2	PC	PC-IT502	Operating Systems	3	0	0	3
3	PC	PC-IT503	Theory of Computation	3	0	0	3
4	BS	BS-M501	Basics of Indian Astronomy (Indian Knowledge System-III)	2	0	0	2
<i>Total Theory</i>				<b>11</b>	<b>1</b>	<b>0</b>	<b>12</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	PC	PC-IT591	Machine Learning Laboratory	0	0	3	1.5
2	PC	PC-IT592	Operating Systems Laboratory	0	0	3	1.5
3	PW	PW-IT581	Mini Project-I	0	0	4	2
4	HM	HM-HU591	Professional Skill (Jeevan Kaushal-II)	1	0	2	2
5	HM	HM-HU571	Aptitude Skill Development-I	1	0	0	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>2</b>	<b>0</b>	<b>12</b>	<b>8</b>
<b>Total of Fifth Semester</b>				<b>13</b>	<b>1</b>	<b>12</b>	<b>20</b>

Sixth Semester (Third Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-IT601	Software Engineering	3	0	0	3
2	PC	PC-IT602	Computer Networks	3	0	0	3
3	PE	PE-IT601x	Professional Elective-I	3	0	0	3
4	PE	PE-IT602x	Professional Elective-II	3	0	0	3
5	BS	BS-BIO601	Biology for Engineers	2	0	0	2
Total Theory				14	0	0	14
Practical/ Sessional/ Audit Course							
1	PC	PC-IT691	Software Engineering Laboratory	0	0	3	1.5
2	PC	PC-IT692	Computer Networks Laboratory	0	0	3	1.5
3	PW	PW-IT681	Mini Project-II	0	0	4	2



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4	HM	HM-HU671	Aptitude Skill Development-II	1	0	0	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>1</b>	<b>0</b>	<b>10</b>	<b>6</b>
<b>Total of Sixth Semester</b>				<b>15</b>	<b>0</b>	<b>10</b>	<b>20</b>

Seventh Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-IT701	Compiler Design	3	0	0	3
2	PE	PE-IT701x	Professional Elective-III	3	0	0	3
3	OE	OE-xxxxx	Open Elective-I	3	0	0	3
4	HM	HM-HU701	Entrepreneurship and Start-ups	3	0	0	3
Total Theory				12	0	0	12
Practical/ Sessional/ Audit Course							
1	PC	PC-IT791	Compiler Design Laboratory	0	0	3	1.5
2	PW	PW-IT781	Project-I	0	0	8	4
3	PW	PW-IT782	Industrial Training Evaluation	0	0	0	1
Total Practical/ Sessional/ Audit Course				0	0	11	6.5
Total of Seventh Semester				12	0	11	18.5

Eighth Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PE	PE-EC801x	Professional Elective-IV	3	0	0	3
2	OE	OE-xxxxx	Open Elective-II	3	0	0	3
3	OE	OE-xxxxx	Open Elective-III	3	0	0	3
4	BS	BS-M801	Introduction to Indian Astronomy (Indian Knowledge System -IV)	2	0	0	2
5	HM	HM-HU801	Universal Human Values-II	2	0	0	2



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			(Jeevan Kaushal-IV)				
<i>Total Theory</i>				<b>13</b>	<b>0</b>	<b>0</b>	<b>13</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	PW	PW-IT881	Project-II	0	0	12	6
2	PW	PW-IT882	Comprehensive Viva Voce	0	0	0	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>12</b>	<b>7</b>
<b>Total of Eighth Semester</b>				<b>13</b>	<b>0</b>	<b>12</b>	<b>20</b>

## Part III: Specializations and corresponding List of Elective Papers

### A. Specialization in AI and ML

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VI	PE-IT601A	Professional Elective-I	Artificial Intelligence	3	0	0	3
2	VI	PE-IT602A	Professional Elective-II	Deep Learning	3	0	0	3
3	VII	PE-IT701A	Professional Elective-III	Natural Language Processing	3	0	0	3
4	VIII	PE-IT801A	Professional Elective-IV	Generative AI	3	0	0	3
Total Theory					12	0	0	12
Practical/ Sessional Course								
1	-	-	-	-	0	0	0	0
Total Practical/ Sessional Course					0	0	0	0
Total					12	0	0	12

### B. Specialization in Data Science

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours	Credits
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					L	T	P	
<b>Theory</b>								
1	VI	PE-IT601B	Professional Elective-I	Introduction to Data Science	3	0	0	3
2	VI	PE-IT602B	Professional Elective-II	Data Mining	3	0	0	3
3	VII	PE-IT701B	Professional Elective-III	Big Data Computing	3	0	0	3
4	VIII	PE-IT801B	Professional Elective-IV	Exploratory Data Analytics and Visualization	3	0	0	3
<i>Total Theory</i>					<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>
<b>Practical/ Sessional Course</b>								
1	-	-	-	-	0	0	0	0
<i>Total Practical/ Sessional Course</i>					<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>					<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>

C. Specialization in Cyber Security								
Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VI	PE-IT601C	Professional Elective-I	Introduction to Cyber Security	3	0	0	3
2	VI	PE-IT602C	Professional Elective-II	Cryptography and Network Security	3	0	0	3
3	VII	PE-IT701C	Professional Elective-III	Cyber Law and Security Policy	3	0	0	3
4	VIII	PE-IT801C	Professional Elective-IV	Blockchain and its Applications	3	0	0	3
Total Theory					12	0	0	12
Practical/ Sessional Course								
1	-	-	-	-	0	0	0	0
Total Practical/ Sessional Course					0	0	0	0
Total					12	0	0	12





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## Part IV: List of Open Elective Papers

### Open Elective Papers offered by IT department

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	V	OE-IT501	Open Elective-I	Object Oriented Programming using Java	2	0	2	3
2	VI	OE-IT601A	Open Elective-II	Machine Learning in Engineering Applications	2	0	2	3
3		OE-IT601B		Introduction to AI and Soft Computing	2	0	2	3
4	VII	OE-IT701A	Open Elective-III	Soft Computing	3	0	0	3
5		OE-IT701B		Database Management System	2	0	2	3
6		OE-IT701C		AI and Soft Computing	2	0	2	3
7		OE-IT701D		Cyber Law and Security Policy	3	0	0	3
8	VIII	OE-IT801B	Open Elective-IV	E-Commerce	3	0	0	3
9		OE-IT801C		Augmented Reality and Virtual Reality	3	0	0	3
Total Theory and Practical					22	0	10	27
Total					22	0	10	27

## Part V: Curriculum Structure for Minor Degree

### A. Minor Degree in Software Development

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	IV	MN-IT401A	E-commerce and ERP	3	0	0	3



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2	V	MN-IT501A	Multimedia Applications	3	0	0	3
3	VI	MN-IT601A	Android App Development	3	0	0	3
4	VII	MN-IT701A	Internet Technology Laboratory	3	0	0	3
5	VIII	MN-IT801A	Software Project Management	3	0	0	3
<i>Total Theory</i>				<b>15</b>	<b>0</b>	<b>0</b>	<b>15</b>
<b>Practical/ Sessional Course</b>							
1	V	MN-IT591A	Multimedia Applications Laboratory	0	0	2	1
2	VI	MN-IT691A	Android App Development Laboratory	0	0	2	1
3	VII	MN-IT791A	Internet Technology Laboratory	0	0	2	1
4	VIII	MN-PW881A	Project	0	0	4	2
<i>Total Practical/ Sessional Course</i>				<b>0</b>	<b>0</b>	<b>10</b>	<b>5</b>
<b>Total</b>				<b>15</b>	<b>0</b>	<b>10</b>	<b>20</b>

## B. Minor Degree in Smart Computing

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	IV	MN-IT401B	Distributed Computing	3	0	0	3
2	V	MN-IT501B	Soft Computing	3	0	0	3
3	VI	MN-IT601B	Computer Vision	3	0	0	3
4	VII	MN-IT701B	Cloud Computing	3	0	0	3
5	VIII	MN-IT801B	Internet of Things	3	0	0	3
Total Theory				15	0	0	15
Practical/ Sessional Course							
1	V	MN-IT591B	Soft Computing Laboratory	0	0	2	1
2	VI	MN-IT691B	Computer Vision Laboratory	0	0	2	1
3	VII	MN-IT791B	Cloud Computing Laboratory	0	0	2	1
4	VIII	MN-PW881B	Project	0	0	4	2



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Total Practical/ Sessional Course				0	0	10	5
Total				15	0	10	20
C. Minor Degree in AI and ML (For other departmental students only)							
Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	IV	MN-IT401C	Introduction to Data Science	3	0	0	3
2	V	MN-IT501C	Machine Learning	3	0	0	3
3	VI	MN-IT601C	Image and Vision Computing	3	0	0	3
4	VII	MN-IT701C	Deep Learning	3	0	0	3
5	VIII	MN-IT801C	Applications of AI	3	0	0	3
Total Theory				15	0	0	15
Practical/ Sessional Course							
1	V	MN-IT591C	Machine Learning Laboratory	0	0	2	1
2	VI	MN-IT691C	Image and Vision Computing Laboratory	0	0	2	1
3	VII	MN-IT791C	Deep Learning Laboratory	0	0	2	1
4	VIII	MN-PW881C	Project	0	0	4	2
Total Practical/ Sessional Course				0	0	10	5
Total				15	0	10	20



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## Open Elective Papers offered by other departments for IT students

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VII	OE-BS701	Open Elective-I	Operation Research and Optimizing Techniques	3	0	0	3
		OE-EE701C		Automation and Control Engineering				
		OE-EC701C		5G Communication				
2	VIII	OE-BS801B	Open Elective-II	Statistical Methods	3	0	0	3
		OE-EE801C		Electric Vehicles				
		OE-EC801A		Digital Signal Processing				
3	VIII	OE-BS801C	Open Elective-III	Fuzzy Theory and its applications	3	0	0	3
		OE-EE801D		Robotics and Automation				
		OE-EC801B		VLSI Design				
Total Theory and Practical					9	0	0	9
Total					9	0	0	9



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## 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



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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
<b>Total</b>		<b>160</b>	<b>160</b>

## 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 (Jeevan Kaushal-I)	2	0	0	2



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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 (Mulya Prava)	2	0	0	2
4	IV	HM-HU401	Leadership Skill and Management (Jeevan Kaushal-III)	2	0	0	2
5	V	HM-HU571	Aptitude Skill Development-I	1	0	0	1
6	VI	HM-HU671	Aptitude Skill Development-II	1	0	0	1
7	VIII	HM-HU801	Universal Human Value-II (Jeevan Kaushal-IV)	2	0	0	2
8				0	0	0	0
<i>Total Theory</i>				<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	I	HM-HU191	Communication Skill Laboratory (Jeevan Kaushal-I)	0	0	2	1
2	V	HM-HU591	Professional Skill (Jeevan Kaushal-II)	1	0	2	2
3				0	0	0	0
<i>Total Practical/ Sessional/ Audit Course</i>				<b>1</b>	<b>0</b>	<b>4</b>	<b>3</b>
<b>Total</b>				<b>13</b>	<b>0</b>	<b>4</b>	<b>15</b>

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



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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
<i>Total Theory</i>				<b>20</b>	<b>3</b>	<b>0</b>	<b>23</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	I	BS-CH191	Chemistry Laboratory	0	0	3	1.5
2	II	BS-PH291	Physics Laboratory	0	0	3	1.5
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>6</b>	<b>3</b>
<b>Total</b>				<b>20</b>	<b>3</b>	<b>6</b>	<b>26</b>

## 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
5				0	0	0	0
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
	III	ES-EC391	Numerical Techniques Laboratory	0	0	2	1





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5	IV	AU-EC492	Idea Laboratory	2	0	4	0
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>20</b>	<b>9</b>
<b>Total</b>				<b>9</b>	<b>1</b>	<b>20</b>	<b>19</b>

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



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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
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>28</b>	<b>14</b>
<b>Total</b>				<b>45</b>	<b>0</b>	<b>28</b>	<b>58</b>

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							
1				0	0	0	0
2				0	0	0	0



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<i>Total Practical/ Sessional</i>	0	0	0	0
<b>Total</b>	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	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
5				0	0	0	0
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							
1				0	0	0	0
2				0	0	0	0
3				0	0	0	0
4				0	0	0	0
5				0	0	0	0
Total Theory				0	0	0	0
Practical/ Sessional							
1	II	PW-BS281	Ideation Laboratory	0	0	2	1



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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
9				0	0	0	0
10				0	0	0	0
				0	0	0	0
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>34</b>	<b>18</b>
<b>Total</b>				<b>0</b>	<b>0</b>	<b>34</b>	<b>18</b>

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



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## Part II: Course Structure & Semester wise Credit Distribution

First Semester (First Year)							
Mandatory Induction Program- 3 Weeks Duration							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M101	Mathematics-I	3	1	0	4
2	BS	BS-CH101	Chemistry	3	0	0	3
3	ES	ES-EE101	Basic Electrical and Electronics Engineering	2	1	0	3
4	HM	HM-HU101	Communication Skill (Jeevan Kaushal-I)	2	0	0	2
5	HM	HM-HU102	Introduction to Indian Knowledge System (Indian Knowledge System-I)	2	0	0	2
Total Theory				12	2	0	14
Practical/ Sessional/ Audit Course							
1	BS	BS-CH191	Chemistry Laboratory	0	0	3	1.5
2	ES	ES-EE191	Basic Electrical and Electronics Engineering Laboratory	0	0	4	2
3	ES	ES-ME192	Workshop/Manufacturing Practices	0	0	4	2
4	HM	HM-HU191	Communication Skill Laboratory (Jeevan Kaushal-I)	0	0	2	1
Total Practical/ Sessional/ Audit Course				0	0	11	6.5
Total of First Semester				12	2	11	20.5

Second Semester (First Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M201	Mathematics-II	3	1	0	4
2	BS	BS-PH201	Physics	3	1	0	4



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3	ES	ES-CS201	Programming for Problem Solving	3	0	0	3
4	HM	HM-HU203	Inculcation of Human Values and Professional Ethics (Mulya Prava)	2	0	0	2
<i>Total Theory</i>				<b>11</b>	<b>2</b>	<b>0</b>	<b>13</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	AU	AU271	NSS/NCC	2	0	0	0
2	BS	BS-PH291	Physics Laboratory	0	0	3	1.5
3	ES	ES-CS291	Programming for Problem Solving Laboratory	0	0	4	2
4	ES	ES-ME291	Engineering Graphics & Design	0	0	4	2
5	PW	PW-BS281	Ideation Laboratory	0	0	2	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>2</b>	<b>0</b>	<b>13</b>	<b>6.5</b>
<b>Total of Second Semester</b>				<b>13</b>	<b>2</b>	<b>13</b>	<b>19.5</b>

Third Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
2	PC	PC-EC301	Electronic Devices	3	0	0	3
3	PC	PC-EC302	Analog Electronic Circuits	3	0	0	3
4	PC	PC-EC303	Signals and Systems	3	0	0	3
5	PC	PC-EC304	Network Theory	3	0	0	3
6	PC	PC-EC305	Data Structure and Algorithm	3	0	0	3
7	ES	ES-EC301	Numerical Techniques	2	0	0	2
Total Theory				17	0	0	17
Practical/ Sessional/ Audit Course							
1	AU	AU-BS371	Environmental Science	2	0	0	0
2	PC	PC-EC391	Electronic Devices Laboratory	0	0	2	1



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3	PC	PC-EC392	Analog Electronic Circuits Laboratory	0	0	2	1
4	PC	PC-EC394	Network Theory Laboratory	0	0	2	1
5	PC	PC-EC395	Data Structure Laboratory	0	0	2	1
6	ES	ES-EC391	Numerical Techniques Laboratory	0	0	2	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>2</b>	<b>0</b>	<b>10</b>	<b>5</b>
<b>Total of Third Semester</b>				<b>19</b>	<b>0</b>	<b>10</b>	<b>22</b>

Fourth Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-EC401	Digital System Design	3	0	0	3
2	PC	PC-EC402	Microprocessor and Microcontrollers	3	0	0	3
3	PC	PC-EC403	Control Systems	3	0	0	3
4	ES	ES-EC401	Design Thinking	2	0	0	2
5	BS	BS-M401	Vedic Mathematics (Indian Knowledge System-II)	2	0	0	2
6	BS	BS-BIO401	Biology for Engineers	2	0	0	2
7	HM	HM-HU401	Leadership Skill and Management (Jeevan Kaushal-III)	2	0	0	2
Total Theory				17	0	0	17
Practical/ Sessional/ Audit Course							
1	PC	PC-EC491	Digital System Design Laboratory	0	0	2	1
2	PC	PC-EC492	Microprocessor and Microcontrollers Laboratory	0	0	2	1
3	PC	PC-EC493	Control Systems Laboratory	0	0	2	1
4	PW	PW-EC481	Micro Project	0	0	4	2
5	AU	AU-EC492	Idea Laboratory	2	0	4	0
Total Practical/ Sessional/ Audit Course				2	0	14	5
Total of Fourth Semester				19	0	14	22





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## Fifth Semester (Third Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-EC501	Analog and Digital Communication	3	0	0	3
2	PC	PC-EC502	Electromagnetic Waves and Transmission Line	3	0	0	3
3	PC	PC-EC503	Computer Architecture	3	0	0	3
4	PE	PE-EC501	Professional Elective-I	3	0	0	3
5	OE	OE-xxxxx	Open Elective -I	2	0	0	2
6	BS	BS-M501	Basics of Indian Astronomy (Indian Knowledge System-III)	2	0	0	2
Total Theory				16	0	0	16
Practical/ Sessional/ Audit Course							
1.	HM	HM-HU571	Aptitude Skill Development-I	1	0	0	1
2	PC	PC-EC591	Analog and Digital Communication Laboratory	0	0	2	1
3	PC	PC-EC592	Electromagnetic Waves and Transmission Line Laboratory	0	0	2	1
4	PC	PC-EC593	Computer Architecture Laboratory	0	0	2	1
5	OE	OE-xxxxx	Open Elective -I Laboratory	0	0	2	1
6	HM	HM-HU591	Professional Skill (Jeevan Kaushal-II)	1	0	2	2
Total Practical/ Sessional/ Audit Course				1	0	10	7
Total of Fifth Semester				18	0	10	23

## Sixth Semester (Third Year)

	Category		Course Name	Contact Hours	Credits
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Sl. No.		Course Code		L	T	P	
<b>Theory</b>							
1	PC	PC-EC601	Computer Networks	3	0	0	3
2	PC	PC-EC602	Embedded System and VLSI Design	3	0	0	3
3	PC	PC-EC603	Operating System	2	0	0	2
4	PC	PC-EC604	Digital Signal Processing	3	0	0	3
5	PE	PE-EC601	Professional Elective-II	3	0	0	3
<i>Total Theory</i>				<b>14</b>	<b>0</b>	<b>0</b>	<b>14</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	HM	HM-HU671	Aptitude Skill Development-II	1	0	0	1
2	PC	PC-EC691	Computer Networks Laboratory	0	0	2	1
3	PC	PC-EC692	Embedded System and VLSI Design Laboratory	0	0	2	1
4	PC	PC-EC693	Operating System Lab	0	0	2	1
5	PC	PC-EC694	Digital Signal Processing Laboratory	0	0	2	1
6	PW	PW-EC681	Mini Project	0	0	6	3
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>14</b>	<b>7</b>
<b>Total of Sixth Semester</b>				<b>15</b>	<b>0</b>	<b>14</b>	<b>22</b>

Seventh Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PE	PE-EC701	Professional Elective-III	3	0	0	3
2	PE	PE-EC702	Professional Elective-IV	3	0	0	3
3	OE	OE-xxxxx	Open Elective-II	2	0	0	2
4	OE	OE-xxxxx	Open Elective-III	3	0	0	3
Total Theory				11	0	0	11
Practical/ Sessional/ Audit Course							
1	PW	PW-EC781	Seminar	0	0	2	1



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2	PW	PW-EC782	Internship	0	0	4	2
3	PW	PW-EC783	Project-I	0	0	4	2
4	OE	OE-xxxxx	Open Elective-II Laboratory	0	0	2	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>12</b>	<b>6</b>
<b>Total of Seventh Semester</b>				<b>11</b>	<b>0</b>	<b>12</b>	<b>17</b>

Eighth Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	OE	OE-xxxxx	Open Elective-IV	2	0	0	2
2	BS	BS-M801	Introduction to Indian Astronomy (Indian Knowledge System-IV)	2	0	0	2
3	HM	HM-HU801	Universal Human Value-II (Jeevan Kaushal-IV)	2	0	0	2
Total Theory				6	0	0	6
Practical/ Sessional/ Audit Course							
1	PW	PW-EC881	Project-II	0	0	12	6
2	PW	PW-EC882	Comprehensive Viva Voce	0	0	0	1
3.	OE	OE-xxxxx	Open Elective-IV Laboratory	0	0	2	1
Total Practical/ Sessional/ Audit Course				0	0	14	8
Total of Eighth Semester				6	0	14	14



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## Part III: Specializations and corresponding List of Elective Papers

Specialization: Microelectronics and VLSI								
Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	V	PE-EC501A	Professional Elective-I	A. Analog VLSI Circuits B. Advanced Electronic Devices	3	0	0	3
2	VI	PE-EC601A	Professional Elective-II	A. Digital VLSI B. Microelectronics and Optoelectronic Devices	3	0	0	3
3	VII	PE-EC701A	Professional Elective-III	A. Low Power VLSI B. Processor Architecture for VLSI Design	3	0	0	3
4	VII	PE-EC702A	Professional Elective-IV	A. Analog and Mixed Signal IC Design B. VLSI Design and Testing	3	0	0	3
Total Theory					12	0	0	12
Practical/ Sessional Course								
1					0	0	0	0
2					0	0	0	0
Total Practical/ Sessional Course					0	0	0	0
Total					12	0	0	12

Specialization: Embedded System Design								
Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	V	PE-EC501B	Professional Elective-I	A. Sensors and Transducers	3	0	0	3



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				B. Advanced Microcontroller and Its Applications C. Photonics				
2	VI	PE-EC601B	Professional Elective-II	A. FPGA based System Design B. Image Processing and its applications	3	0	0	3
3	VII	PE-EC701B	Professional Elective-III	A. Introduction to MEMS B. Material Science	3	0	0	3
4	VII	PE-EC702B	Professional Elective-IV	A. Real Time Embedded Systems B. System On Chip (SoC)	3	0	0	3
<i>Total Theory</i>					<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>
<b>Practical/ Sessional Course</b>								
1					0	0	0	0
2					0	0	0	0
<i>Total Practical/ Sessional Course</i>					<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>					<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>

Specialization: Advanced Communication and Signal Processing								
Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	V	PE-EC501C	Professional Elective-I	A. Railway Signal Engineering B. Microwave Engineering C. Photonics	3	0	0	3
2	VI	PE-EC601C	Professional Elective-II	A. Automatic Train Protection System B. Mobile Communication and networks C. Antenna and Radiating System	3	0	0	3
3	VII	PE-EC701C	Professional Elective-III	A. Image and Video Processing	3	0	0	3



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				B. Satellite Communication C. 5G Communication.				
4	VII	PE-EC702C	Professional Elective-IV	A. Fiber Optic Communication B. Wireless Sensor Networks C. Radar and Navigation System	3	0	0	3
<i>Total Theory</i>					<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>
<b>Practical/ Sessional Course</b>								
1					0	0	0	0
2					0	0	0	0
<i>Total Practical/ Sessional Course</i>					<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>					<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>



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## Part IV: List of Open Elective Papers

### Open Elective Papers offered by ECE department

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	V	OE-EC501A	Open Elective-I	Microprocessor and Microcontroller	2	0	0	2
2	V	OE-EC501B		Automotive Embedded System	2	0	0	2
3	V	OE-EC501C		Computer Architecture	2	0	0	2
4	V	OE-EC501D		Railway Signalling System	2	0	0	2
5	VI	OE-EC601A	Open Elective-II	Digital Signal Processing I	2	0	0	2
6	VI	OE-EC601B		Automatic Train Protection System	2	0	0	2
7	VII	OE-EC701A	Open Elective-III	Digital Signal Processing II	2	0	0	2
8	VII	OE-EC701B		Internet of Things	2	0	0	2
9	VII	OE-EC701C		5G Communication	3	0	0	3
10	VII	OE-EC701D		Mechatronics	2	0	0	2
11	VIII	OE-EC801A	Open Elective-IV	Digital Signal Processing	3	0	0	3
12	VIII	OE-EC801B		VLSI Design	3	0	0	3
13	VIII	OE-EC801C		Adhoc Sensor Network	3	0	0	3
Total Theory					30	0	0	30
Practical/ Sessional Course								
1	V	OE-EC591A	Open Elective-I	Microprocessor and Microcontroller Laboratory	0	0	2	1
2	V	OE-EC591B		Automotive Embedded System Lab	0	0	2	1
3	V	OE-EC591C		Computer Architecture Lab	0	0	2	1



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4	VI	OE-EC691A	Open Elective-II	Digital Signal Processing I Laboratory	0	0	2	1
5	VII	OE-EC791A	Open Elective-III	Digital Signal Processing II Laboratory	0	0	2	1
6	VII	OE-EC791B		Internet of Things Laboratory	0	0	2	1
7	VII	OE-EC791D		Mechatronics Laboratory	0	0	2	1
<i>Total Practical/ Sessional Course</i>					<b>0</b>	<b>0</b>	<b>14</b>	<b>7</b>
<b>Total</b>					<b>30</b>	<b>0</b>	<b>14</b>	<b>37</b>





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## Part V: Curriculum Structure for Minor Degree

### A. Minor Degree in IoT

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	III	MN-EC301A	Introduction to Internet of Things	3	0	0	3
2	IV	MN-EC401A	Introduction to Security of Cyber-Physical Systems	3	0	0	3
3	V	MN-EC501A	Ubiquitous Sensing, Computing and Communication	3	0	0	3
4	VI	MN-EC601A	Embedded Systems for IoT	3	0	0	3
5	VI	MN-EC602A	IoT with Arduino, ESP, and Raspberry Pi	3	0	0	3
Total Theory				15	0	0	15
Practical/ Sessional Course							
1	III	MN-EC391A	IoT Lab	0	0	2	1
2	IV	MN-EC491A	Cyber-Physical Systems Laboratory	0	0	2	1
3	V	MN-EC591A	Sensing, Computing and Communication Laboratory	0	0	2	1
4	VI	MN-EC681A	Project	0	0	4	2
Total Practical/ Sessional Course				0	0	10	5
Total				15	0	10	20



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## B. Minor Degree in VLSI Design and Technology

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	III	MN-EC301B	Electronic materials and Devices	3	0	0	3
2	IV	MN-EC401B	Analog VLSI	3	0	0	3
3	V	MN-EC501B	Digital VLSI	3	0	0	3
4	V	MN-EC502B	Introduction to Microfabrication	3	0	0	3
5	VI	MN-EC601B	Low Power VLSI	3	0	0	3
Total Theory				15	0	0	15
Practical/ Sessional Course							
1	IV	MN-EC491B	Analog VLSI Design Laboratory	0	0	2	1
2	V	MN-EC591B	Digital VLSI and Microfabrication Laboratory	0	0	2	1
3	VI	MN-EC681B	Project	0	0	6	3
Total Practical/ Sessional Course				0	0	10	5
Total				15	0	10	20



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## Curriculum for Undergraduate Degree B.Tech. in Electrical 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	12
2	Basic Science Courses	26	32
3	Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.	21	29
4	Professional Core Courses	55	64
5	Professional Elective Courses relevant to chosen specialization/ branch	15	15



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6	Open Elective Courses from other technical and/or emerging subjects	12	9
7	Project Work, Seminar and Internship in Industry or elsewhere	16	15
8	Audit Courses [Environmental Sciences, Induction Training]	0	Non-Credit
<b>Total</b>		<b>160</b>	<b>176</b>

## 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 (Jeevan Kaushal-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	2	0	0	2



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			Professional Ethics (Mulya Prava)				
4	IV	HM-HU401	Leadership and Management Skills (Jeevan Kaushal-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 Values-II (Jeevan Kaushal-IV)	2	0	0	2
8				0	0	0	0
<i>Total Theory</i>				<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	I	HM-HU191	Communication Skill Laboratory	0	0	2	1
2	V	HM-HU591	Professional Skills (Jeevan Kaushal-II)	1	0	2	2
3				0	0	0	0
<i>Total Practical/ Sessional/ Audit Course</i>				<b>1</b>	<b>0</b>	<b>4</b>	<b>3</b>
<b>Total</b>				<b>13</b>	<b>0</b>	<b>4</b>	<b>15</b>

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	III	BS-PH301	Electrical Engineering Materials	3	0	0	3
6	IV	BS-BIO401	Biology for Engineers	2	0	0	2
7	IV	BS-M401	Vedic Mathematics ( Indian Knowledge System II)	2	0	0	2
8	V	BS-M501	Basic of Indian Astronomy (Indian Knowledge System III)	2	0	0	2
9	VIII	BS-M801	Introduction of Indian	2	0	0	2

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



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			Astronomy (Indian Knowledge System IV)				
<i>Total Theory</i>				<b>23</b>	<b>3</b>	<b>0</b>	<b>26</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	I	BS-CH191	Chemistry Laboratory	0	0	3	1.5
2	II	BS-PH291	Physics Laboratory	0	0	3	1.5
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>6</b>	<b>3</b>
<b>Total</b>				<b>23</b>	<b>3</b>	<b>6</b>	<b>29</b>

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-ME301	Engineering Mechanics	3	0	0	3
4	III	ES-EE301	Electrical Engineering Materials	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 & Design	0	0	4	2
	III	ES-CS491	Python Programming	0	0	2	1
				0	0	0	0
Total Practical/ Sessional/ Audit Course				0	0	18	9
Total				11	1	18	21



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## Professional Core Courses

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	III	PC-EE301	Network Analysis	3	1	0	4
2	III	PC-EE302	Electromagnetic Fields Theory	3	0	0	3
3	III	PC-EE303	Analog Electronics	3	0	0	3
4	III	PC-EE304	Digital Electronics	3	0	0	3
5	IV	PC-EE401	Electric Machine-I	3	1	0	4
6	IV	PC-EE402	Analog and Digital Communication	3	0	0	3
7	IV	PC-EE403	Measurements and Instrumentation	3	0	0	3
8	V	PC-EE501	Electric Machine-II	3	1	0	4
9	V	PC-EE502	Power Transmission and Distribution	3	1	0	4
10	V	PC-EE503	Control System	3	0	0	3
11	VI	PC-EE601	Power Electronics	3	1	0	4
12	VI	PC-EE602	Power System Protection and Analysis	3	1	0	4
13	VII	PC-EE701	Electric Drives	3	0	0	3
Total Theory				39	6	0	45
Practical/ Sessional							
1	III	PC-EE391	Network Analysis Laboratory	0	0	2	1
2	III	PC-EE393	Analog and Digital Electronics Laboratory	0	0	2	1
3	IV	PC-EE491	Electric Machine-I Laboratory	0	0	2	1
4	IV	PC-EC493	Electrical and Electronics Measurement Laboratory	0	0	2	1
5	V	PC-EE591	Electric Machine-II Laboratory	0	0	2	1
6	V	PC-EE592	Power Transmission and Distribution Laboratory	0	0	2	1
7	V	PC-EC593	Control System Laboratory	0	0	2	1
8	VI	PC-EE691	Power Electronics Laboratory	0	0	2	1



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9	VI	PC-EE692	Power System Protection and Analysis Laboratory	0	0	2	1
10	VII	PC-EE791	Electric Drives Laboratory	0	0	2	1
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>20</b>	<b>10</b>
<b>Total</b>				<b>39</b>	<b>06</b>	<b>20</b>	<b>55</b>

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-EE601	Professional Elective-I	3	0	0	3
2	VI	PE-EE602	Professional Elective-II	3	0	0	3
3	VII	PE-EE701	Professional Elective-III	3	0	0	3
4	VII	PE-EE702	Professional Elective-IV	3	0	0	3
4	VIII	PE-EE801	Professional Elective-V	3	0	0	3
Total Theory				15	0	0	15
Practical/ Sessional							
1				0	0	0	0
2				0	0	0	0
Total Practical/ Sessional				0	0	0	0
Total				15	0	0	15





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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	V	Based on the papers opted from the list of papers offered by other depts.	Open Elective -I	2	0	0	2
2	VI		Open Elective-II	2	0	0	2
3	VII		Open Elective-III	2	0	0	2
4	VII		Open Elective-IV	2	0	0	2
Total Theory				8	0	0	8
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	VI		Open Elective-II Laboratory	0	0	2	1
3	VII		Open Elective-III Laboratory	0	0	2	1
4	VII		Open Elective- IV Laboratory	0	0	2	1
Total Practical/ Sessional				0	0	8	4
Total				8	0	8	12

## Project Work, Seminar and Internship in Industry or elsewhere

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1				0	0	0	0
2				0	0	0	0
Total Theory				0	0	0	0
Practical/ Sessional							
1	II	PW-BS281	Ideation Laboratory	0	0	2	1
2	IV	PW-EE481	Micro Project	0	0	4	2
3	VI	PW-EE681	Mini Project	0	0	4	2
4	VII	PW-EE781	Electrical System Design Laboratory-I	1	0	2	2



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5	VII	PW-EE782	Project Stage-I	0	0	6	3
6	VII	PW-EE783	Summer Internship II Evaluation	0	0	2	1
7	VIII	PW-EE881	Electrical System Design Laboratory-II	0	0	2	1
8	VIII	PE-EE882	Project Stage-II	0	0	8	4
9	VIII	PW-EC882	Comprehensive Viva Voce	0	0	0	1
<i>Total Practical/ Sessional</i>				<b>1</b>	<b>0</b>	<b>30</b>	<b>16</b>
<b>Total</b>				<b>1</b>	<b>0</b>	<b>30</b>	<b>16</b>

Audit Courses [Environmental Sciences, Induction Training etc.]							
Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1							
2							
Total Theory				0	0	0	0
Practical/ Sessional/ Audit							
1	II	AU271	NSS/NCC	2	0	0	2
2	IV	AU-BS471	Environmental Science	2	0	0	2
Total Practical/ Sessional/ Audit Course				4	0	0	4
Total				4	0	0	4



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## Part II: Course Structure & Semester wise Credit Distribution

### First Semester (First Year)

#### Mandatory Induction Program- 3 Weeks Duration

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M101	Mathematics-I	3	1	0	4
2	BS	BS-CH101	Chemistry	3	0	0	3
3	ES	ES-EE101	Basic Electrical and Electronics Engineering	2	1	0	3
4	HM	HM-HU101	Communication Skill (Jeevan Kaushal-I)	2	0	0	2
5	HM	HM-HU102	Introduction to Indian Knowledge System (Indian Knowledge System-I)	2	0	0	2
Total Theory				12	2	0	14
Practical/ Sessional/ Audit Course							
1	BS	BS-CH191	Chemistry Laboratory	0	0	3	1.5
2	ES	ES-EE191	Basic Electrical and Electronics Engineering Laboratory	0	0	4	2
3	ES	ES-ME192	Workshop/Manufacturing Practices	0	0	4	2
4	HM	HM-HU191	Communication Skill Laboratory	0	0	2	1
Total Practical/ Sessional/ Audit Course				0	0	13	6.5
Total of First Semester				12	2	13	20.5

### Second Semester (First Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M201	Mathematics-II	3	1	0	4
2	BS	BS-PH201	Physics	3	1	0	4



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3	ES	ES-CS201	Programming for Problem Solving	3	0	0	3
4	HM	HM-HU203	Inculcation of Human Values and Professional Ethics (Mulya Prava)	2	0	0	2
<i>Total Theory</i>				<b>11</b>	<b>2</b>	<b>0</b>	<b>13</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	BS	BS-PH291	Physics Laboratory	0	0	3	1.5
2	ES	ES-CS291	Programming for Problem Solving Laboratory	0	0	4	2
3	ES	ES-ME291	Engineering Graphics and Design	0	0	4	2
4	PW	PW-BS281	Ideation Laboratory	0	0	2	1
5	AU	AU271	NCC/NSS	2	0	0	0
<i>Total Practical/ Sessional/ Audit Course</i>				<b>2</b>	<b>0</b>	<b>13</b>	<b>6.5</b>
<b>Total of Second Semester</b>				<b>13</b>	<b>2</b>	<b>13</b>	<b>19.5</b>

Third Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	ES	ES-ME301	Engineering Mechanics	3	0	0	3
2	ES	ES-EE301	Electrical Engineering Materials	3	0	0	3
3	PC	PC-EE301	Network Analysis	3	1	0	4
4	PC	PC-EE302	Electromagnetic Fields Theory	3	0	0	3
5	PC	PC-EE303	Analog Electronics	3	0	0	3
6	PC	PC-EE304	Digital Electronics	3	0	0	3
Total Theory				18	1	0	19
Practical/ Sessional/ Audit Course							
1	PC	PC-EE391	Network Analysis Laboratory	0	0	2	1
2	PC	PC-EE393	Analog and Digital Electronics Laboratory	0	0	2	1
3	AU	AU-BS471	Environmental Science	2	0	0	0



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Total Practical/ Sessional/ Audit Course				2	0	4	2
Total of Third Semester				20	1	4	21
Fourth Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	HM	HM-HU401	Leadership and Management Skills (Jeevan Kaushal-III)	2	0	0	2
2	BS	BS-BIO401	Biology for Engineers	2	0	0	2
3	BS	BS-M401	Vedic Mathematics ( Indian Knowledge System II)	2	0	0	2
4	PC	PC-EE401	Electric Machine-I	3	1	0	4
5	PC	PC-EE402	Analog and Digital Communication	3	0	0	3
6	PC	PC-EE403	Measurements and Instrumentation	3	0	0	3
Total Theory				15	1	0	16
Practical/ Sessional/ Audit Course							
1	PC	PC-EE491	Electric Machine-I Laboratory	0	0	2	1
2	PC	PC-EE493	Measurements and Instrumentation Laboratory	0	0	2	1
3	ES	ES-CS491	Python Programming	0	0	2	1
4	PW	PW-EE481	Micro Project	0	0	4	2
5	PW	PW-EE482	Summer Internship I	0	0	0	0
Total Practical/ Sessional/ Audit Course				0	0	10	5
Total of Fourth Semester				15	1	10	21

<b>Fifth Semester (Third Year)</b>							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	



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Theory							
1	BS	BS-M501	Basic of Indian Astronomy (Indian Knowledge System III)	2	0	0	2
2	PC	PC-EE501	Electric Machine-II	3	1	0	4
3	PC	PC-EE502	Power Transmission and Distribution	3	1	0	4
4	PC	PC-EE503	Control System	3	0	0	3
5	OE	OE-XXXXX	Open Elective-I	2	0	0	2
Total Theory				13	2	0	15
Practical/ Sessional/ Audit Course							
1	HM	HM-HU591	Professional Skills	1	0	2	2
2	PC	PC-EE591	Electric Machine-II Laboratory	0	0	2	1
3	PC	PC-EE592	Power Transmission and Distribution Laboratory	0	0	2	1
4	PC	PC-EE593	Control System Laboratory	0	0	2	1
5	OE	OE-XXXXX	Open Elective-I Laboratory	1	0	0	1
6	HM	HM-HU571	Aptitude Skill Development-I	1	0	0	1
Total Practical/ Sessional/ Audit Course				3	0	8	7
Total of Fifth Semester				16	2	8	22

Sixth Semester (Third Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-EE601	Power Electronics	3	1	0	4
2	PC	PC-EE602	Power System Protection and Analysis	3	1	0	4
3	PE	PE-EE601	Professional Elective-I	3	0	0	3
4	PE	PE-EE602	Professional Elective-II	3	0	0	3
5	OE	OE-XXXXX	Open Elective-II	2	0	0	2
Total Theory				14	2	0	16
Practical/ Sessional/ Audit Course							
1	PC	PC-EE691	Power Electronics	0	0	2	1



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			Laboratory				
2	PC	PC-EE692	Power System Protection and Analysis Laboratory	0	0	2	1
3	OE	OE-XXXXX	Open Elective-II Laboratory	0	0	2	1
4	PW	PW-EE681	Mini Project	0	0	4	2
5	HM	HM-HU671	Aptitude Skill Development-II	1	0	0	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>1</b>	<b>0</b>	<b>10</b>	<b>6</b>
<b>Total of Sixth Semester</b>				<b>15</b>	<b>2</b>	<b>10</b>	<b>22</b>

Seventh Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-EE701	Electric Drives	3	0	0	3
2	PE	PE-EE701	Professional Elective-III	3	0	0	3
3	PE	PE-EE702	Professional Elective-IV	3	0	0	3
4	OE	OE-XXXXX	Open Elective-III	2	0	0	2
5	OE	OE-XXXXX	Open Elective-IV	2	0	0	2
Total Theory				13	0	0	13
Practical/ Sessional/ Audit Course							
1	PC	PC-EE791	Electric Drives Laboratory	0	0	2	1
2	OE	OE-XXXXX	Open Elective-III Laboratory	0	0	2	1
3		OE-XXXXX	Open Elective-IV Laboratory	0	0	2	1
3	PW	PW-EE781	Electrical System Design Laboratory-I	1	0	2	1
4	PW	PW-EE782	Project Stage-I	0	0	6	3
5	PW	PW-EE783	Summer Internship Evaluation	0	0	2	1
Total Practical/ Sessional/ Audit Course				1	0	16	8
Total of Seventh Semester				14	0	16	21



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Eighth Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	HM	HM-HU 801	Universal Human Values-II (Jeevan Kaushal-IV)	2	0	0	2
2	BS	BS-M801	Introduction of Indian Astronomy ( Indian Knowledge System IV)	2	0	0	2
3	PE	PE-EE801	Professional Elective-V	3	0	0	3
Total Theory				7	0	0	7
Practical/ Sessional/ Audit Course							
1	PW	PW-EE881	Electrical System Design Laboratory-II	0	0	2	1
2	PW	PW-EE882	Project stage-II	0	0	8	4
3	PW	PW-EE883	Comprehensive Viva Voce	0	0	0	1
Total Practical/ Sessional/ Audit Course				0	0	10	6
Total of Eighth Semester				7	0	10	13





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## Part III: Specializations and corresponding List of Elective Papers

Specialization: Power System								
Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VI	PE-EE601A	Professional Elective-I	HVDC and EHVAC	3	0	0	3
2	VI	PE-EE602A	Professional Elective-II	Smart Grid Technology	3	0	0	3
3	VII	PE-EE701A	Professional Elective-III	A. Power System Operation & Control B. Computer Aided Power System Analysis	3	0	0	3
4	VII	PE-EE702A	Professional Elective-IV	A. Modeling and Simulation of Modern Power Systems B. Power Generation and Economics	3	0	0	3
5	VIII	PE-EE801A	Professional Elective-V	A. Power Quality and Deregulation B. Energy Management and Audit	3	0	0	3
Total Theory					15	0	0	15
Practical/ Sessional Course								
1					0	0	0	0
2					0	0	0	0
Total Practical/ Sessional Course					0	0	0	0
Total					15	0	0	15



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Specialization: Control and Automation								
Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VI	PE-EE601B	Professional Elective-I	Digital Control	3	0	0	3
2	VI	PE-EE602B	Professional Elective-II	Advanced Control System	3	0	0	3
3	VII	PE-EE701B	Professional Elective-III	Control System Design	3	0	0	3
4	VII	PE-EE702B	Professional Elective-IV	A. Industrial Automation and Control B. Optimal Control Theory & Applications	3	0	0	3
5	VIII	PE-EE801B	Professional Elective-V	A. Robotic Systems and Applications B. Adaptive Control	3	0	0	3
Total Theory					15	0	0	15
Practical/ Sessional Course								
1					0	0	0	0
2					0	0	0	0
Total Practical/ Sessional Course					0	0	0	0
Total					15	0	0	15

Specialization: Sustainable Energy Engineering								
Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VI	PE-EE601C	Professional Elective-I	Renewable Energy I	3	0	0	3
2	VI	PE-EE602C	Professional Elective-II	Renewable Energy II	3	0	0	3
3	VII	PE-EE701C	Professional Elective-III	Grid Integration of Renewable Energy	3	0	0	3
4	VII	PE-EE702C	Professional	Electric and Hybrid	3	0	0	3



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			Elective-IV	Vehicle				
5	VIII	PE-EE801C	Professional Elective-V	IoT Applications in Renewable Energy Systems	3	0	0	3
<i>Total Theory</i>					<b>15</b>	<b>0</b>	<b>0</b>	<b>15</b>
<b>Practical/ Sessional Course</b>								
1					0	0	0	0
2					0	0	0	0
<i>Total Practical/ Sessional Course</i>					<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>					<b>15</b>	<b>0</b>	<b>0</b>	<b>15</b>



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## Part IV: List of Open Elective Papers

### Open Elective Papers offered by EE department

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VII	OE-EE 701A	Open Elective-I	Renewable Energy	3	0	0	3
2	VIII	OE-EE 801A		Power Electronics	2	0	0	2
3	VII	OE-EE 701B	Open Elective-II	Control System	3	0	0	3
4	VIII	OE-EE 801B		Renewable Energy	3	0	0	3
5	VIII	OE-EE 801C		Electric Vehicle	3	0	0	3
7	VII	OE-EE 701C	Open Elective-III	Automation and Control Engineering	3	0	0	3
8	VIII	OE-EE 801C		Electric Vehicle	3	0	0	3
9	VIII	OE-EE 801D		Robotics and Automation	3	0	0	3
Total Theory					23	0	0	23
Practical/ Sessional Course								
1	VII	OE-EE 791A	Open Elective-I Laboratory	Power Electronics Laboratory	0	0	2	1
Total Practical/ Sessional Course					0	0	2	1
Total					23	0	2	24



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## Part V: Curriculum Structure for Minor Degree

### A. Minor Degree in Power Engineering

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	III	MN-EE301A	Thermal Power Generation	3	0	0	3
2	IV	MN-EE401A	Hydro Power Generation	3	0	0	3
3	V	MN-EE501A	Nuclear Power Generation	3	0	0	3
4	VI	MN-EE601A	Thermal Power Plant Systems	3	0	0	3
5	VII	MN-EE701A	Advance Power Cycles	3	0	0	3
6	VIII	MN-EE801A	Electric Power Automation and Utilization	3	0	0	3
Total Theory				18	0	0	18
Practical/ Sessional Course							
1	VIII	MN-EE881A	Project	0	0	4	2
Total Practical/ Sessional Course				0	0	4	2
Total				18	0	4	20

### B. Minor Degree in High Voltage Engineering

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	III	MN-EE301B	Fundamental of High Voltage Engineering	3	0	0	3
2	IV	MN-EE401B	Extra High Voltage Power Transmission	3	0	0	3
3	V	MN-EE501B	Physics of Dielectrics	3	0	0	3
4	VI	MN-EE601B	Condition monitoring of High Voltage Equipment	3	0	0	3
5	VII	MN-EE701B	High Voltage Testing Techniques	3	0	0	3
6	VIII	MN-EE801B	High Voltage Power	3	0	0	3



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			Transformers and Circuit Breakers				
<i>Total Theory</i>				<b>18</b>	<b>0</b>	<b>0</b>	<b>18</b>
<b>Practical/ Sessional Course</b>							
1	VIII	MN-EE881	Project	0	0	4	2
<i>Total Practical/ Sessional Course</i>				<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>
<b>Total</b>				<b>18</b>	<b>0</b>	<b>0</b>	<b>20</b>



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## Curriculum for Undergraduate Degree B.Tech. in Mechanical Engineering (w.e.f. AY: 2025-26)

### Part I: Category wise Credit Distribution

#### A. Definition of Credit:

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

#### C. Category wise Credit Distribution:

Sl. No.	Category	Credit Allotted	Credit as per AICTE
1	Humanities and Social Sciences including Management Courses	16	12
2	Basic Science Courses	29	29
3	Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.	24	27
4	Professional Core Courses	59	58
5	Professional Elective Courses relevant to chosen specialization/ branch	12	9
6	Open Elective Courses from other technical and / or emerging subjects	9	9
7	Project Work, Seminar and Internship in Industry or elsewhere	11	16
8	Mandatory Courses [Environmental Sciences, Induction Training, Indian Constitution, Essence of Indian Traditional Knowledge, Aptitude Skill]	Non-Credit	Non-Credit
Total		160	160



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## 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 (Jeevan Kaushal-I)	2	0	0	2
2	I	HM-HU102	Introduction to IKS (Indian Knowledge Systems-I)	2	0	0	2
3	II	HM-HU203	Inculcation of Human Values and Professional Ethics (Mulya Prava)	2	0	0	2
4	IV	HM-HU401	Leadership Skill and Management (Jeevan Kaushal-III)	2	0	0	2
5	V	HM-HU571	Aptitude Skill Development-I	1	0	0	1
6	VI	HM-HU671	Aptitude Skill Development-II	1	0	0	1
7	VIII	HM-HU801	Universal Human Value-II (Jeevan Kaushal-IV)	2	0	0	2
Total Theory				12	0	0	12





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Practical/ Sessional/ Mandatory Course							
1	I	HM-HU191	Language Laboratory	1	0	2	2
2	V	HM-HU591	Professional Skill (Jeevan Kaushal-II)	1	0	2	2
Total Practical/ Sessional/ Mandatory Course				2	0	4	4
Total				14	0	4	16

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	III	BS-M301	Mathematics-III	2	1	0	3
6	IV	BS-BIO401	Biology for Engineers	2	0	0	2
7	IV	BS-M401	Vedic Mathematics (Indian Knowledge Systems-II)	2	0	0	2
8	V	BS-M501	Astronomy (Indian Knowledge Systems-III)	2	0	0	2
9	VIII	BS-M801	Astronomy (Indian Knowledge Systems-IV)	2	0	0	2
Total Theory				22	4	0	26
Practical/ Sessional/ Mandatory Course							
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/ Mandatory Course				0	0	6	3
Total				22	4	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-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-ME301	Materials Engineering	3	0	0	3
4	III	ES-ME302	Engineering Mechanics	3	1	0	4



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5	V	ES-ME501	Operation Research	3	0	0	3
<b>Total Theory</b>				<b>14</b>	<b>2</b>	<b>0</b>	<b>16</b>
<b>Practical/ Sessional</b>							
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
<b>Total Practical/ Sessional</b>				<b>0</b>	<b>0</b>	<b>16</b>	<b>8</b>
<b>Total</b>				<b>14</b>	<b>2</b>	<b>16</b>	<b>24</b>

Professional Core Courses							
Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	III	PC-ME301	Thermodynamics	3	1	0	4
2	III	PC-ME302	Basic Manufacturing Processes	4	0	0	4
3	IV	PC-ME401	Heat Transfer	3	1	0	4
4	IV	PC-ME402	Fluid Mechanics and Hydraulic Machines	3	1	0	4
5	IV	PC-ME403	Strength of Materials	3	1	0	4
6	IV	PC-ME404	Metrology and Instrumentation	4	0	0	4
7	V	PC-ME501	Applied Thermodynamics	3	1	0	4
8	V	PC-ME502	Machine Design-I	3	1	0	4
9	V	PC-ME503	Kinematics and Theory of Machines	3	1	0	4
10	VI	PC-ME601	Manufacturing Technology	4	0	0	4
11	V	PC-ME602	Machine Design-II	3	1	0	4
12	VI	PC-ME602	Production and Operation Management	3	0	0	3
13	VII	PC-ME701	Advanced Manufacturing Technology	3	0	0	3
Total Theory				42	8	0	50
Practical/ Sessional							



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1	III	PC-ME391	Basic Manufacturing Processes Laboratory	0	0	3	1.5
2	IV	PC-ME491	Metrology and Instrumentation Laboratory	0	0	3	1.5
3	V	PC-ME591	Mechanical Engineering Laboratory-I (Design)	0	0	3	1.5
4	V	PC-ME592	Mechanical Engineering Laboratory-II (Thermal and Fluid)	0	0	3	1.5
6	VI	PC-ME691	Mechanical Engineering Laboratory-III (Applied Mechanics and Kinematics)	0	0	3	1.5
7	VII	PC-ME791	Mechanical Engineering Laboratory- IV (Manufacturing)	0	0	3	1.5
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>18</b>	<b>9</b>
<b>Total</b>				<b>42</b>	<b>8</b>	<b>18</b>	<b>59</b>

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-ME601A/B	Elective-I	3	0	0	3
2	VI	PE-ME602A/B	Elective-II	3	0	0	3
3	VII	PE-ME701A/B	Elective-III	3	0	0	3
4	VII	PE-ME702A/B	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	VII	OE-AUE701A/B	Open Elective-I	3	0	0	3
2	VII	OE-AUE801A/B	Open Elective-II	3	0	0	3



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3	VIII	OE-AUE801A/B	Open Elective-III	3	0	0	3
<i>Total Theory</i>				<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>
<b>Practical/ Sessional</b>							
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>				<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>

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-ME481	Project-I	0	0	2	1
3	V	PW-ME581	Internship	0	0	2	1
4	VI	PW-ME681	Project-II	0	0	2	1
5	VII	PW-ME781	Project-III	0	0	4	2
6	VIII	PW-ME881	Project-IV	0	0	8	4
7	VIII	PW-ME882	Comprehensive Viva Voce	0	0	0	1
Total Practical/ Sessional				0	0	20	11
Total				0	0	20	11

Audit Courses [Environmental Sciences, Induction Training etc.]							
Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	I	AU171	VAC / Skill Development Course	2	0	0	0
2	II	AU271	NSS/NCC	2	0	0	0
Total Theory				4	0	0	0



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Practical/ Sessional							
1	III	AU-BS371	Environmental Sciences	2	0	0	0
<i>Total Practical/ Sessional</i>				2	0	0	0
<b>Total</b>				<b>6</b>	<b>0</b>	<b>0</b>	<b>0</b>



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## Part II: Course Structure and Semester wise Credit Distribution

First Semester (First Year)							
Mandatory Induction Program- 3 Weeks Duration							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M101	Mathematics-I	3	1	0	4
2	BS	BS-CH101	Chemistry	3	0	0	3
3	ES	ES-EE101	Basic Electrical and Electronics Engineering	2	1	0	3
4	HM	HM-HU101	Communication Skill (Jeevan Kaushal-I)	2	0	0	2
5	HM	HM-HU102	Introduction to IKS (Indian Knowledge Systems-I)	2	0	0	2
Total Theory				12	2	0	14
Practical/ Sessional							
1	BS	BS-CH191	Chemistry Laboratory	0	0	3	1.5
2	ES	ES-EE191	Basic Electrical and Electronics Engineering Laboratory	0	0	4	2
3	ES	ES-ME192	Workshop/ Manufacturing Practices	0	0	4	2
4	HM	HM-HU191	Communication Laboratory	0	0	2	1
Total Practical/ Sessional				0	0	11	6.5
Total of First Semester				12	2	11	20.5

Second Semester (First Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M201	Mathematics-II	3	1	0	4
2	BS	BS-PH201	Physics	3	1	0	4
3	ES	ES-CS201	Programming for Problem Solving	3	0	0	3
4	HM	HM-HU203	Inculcation of Human Values and Professional Ethics (Mulya Prava)	2	0	0	2



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5	AU	AU271	NSS/NCC	2	0	0	0
<i>Total Theory</i>				<b>13</b>	<b>2</b>	<b>0</b>	<b>13</b>
<b>Practical/ Sessional</b>							
1	BS	BS-PH291	Physics Laboratory	0	0	3	1.5
2	ES	ES-CS291	Programming for Problem Solving Laboratory	0	0	4	2
3	ES	ES-ME291	Engineering Graphics and Design	0	0	4	2
4	PW	PW-BS281	Ideation Laboratory	0	0	2	1
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>13</b>	<b>6.5</b>
<b>Total of Second Semester</b>				<b>13</b>	<b>2</b>	<b>13</b>	<b>19.5</b>

Third Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	ES	ES-ME301	Materials Engineering	3	0	0	3
2	ES	ES-ME302	Engineering Mechanics	3	1	0	4
3	PC	PC-ME301	Thermodynamics	3	1	0	4
4	PC	PC-ME302	Basic Manufacturing Processes	4	0	0	4
5	BS	BS-M301	Mathematics-III	2	1	0	3
6	AU	AU-BS371	Environmental Sciences	2	0	0	0
Total Theory				17	3	0	18
Practical/ Sessional							
1	PC	PC-ME391	Basic Manufacturing Processes Laboratory	0	0	3	1.5
Total Practical/ Sessional				0	0	3	1.5
Total of Third Semester				19	3	3	19.5



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Fourth Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-ME401	Heat Transfer	3	1	0	4
2	PC	PC-ME402	Fluid Mechanics and Hydraulic Machines	3	1	0	4
3	PC	PC-ME403	Strength of Materials	3	1	0	4
4	PC	PC-ME404	Metrology and Instrumentation	4	0	0	4
5	HM	HM-HU401	Leadership Skill and Management (Jeevan Kaushal-III)	2	0	0	2
6	BS	BS-BIO401	Biology for Engineers	2	0	0	2
7	BS	BS-M401	Vedic Mathematics (Indian Knowledge Systems-II)	2	0	0	2
Total Theory				17	3	0	22
Practical/ Sessional							
1	PC	PC-ME491	Metrology and Instrumentation Laboratory	0	0	3	1.5
2	PW	PW-ME481	Project-I	0	0	2	1
Total Practical/ Sessional				0	0	3	2.5
Total of Fourth Semester				19	3	3	24.5

Fifth Semester (Third Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-ME501	Applied Thermodynamics	3	1	0	4
2	PC	PC-ME502	Machine Design-I	3	1	0	4
3	PC	PC-ME503	Kinematics and Theory of Machines	3	1	0	4
4	ES	ES-ME501	Operation Research	3	0	0	3
5	BS	BS-M501	Astronomy (Indian Knowledge Systems-III)	2	0	0	2
6	HM	HM-HU571	Aptitude Skill Development-I	1	0	0	1
Total Theory				15	3	0	18





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Practical/ Sessional							
1	PC	PC-ME591	Mechanical Engineering Laboratory-I (Design)	0	0	3	1.5
2	PC	PC-ME592	Mechanical Engineering Laboratory-II (Thermal and Fluid)	0	0	3	1.5
3	HM	HM-HU591	Professional Skill (Jeevan Kaushal-II)	1	0	2	2
5	PW	PW-ME581	Internship	0	0	2	1
<i>Total Practical/ Sessional</i>				3	0	10	7
<b>Total of Fifth Semester</b>				17	3	10	24

Sixth Semester (Third Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-ME601	Manufacturing Technology	4	0	0	4
2	PC	PC-ME602	Machine Design-II	3	1	0	4
3	PC	PC-ME603	Production and Operation Management	3	0	0	3
4	PE	PE-ME601	Elective-I	3	0	0	3
5	PE	PE-ME602	Elective-II	3	0	0	3
6	HM	HM-HU671	Aptitude Skill Development-II	1	0	0	1
Total Theory				17	1	0	18
Practical/ Sessional							
1	PC	PC-ME691	Mechanical Engineering Laboratory-III (Applied Mechanics and Kinematics)	0	0	3	1.5
4	PW	PW-ME681	Project-II	0	0	2	1
Total Practical/ Sessional				0	0	5	2.5
Total of Sixth Semester				17	1	5	20.5

Seventh Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	



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Theory							
1	PC	PC-ME701	Advanced Manufacturing Technology	3	0	0	3
2	PE	PE-ME701	Elective-III	3	0	0	3
3	PE	PE-ME702	Elective-IV	3	0	0	3
4	OE	OE-xxxx	Open Elective-I	3	0	0	3
<i>Total Theory</i>				<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>
Practical/ Sessional							
1	PC	PC-ME791	Mechanical Engineering Laboratory- IV (Manufacturing)	0	0	3	1.5
2	PW	PW-ME781	Project-III	0	0	6	3
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>9</b>	<b>4.5</b>
<b>Total of Seventh Semester</b>				<b>12</b>	<b>0</b>	<b>9</b>	<b>16.5</b>

Eighth Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	OE	OE-xxxx	Open Elective-II	3	0	0	3
2	OE	OE-xxxx	Open Elective-III	3	0	0	3
3	BS	BS-M801	Astronomy (Indian Knowledge Systems-IV)	2	0	0	2
4	HM	HM-HU801	Univershal Human Value-II (Jeevan Kaushal-IV)	2	0	0	2
Total Theory				10	0	0	10
Practical/ Sessional							
1	PW	PW-ME881	Project-IV	0	0	8	4
2	PW	PW-ME882	Comprehensive Viva Voce	0	0	0	1
Total Practical/ Sessional				0	0	8	5
Total of Eighth Semester				10	0	8	15



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Part III: Specializations and corresponding List of Elective Papers				
Specialization: A. Thermal Engineering				
Sl. No.	Semester	Course Name	Course Code	Course Title
Theory				
1	VI	Professional Elective-I	PE-ME601AA	Internal Combustion Engines and Gas Turbines
			PE-ME601AB	Turbo Machinery
2	VI	Professional Elective-II	PE-ME602AA	Refrigeration and Air Conditioning
			PE-ME602AB	Renewable Energy Engineering
3	VII	Professional Elective-III	PE- ME701AA	Automobile Engineering
			PE- ME701AB	Gas Dynamics and Jet Propulsion
4	VII	Professional Elective-IV	PE-ME702AA	Advanced Welding Technology
			PE-ME702AB	Nuclear Engineering
Specialization: B. Smart Manufacturing				
Sl. No.	Semester	Course Name	Course Code	Course Title
Theory				
1	VI	Professional Elective-I	PE-ME601BA	Digital Twin
			PE-ME601BB	Industrial AI
2	VI	Professional Elective-II	PE-ME602BA	Robotics in Manufacturing
			PE-ME602BB	Predictive Maintenance and Sustainability
3	VII	Professional Elective-III	PE- ME701BA	Additive Manufacturing
			PE- ME701BB	Sensors and Actuators
4	VII	Professional Elective-IV	PE-ME702BA	Smart Materials and Applications
			PE-ME702BB	Decision Analytics and Supply Chain Management



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## Part IV: List of Open Elective Papers

### Open Elective Papers offered to Students of other Departments

Sl. No.	Semester	Course Name	Course Code	Course Title
<b>Theory</b>				
1	VIII	Open Elective-I	OE-ME801A	Introduction to Robotics
			OE-ME801B	3D Printing



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Part V: Curriculum Structure for Minor Degree							
A. Sustainable Energy Engineering							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	III	MN-ME401A	Energy and its Resources	3	0	0	3
2	VI	MN-ME501A	Climate Change Understanding and Observations	3	0	0	3
3	VII	MN-ME601A	Energy Storage Systems for Renewables	3	0	0	3
4	VII	MN-ME702A	Electronics for Renewables	3	0	0	3
5	VIII	MN-ME801A	Solar Energy Technologies and System Design	3	0	0	3
6	VIII	MN-ME802A	Solar Energy System Installations and Maintenance	3	0	0	3
Total Theory				18	0	0	18
Practical/ Sessional							
Total Practical/ Sessional							
Total of Minor Degree				18	0	0	18



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## Curriculum for Undergraduate Degree (B.Tech.) in Automobile 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	1.0
2	1 Hr. Tutorial (T) Per Week	1.0
3	1 Hr. Practical/ Lab (P) Per Week	0.5
4	2 Hrs. Practical/ Lab (P) Per Week	1.0

#### 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	9
2	Basic Science Courses	29	23
3	Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.	24	23
4	Program Core Courses (Branch specific)	55	62
5	Professional Elective Courses relevant to chosen specialization/ branch	15	18
6	Open Elective Courses from other technical and / or emerging subjects	9	9
7	Project Work, Seminar and Internship in Industry or elsewhere	13	16
8	Audit Courses [Environmental Science, Induction Training]	0	Non-Credit
<b>Total</b>		<b>160</b>	<b>160</b>



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## 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 (Jeevan Kaushal-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 (Mulya Prava)	2	0	0	2
4	IV	HM-HU401	Leadership Skill and Management (Jeevan Kaushal-III)	2	0	0	2
5	VIII	HM-HU801	Universal Human Values-II (Jeevan Kaushal-IV)	2	0	0	2
Total Theory				10	0	0	10
Practical/ Sessional							
1	I	HM-HU191	Communication Skill Laboratory	0	0	2	1
2	V	HM-HU591	Professional Skill (Jeevan Kaushal-II)	1	0	2	2
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				3	0	4	5
Total				13	0	4	15



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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	III	BS-M303	Mathematics -III	3	0	0	3
6	IV	BS-BIO401	Biology for Engineers	2	0	0	2
7	IV	BS-M401	Vedic Mathematics (Indian Knowledge System -II)	2	0	0	2
8	V	BS-M501	Basics of Indian Astronomy (Indian Knowledge System -III)	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							
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				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-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-AUE301	Engineering Mechanics	3	1	0	4
4	III	ES-AUE302	Materials Engineering	3	0	0	3
5	IV	ES-AUE401	Fluid Mechanics and Hydraulic Machines	3	0	0	3





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<i>Total Theory</i>				<b>14</b>	<b>2</b>	<b>0</b>	<b>16</b>
<b>Practical/ Sessional</b>							
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
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>16</b>	<b>08</b>
<b>Total</b>				<b>14</b>	<b>2</b>	<b>16</b>	<b>24</b>

Professional Core Courses							
Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	III	PC-AUE301	Thermodynamics and Thermal Engineering	3	1	0	4
2	III	PC-AUE302	Manufacturing Technology	4	0	0	4
3	III	PC-AUE303	Automotive Engines	3	0	0	3
4	IV	PC-AUE401	Strength of Materials	3	0	0	3
5	IV	PC-AUE402	Automotive Chassis	3	0	0	3
6	IV	PC-AUE403	Mechanics of Machines	3	1	0	4
7	V	PC-AUE501	Metrology and Instrumentation	2	0	0	2
8	V	PC-AUE502	Automotive Transmission	3	0	0	3
9	V	PC-AUE503	Automotive Electrical and Electronics System	3	0	0	3
10	V	PC-AUE504	Engineering Design	3	0	0	3
11	VI	PC-AUE601	Automotive Electrification and Hybrid System	3	0	0	3
12	VI	PC-AUE602	Vehicle Dynamics	3	0	0	3
13	VI	PC-AUE603	Vehicle Body Engineering	2	0	0	2
14	VII	PC-AUE701	Off Road Vehicle	3	0	0	3
Total Theory				41	2	0	43
Practical/ Sessional							
1	III	PC-AUE391	Machine Drawing	0	0	3	1.5
2	III	PC-AUE392	Manufacturing and Testing Laboratory	0	0	3	1.5



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3	IV	PC-AUE491	Automobile Engineering Laboratory-I (Automotive Components Laboratory)	0	0	3	1.5
4	IV	PC-AUE492	Fluid Mechanics and Heat Transfer Laboratory	0	0	3	1.5
5	V	PC-AUE591	Automobile Engineering Laboratory-II (Engine Testing and Pollution Measurement Laboratory)	0	0	3	1.5
6	V	PC-AUE592	Automobile Engineering Laboratory-III (Automotive Electrical and Electronics Laboratory)	0	0	3	1.5
7	VI	PC-AUE691	Automobile Engineering Laboratory-IV (Automotive Design Laboratory)	0	0	3	1.5
8	VI	PC-AUE692	Automobile Engineering Laboratory-V (Vehicle Maintenance and Drivetrain Laboratory)	0	0	3	1.5
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>
<b>Total</b>				<b>41</b>	<b>2</b>	<b>24</b>	<b>55</b>

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-AUE501	Professional Elective-I	3	0	0	3
2	VI	PE-AUE601	Professional Elective-II	3	0	0	3
3	VI	PE-AUE602	Professional Elective-III	3	0	0	3
4	VII	PE-AUE701	Professional Elective-IV	3	0	0	3
5	VII	PE-AUE702	Professional Elective-V	3	0	0	3
Total Theory				15	0	0	15
Practical/ Sessional							
1				0	0	0	0
Total Practical/ Sessional				0	0	0	0
Total				15	0	0	15



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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	V	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	VIII		Open Elective - III	3	0	0	3
Total Theory				9	0	0	9
Practical/ Sessional							
1				0	0	0	0
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							
1				0	0	0	0
Total Theory				0	0	0	0
Practical/ Sessional							
1	II	PW-BS281	Ideation Laboratory	0	0	2	1
2	IV	PW-AUE481	Project-I (Mini Project)	0	0	4	2
3	VI	PW-AUE681	Project-II	0	0	4	2
4	VII	PW-AUE781	Project-III	0	0	4	2
5	VII	PW-AUE771	Summer Internship	0	0	2	1
6	VIII	PW-AUE881	Project-IV	0	0	8	4
7	VIII	PW-AUE882	Comprehensive Viva Voce	0	0	0	1
Total Practical/ Sessional				0	0	24	13
Total				0	0	24	13



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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							
1	II	AU271	NSS/NCC	2	0	0	0
2	III	AU-BS371	Environmental Science	2	0	0	0
Total Theory				4	0	0	0
Practical/ Sessional							
1				0	0	0	0
Total Practical/ Sessional				0	0	0	0
Total				4	0	0	0



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## Part II: Course Structure & Semester wise Credit Distribution

First Semester (First Year)							
Mandatory Induction Program- 3 Weeks Duration							
Sl No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M101	Mathematics-I	3	1	0	4
2	BS	BS-CH101	Chemistry	3	0	0	3
3	ES	ES-EE101	Basic Electrical and Electronics Engineering	2	1	0	3
4	HM	HM-HU101	Communication Skills (Jeevan Kaushal-I)	2	0	0	2
5	HM	HM-HU102	Introduction to Indian Knowledge System (Indian Knowledge System-I)	2	0	0	2
Total Theory				12	2	0	14
Practical/ Sessional/ Mandatory Course							
1	BS	BS-CH191	Chemistry Laboratory	0	0	3	1.5
2	ES	ES-EE191	Basic Electrical and Electronics Engineering Laboratory	0	0	4	2
3	ES	ES-ME192	Workshop/Manufacturing Practices	0	0	4	2
4	HM	HM-HU191	Communication Skill Laboratory	0	0	2	1
Total Practical/ Sessional/ Audit Course				0	0	13	6.5
Total of First Semester				12	2	13	20.5

Second Semester (First Year)							
Sl No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M201	Mathematics-II	3	1	0	4
2	BS	BS-PH201	Physics	3	1	0	4
3	ES	ES-CS201	Programming for Problem Solving	3	0	0	3
4	HM	HM-HU203	Inculcation of Human Values and Professional Ethics (Mulya Prava)	2	0	0	2
Total Theory				11	2	0	13



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Practical/ Sessional/ Mandatory Course							
1	BS	BS-PH291	Physics Laboratory	0	0	3	1.5
2	ES	ES-CS291	Programming for Problem Solving Laboratory	0	0	4	2
3	ES	ES-ME291	Engineering Graphics and Design	0	0	4	2
4	PW	PW-BS281	Ideation Laboratory	0	0	2	1
5	AU	AU271	NSS/NCC	2	0	0	0
Total Practical/ Sessional/ Audit Course				0	0	13	6.5
Total of Second Semester				13	2	13	19.5

Third Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	ES	ES-AUE301	Engineering Mechanics	3	1	0	4
2	ES	ES-AUE302	Materials Engineering	3	0	0	3
3	BS	BS-M303	Mathematics -III	3	0	0	3
4	PC	PC-AUE301	Thermodynamics and Thermal Engineering	3	1	0	4
5	PC	PC-AUE302	Manufacturing Technology	4	0	0	4
6	PC	PC-AUE303	Automotive Engines	3	0	0	3
Total Theory				19	2	0	21
Practical/ Sessional/ Mandatory Course							
1	PC	PC-AUE391	Machine Drawing	0	0	3	1.5
2	PC	PC-AUE392	Manufacturing and Testing Laboratory	0	0	3	1.5
2	AU	AU-BS371	Environmental Science	2	0	0	0
Total Practical/ Sessional/ Audit Course				2	0	6	3
Total of Third Semester				21	2	6	24



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Fourth Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	HM	HM-HU401	Leadership Skill and Management (Jeevan Kaushal-III)	2	0	0	2
2	ES	ES-AUE401	Fluid Mechanics and Hydraulic Machines	3	0	0	3
3	BS	BS-BIO401	Biology for Engineers	2	0	0	2
4	BS	BS-M401	Vedic Mathematics (Indian Knowledge System -II)	2	0	0	2
5	PC	PC-AUE401	Strength of Materials	3	0	0	3
6	PC	PC-AUE402	Automotive Chassis	3	0	0	3
7	PC	PC-AUE403	Mechanics of Machines	3	1	0	4
Total Theory				18	1	0	19
Practical/ Sessional/ Mandatory Course							
1	PC	PC-AUE491	Automobile Engineering Laboratory-I (Automotive Components Laboratory)	0	0	3	1.5
2	PC	PC-AUE492	Fluid Mechanics and Heat Transfer Laboratory	0	0	3	1.5
3	PW	PW-AUE481	Project-I (Mini Project)	0	0	4	2
Total Practical/ Sessional/ Audit Course				0	0	10	5
Total of Fourth Semester				18	1	10	24

Fifth Semester (Third Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BS-M501	Basics of Indian Astronomy (Indian Knowledge System-III)	2	0	0	2
2	PC	PC-AUE501	Metrology and Instrumentation	2	0	0	2
3	PC	PC-AUE502	Automotive Transmission	3	0	0	3
4	PC	PC-AUE503	Automotive Electrical and Electronics System	3	0	0	3
5	PC	PC-AUE504	Engineering Design	3	0	0	3



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6	PE	PE-AUE501	Professional Elective-I	3	0	0	3
7	OE	OE-XXXX	Open Elective – I	2	0	2	3
<i>Total Theory</i>				<b>18</b>	<b>0</b>	<b>2</b>	<b>19</b>
<b>Practical/ Sessional/ Mandatory Course</b>							
1	HM	HM-HU591	Professional Skills (Jeevan Kaushal-II)	1	0	2	2
2	PC	PC-AUE591	Automobile Engineering Laboratory-II (Engine Testing and Pollution Measurement Laboratory)	0	0	3	1.5
3	PC	PC-AUE592	Automobile Engineering Laboratory-III (Automotive Electrical and Electronics Laboratory)	0	0	3	1.5
4	HM	HM-HU571	Aptitude Skill Development-I	1	0	0	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>2</b>	<b>0</b>	<b>8</b>	<b>6</b>
<b>Total of Fifth Semester</b>				<b>20</b>	<b>0</b>	<b>10</b>	<b>25</b>

Sixth Semester (Third Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-AUE601	Automotive Electrification and Hybrid System	3	0	0	3
2	PC	PC-AUE602	Vehicle Dynamics	3	0	0	3
3	PC	PC-AUE603	Vehicle Body Engineering	2	0	0	2
4	PE	PE-AUE601	Professional Elective-II	3	0	0	3
5	PE	PE-AUE602	Professional Elective-III	3	0	0	3
6	OE	OE-XXXX	Open Elective-II	2	0	2	3
Total Theory				16	0	2	17
Practical/ Sessional/ Mandatory Course							
1	PC	PC-AUE691	Automobile Engineering Laboratory-IV (Automotive Design Laboratory)	0	0	3	1.5
2	PC	PC-AUE692	Automobile Engineering Laboratory- V (Vehicle Maintenance and Drivetrain Laboratory)	0	0	3	1.5





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3	PW	PW-AUE681	Project-II	0	0	4	2
3	HM	HM-HU671	Aptitude Skill Development-II	1	0	0	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>1</b>	<b>0</b>	<b>10</b>	<b>6</b>
<b>Total of Sixth Semester</b>				<b>17</b>	<b>0</b>	<b>12</b>	<b>23</b>

Seventh Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	PC	PC-AUE701	Off Road Vehicle	3	0	0	3
2	PE	PE-AUE701	Professional Elective-IV	3	0	0	3
3	PE	PE-AUE702	Professional Elective-V	3	0	0	3
Total Theory				9	0	0	9
Practical/ Sessional/ Mandatory Course							
1	PW	PW-AUE781	Project-III	0	0	4	2
2	PW	PW-AUE771	Summer Internship	0	0	2	1
Total Practical/ Sessional/ Audit Course				0	0	6	3
Total of Seventh Semester				9	0	6	12

Eighth Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	HM	HM-HU801	Universal Human Values -II (Jeevan Kaushal-IV)	2	0	0	2
2	BS	BS-M801	Introduction to Indian Astronomy (Indian Knowledge System-IV)	2	0	0	2
3	OE	OE-XXXX	Open Elective-III	3	0	0	3
Total Theory				7	0	0	7
Practical/ Sessional/ Mandatory Course							
1	PW	PW-AUE881	Project-IV	0	0	8	4
2	PW	PW-AUE882	Comprehensive Viva Voce	0	0	0	1
Total Practical/ Sessional/ Audit Course				0	0	8	5
Total of Eighth Semester				7	0	8	12

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## Part III: Specializations and corresponding List of Elective Papers

### Specialization A: Automotive Design and Manufacturing

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	V	PE-AUE501A	Professional Elective-I	Vibration and Noise Engineering	3	0	0	3
2	VI	PE-AUE601A	Professional Elective-II	Design of Vehicle Component	3	0	0	3
3	VI	PE-AUE602AA	Professional Elective-III	A. Manufacturing and Operation Management	3	0	0	3
		PE-AUE602AB		B. Process Planning and Cost Estimation				
4	VII	PE-AUE701AA	Professional Elective-IV	A. Automotive Materials	3	0	0	3
		PE-AUE701AB		B. Quality Assurance and Reliability				
5	VII	PE-AUE702A	Professional Elective-V	Finite Element Techniques	3	0	0	3
Total Theory					15	0	0	15
Practical/ Sessional/ Mandatory Course								
1					0	0	0	0
Total Practical/ Sessional/ Audit Course					0	0	0	0
Total					15	0	0	15

### Specialization B: Thermal Engineering

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	V	PE-AUE501B	Professional Elective-I	Combustion Thermodynamics and Heat Transfer	3	0	0	3
2	VI	PE-AUE601B	Professional Elective-II	Alternate Fuels and Energy Systems	3	0	0	3



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3	VI	PE-AUE602BA	Professional Elective-III	A. Advanced Theory of Internal Combustion Engines and Simulation	3	0	0	3
		PE-AUE602BB		B. Modelling and Simulation of Internal Combustion Engines				
4	VII	PE-AUE701BA	Professional Elective-IV	A. Automotive HVAC	3	0	0	3
		PE-AUE701BB		B. Fire Safety and Thermal Protection in Automobile				
5	VII	PE-AUE702B	Professional Elective-V	Computational Fluid Dynamics	3	0	0	3
<i>Total Theory</i>					<b>15</b>	<b>0</b>	<b>0</b>	<b>15</b>
<b>Practical/ Sessional/ Mandatory Course</b>								
1					0	0	0	0
<i>Total Practical/ Sessional/ Audit Course</i>					<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>					<b>15</b>	<b>0</b>	<b>0</b>	<b>15</b>



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## Part IV: List of Open Elective Papers

### Open Elective Papers offered by AUE department

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
Theory								
1	VII	OE-AUE701A	Open Elective-I	Industrial Engineering	3	0	0	3
2	VII	OE-AUE701B		Automation and Control				
3	VII	OE-AUE701C		Fundamentals of Automobile Engineering				
4	VIII	OE-AUE801A	Open Elective-II	Product Innovation and Entrepreneurship	3	0	0	3
5	VIII	OE-AUE801B		Power Plant Engineering				
6	VIII	OE-AUE801C		Hybrid and Electric Vehicle				
7	VIII	OE-AUE801D	Open Elective-III	Analysis and Performance of Fluid Machines	3	0	0	3
8	VIII	OE-AUE801E		Maintenance Engineering				
Total Theory					9	0	0	9
Practical/ Sessional/ Mandatory Course								
1					0	0	0	0
Total Practical/ Sessional/ Audit Course					0	0	0	0
Total					9	0	0	9



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## Part V: Curriculum Structure for Minor Degree

Minor Degree in Electric Vehicle							
Sl. No.	Semester	Course Code	Course Title	Contact Hours			Credits
				L	T	P	
Theory							
1	VI	MN-AUE601	Introduction to Electric Vehicles	4	0	0	4
2	VII	MN-AUE701	Battery Technology and Energy Storage Systems	4	0	0	4
3	VII	MN-AUE702	Electric Drives and Power Electronics	4	0	0	4
4	VIII	MN-AUE801	EV Powertrain and Control Systems	4	0	0	4
Total Theory				16	0	0	16
Practical/ Sessional/ Mandatory Course							
1	VII	MN-AUE791	Electric Drives and Power Electronics Laboratory	0	0	4	2
2	VIII	MN-AUE881	Mini Project	0	0	4	2
Total Practical/ Sessional/ Audit Course				0	0	8	4
Total				16	0	8	20



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## Curriculum for Postgraduate Degree (MBA)(w.e.f. AY: 2025-26)

### Part I: Course Introduction, Definition

## MBA PROGRAMME

### Objective

To conduct business and industry oriented MBA Programme following AICTE Model Curriculum for Management (MBA&PGDM), 2018.

### Course

- Two-Year full-time MBA course (Four-Semester).
- Minimum number of class room contact teaching for MBA programme should be 98 credits (one credit equals 12 hours) and Internship / Project should be 06 credits i.e., Total=98+06=104 credits.
- Specialization: Students can opt for any two functional specializations (One Major Area and one Minor Area) from Marketing, Finance, HRM, and Business Analytics
- Marksperpaper:100(70–End Term Examination, 30–Internal)

### Course Structure

- Regular Course

Semester	Paper	Credit(1 =4credit)	Contact Hrs. (1=10 hrs.)
I(C*)	7	23	300
II (C*)+1 Project	8	25	324
III(1C*+6E**)	7	25	300
Internship/Project#	1	6	60
IV(1C*+6E**)	7	25	300
<b>Course Total</b>	<b>30</b>	<b>104</b>	<b>1284</b>

(#Project: Project Paper + Presentation + Viva)(C\*: CORE PAPERS/E\*\*: ELECTIVE PAPERS)



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➤ **TotalCredits:** 104

## **Session**

- July–December(Odd Semesters/1<sup>st</sup> & 3<sup>rd</sup> )
- January–June(Even semesters/2<sup>nd</sup> & 4<sup>th</sup> )
- Internship/Project Work: After 2<sup>nd</sup> Sem Examination, June & July (8Weeks)

## **Examination System**(Semester–Wise)

- Total Marks= 100(70–End Term Examination, 30–Internal)
- Internal:Weightage:30(Class Test, Presentation & Viva)
- Paper wise Class Test=2Tests+2 Assignments/Case studies/Viva/Seminar
- External:70
- Semester Grade Point Average :SGPA
- Yearly Grade Point Average :YGPA
- Degree Grade Point Average :DGPA
- Odd Semester(1<sup>st</sup> & 3<sup>rd</sup>)Examination :January
- Even Semester(2<sup>nd</sup> & 4<sup>th</sup>) Examination :June
- BRM ProjectMarks/Sessional(100):ProjectReport(50),Presentation(30),Viva(20)
- Pass marks: 40 per paper.

## **Teaching Methodology**

Lecture, Discussion, Presentation, Case Studies, Group Task, Assignments, Projects, Special Lectures by industry professionals.

## **Internship/Project**

Eight weeks Internship Project in industry. Students will be required to submit a Project Report on any area of Elective courses (**Finance, Marketing, HRM, and Business Analytics**) under the Industry and Faculty guidance. The Project will be examined on Project Report, Presentation and Viva.

## **General Guidelines**

- ❖ This MBA curriculum will be applicable from the academic year 2022–23.
- ❖ All rules and regulations regarding admission, examination, registration, migration and others shall be according to Institutional norms.



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## CURRICULUM

### Core Courses (Four/Semester)

Semester I							
Sl No.	Marks	Course Code	Course Name	Conduct Hours			Credits
				L	T	P	
Theory							
1		MBA 101	Managerial Economics	4	0	0	4
2		MBA 102	Financial Reporting, Statement & Analysis	4	0	0	4
3		MBA 103	Management Theory & OB	4	0	0	4
4		MBA 104	Business Environment Ethics & Law	4	0	0	4
5		MBA 105	Business Statistics & Quantitative Techniques	4	0	0	4
6		MBA 106	Corporate Communications	2	0	0	2
	Total Theory			22	0	0	22
Practical/ Training							
1			Advanced Excel, SPSS & R Lab	0	0	4	2
	Total Practical/ Training						
Total Credit of Semester I				22	0	4	24

Semester II							
Sl No.	Marks	Course Code	Course Name	Conduct Hours			Credits
				L	T	P	
Theory							
1		MBA 201	Marketing Management	4	0	0	4
2		MBA 202	Operations & Supply Chain Management	4	0	0	4
3		MBA 203	Human Resource Management	4	0	0	4
4		MBA 204	Business Research Methods	2	0	0	2
5		MBA 205	Financial and Cost Management	4	0	0	4
6		MBA 206	Business Analytics & Information System	3	0	1	4
7		MBA 207	Operations Research	4	0	0	4
	Total Theory			26	0	0	26
Practical/ Training							
1		MBA 291	Personality Development Lab	0	0	4	2
2		MBA 292	BRM Project	0	0	4	2
	Total Practical/ Training			0	0	0	2
Total Credit of Semester II				0	0	4	30





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Summer Intensive =6 Credits

Semester III							
Sl No.	Marks	Course Code	Course Name	Conduct Hours			Credits
				L	T	P	
Theory							
1		MBA 301	Strategic Management- Compulsary	2	0	0	2
2			Major -1	4	0	0	4
3			Major -2	4	0	0	4
4			Major -3	4	0	0	4
5			Major -4	4	0	0	4
6			Minor-1	4	0	0	4
7			Minor-2	4	0	0	4
	Total Theory			26	0	0	26
Practical/ Training							
			Summer Internship	0	0	0	6
	Total Practical/ Training						
Total Credit of Semester III				0	0	0	32

Semester IV							
Sl No.	Marks	Course Code	Course Name	Conduct Hours			Credits
				L	T	P	
Theory							
1		MBA 401	Entrepreneurship Development - Compulsory	2	0	0	2
2			Major -1	4	0	0	4
3			Major -2	4	0	0	4
4			Major -3	4	0	0	4
5			Major -4	4	0	0	4
6			Minor-1	4	0	0	4
7			Minor-2	4	0	0	4
	Total Theory			26	0	0	26
Practical/ Training							
		MBA 481	Grand Viva	0	0	0	0
	Total Practical/ Training						
Total Credit of Semester II				0	0	0	26



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**Elective Papers: Two from any one Functional Area (Major) and two from a different Functional Area (Minor)**

FM/ MM/HR/ BA/HA/PM– 301

FM/ MM/HR/ BA/HA/PM – 302

FM/ MM/HR/ BA/HA/PM – 303

FM/ MM/HR/ BA/HA/PM –304

## **Semester-IV**

**Elective Papers (Four from Major Functional Area and Two from Minor Functional area) \*\***

FM/MM/HR/BA/HA/PM–401

FM/MM/HR/BA/HA/PM – 402

FM/MM/HR/BA/HA/PM – 403

FM/MM/HR/BA/HA/PM – 404

FM/MM/HR/BA/HA/PM – 405

FM/MM/HR/BA/HA/PM –406



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**\*\*The Major Functional areas will be same as chosen in the 3<sup>rd</sup> Semester.**

## Elective Papers for Third Semester

### Functional Specialization (3<sup>rd</sup> Semester) - MAJOR

MARKETING		BUSINESSANALYTICS	
CODE	COURSE NAME	CODE	COURSE NAME
MBA-MM 302	INTEGRATED MARKETING COMMUNICATION	MBA-BA 302	ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING
MBA-MM 303	SALES & DISTRIBUTION MANAGEMENT	MBA-BA 303	INTRODUCTION TO DATASCIENCE
MBA-MM 304	RETAIL MANAGEMENT	MBA-BA 304	IOT AND CLOUD COMPUTING
MBA-MM 305	MARKETING RESEARCH	MBA-BA 305	DATABASE MANAGEMENT SYSTEM

FINANCE		HUMANRESOURCE	
CODE	COURSE NAME	CODE	COURSE NAME
MBA-FM 302	CORPORATE FINANCE	MBA-HR 302	HUMAN RESOURCE PLANNING, RECRUITMENT & SELECTION
MBA-FM 303	SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT	MBA-HR 303	INDUSTRIAL RELATIONS AND LABOUR LAWS
MBA-FM 304	TAXATION	MBA-HR 304	LEARNING AND DEVELOPMENT
MBA-FM 305	MERGERS AND ACQUISITIONS	MBA-HR 305	PERFORMANCE & COMPENSATION MANAGEMENT



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**\*\*The Minor Functional areas will be same as chosen in the 3<sup>rd</sup> Semester.**

## Elective Papers for Third Semester

### Functional Specialization (3<sup>rd</sup> Semester)- MINOR

MARKETING		BUSINESS ANALYTICS	
CODE	COURSE NAME	CODE	COURSE NAME
MBA-MM 302	INTEGRATED MARKETING COMMUNICATION	MBA-BA 304	PRINCIPLES OF PROGRAMMING USING PYTHON
MBA-MM 303	SALES AND DISTRIBUTION MANAGEMENT	MBA-BA 305	DATABASE MANAGEMENT SYSTEM

FINANCE		HUMAN RESOURCE	
CODE	COURSE NAME	CODE	COURSE NAME
MBA-FM 302	CORPORATE FINANCE	MBA-HR 302	HUMAN RESOURCE PLANNING, RECRUITMENT & SELECTION
MBA-FM 303	SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT	MBA-HR 304	LEARNING AND DEVELOPMENT

HOSPITAL ADMINISTRATION		PHARMACEUTICAL MANAGEMENT	
CODE	COURSE NAME	CODE	COURSE NAME
MBA-HA 302	BASICS OF HOSPITAL MANAGEMENT	MBA-PM 302	INTRODUCTION TO PHARMACEUTICALS MANAGEMENT
MBA-HA 303	LEGAL ASPECTS OF HEALTH CARE MANAGEMENT	MBA-PM 303	MARKETING OF PHARMACEUTICAL PRODUCTS AND BRAND MANAGEMENT



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## Elective Papers for Fourth Semester

**\*\*The Major Functional areas will be same as chosen in the 4<sup>th</sup> Semester.**

### **Functional Specialization (4<sup>th</sup> Semester)-MAJOR**

MARKETING		BUSINESS ANALYTICS	
CODE	COURSE NAME	CODE	COURSE NAME
MBA-MM 402	SERVICE MARKETING AND CRM	MBA-BA 402	DATA ANALYTICS USING BIG DATA
MBA-MM 403	RURAL AND AGRI MARKETING	MBA-BA 403	MULTIVARIATE DATA ANALYSIS
MBA-MM 404	DIGITAL MARKETING AND E-BUSINESS	MBA-BA 404	DATA VISUALISATION USING BI TOOLS
MBA-MM 405	CONSUMER BEHAVIOUR	MBA-BA 405	BUSINESS FORECASTING USING TIME SERIES ANALYSIS

FINANCE		HUMAN RESOURCE	
CODE	COURSE NAME	CODE	COURSE NAME
MBA-FM 402	FINANCIAL DERIVATIVES AND RISK MANAGEMENT	MBA-HR 402	STRATEGIC HRM
MBA-FM 403	MANAGING FINANCIAL INSTITUTIONS, MARKET AND BANKING SERVICES	MBA-HR 403	HUMAN RESOURCE ACCOUNTING AND AUDIT
MBA-FM 404	INTERNATIONAL FINANCE	MBA-HR 404	ORGANISATIONAL CHANGE AND DEVELOPMENT
MBA-FM 405	FINANCIAL MODELLING WITH EXCEL	MBA-HR 405	HR ANALYTICS



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## Elective Papers for Fourth Semester

**\*\*The Minor Functional areas will be same as chosen in the 4th Semester.**

### Functional Specialization (4<sup>th</sup> Semester) - MINOR

MARKETING		BUSINESS ANALYTICS	
CODE	COURSE NAME	CODE	COURSE NAME
MBA-MM 402	SERVICE MARKETING AND CRM	MBA-BA 402	DATA ANALYTICS USING BIG DATA
MBA-MM 404	DIGITAL MARKETING E-BUSINESS	MBA-BA 404	DATA VISUALISATION USING BI TOOLS

FINANCE		HUMAN RESOURCE	
CODE	COURSE NAME	CODE	COURSE NAME
MBA-FM 403	MANAGING FINANCIAL INSTITUTIONS, MARKET AND BANKING SERVICES	MBA-HR 402	STRATEGIC HRM
MBA-FM 405	FINANCIAL MODELLING WITH EXCEL	MBA-HR 404	ORGANISATIONAL CHANGE AND DEVELOPMENT

HOSPITAL ADMINISTRATION		PHARMACEUTICAL MANAGEMENT	
CODE	COURSE NAME	CODE	COURSE NAME
MBA-HA 402	QUALITY ASSURANCE IN HOSPITAL SECTOR	MBA-PM 402	PHARMACEUTICAL LOGISTICS AND SUPPLY CHAIN MANAGEMENT
MBA-HA 403	PATIENT CARE AND MEDICAL RECORD MANAGEMENT	MBA-PM 403	ETHICAL, REGULATORY AND QUALITY ISSUES IN PHARMACEUTICAL INDUSTRY



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## Curriculum for Undergraduate Degree BBA Programme (w.e.f. AY: 2025-26)

### Part I: Introduction, Theme & Category wise Credit Distribution

#### **Objective**

To conduct a business and industry-oriented BBA Programme following the NEP 2020 Curriculum for Management (BBA).

Key features of the BBA Curriculum:

- 1. Flexible Duration and Structure:** The curriculum offers a flexible duration of three to four years, divided into 6 or 8 semesters. This structure accommodates a broad range of student needs and learning paces, providing certificates and diplomas at various stages.
- 2. Comprehensive Credit Distribution:** The curriculum encompasses a total of 132 credits for the 3-year program and 172 credits for the 4-year (Honours and Honours with Research) programs. It includes a balanced mix of Inter Disciplinary; Ability Enhancement; Skill Enhancement; Common Value Added courses and a significant emphasis on hands-on learning through Projects, Seminars, and Internships.
- 3. Innovative Course Structure:** The course structure introduces a rigorous Induction Program, mandatory visits/workshops, and expert lectures to foster a holistic educational experience. The model curriculum envisages a connection of core subjects with NEP and its encompassing elements such as Holistic and Integrated Education, 21st Century Skills, Flexibility and Choice, Environmental Awareness, Value-Based Education, Emphasis on Innovation, Understanding Human Behaviour, Empathy, and Social Awareness. The fundamentals will provide the requisite Model curriculum for UG Degree in BBA 7 robust grounding in management/business, the liberal arts subjects would help in furthering that grounding and also enable pluggability into international higher education systems (from exchange and dual degree perspectives) and the elements of sustainability, technology and behavioural sciences will ensure holistic development in synch with NEP.



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**4. Diverse Specializations and Practical Exposure:** Students will have the opportunity to specialize in emerging areas through Open Electives and gain practical experience through structured internships and project work. This practical exposure is designed to enhance employability and entrepreneurial capabilities.

**5. Assessment and Grading:** A detailed and transparent assessment mechanism ensures that students' performances are evaluated fairly, focusing on continuous learning and improvement. The grading system is aligned with the quality and rigor expected in higher education.

**6. Research Orientation for Honours Students:** The BBA (Honours with Research) program offers a unique pathway for students interested in academic and research careers. With a focus on advanced data analysis, research methodology, and a dissertation, this track prepares students for challenges in academia and industry research roles. It will also allow students to pave their path to higher education in management and technical fields

## 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:

To conduct a business and industry-oriented BBA Programme following the NEP 2020 Curriculum for Management (BBA).

- 3-year BBA program 132 credits
- 4-year BBA (Honours) 160 credits
- 4-year BBA (Honours with Research) programs, 172 credits.
- Specialization: Students can opt for any one Major functional specializations from Marketing, Finance, and HRM.
- Minor Specialization offered: Computer Applications
- Marks per paper:100(70–End Term Examination, 30–Internal)

*Curriculum for Undergraduate Degree (BBA) (w.e.f. AY: 2025-26)*





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Minimum eligibility criteria for opting for the course in the fourth year will be as follows:

**1. BBA (Honours with Research):** Minimum 75% marks or equivalent CGPA in BBA Degree up to Sixth Semester.

**2. For BBA (Honours):** BBA Degree

## C. Course Code and Definition:

Sl. No.	Course Code	Definitions
1	L	Lecture
2	T	Tutorial
3	P	Practical
4	IDC	Inter Disciplinary Course
5	AEC	Ability Enhancement Course
6	SEC	Skill Enhancement Course
7	CVAC	Common Value Added Course
8	MAR	Credit will be allotted as per participation of the departmental programs conducted.

## D. Course Structure

Sem	Major	Minor	IDC	AEC	SEC	CVAC	MAR	Project/ Summer Internship	Total Credit
I	2	1	1	1	1	1	-	-	23
II	2	1	1	1	1	1	1	-	23
III	2	1	1	1	1	1	-	-	23
IV	3	2	-	1	-	-	1	-	21
V	3	2	-	-	-	1	-	-	21
VI	2	2	-	-	-	-	1	1	21
VII	2	2	-	-	-	-	-	1	20
VIII	2	-	-	-	-	-	-	1	20



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## Course Structure & Semester wise Credit Distribution

First Semester (First Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	MS	BBA-MJ-101	Principles of Management	3	1	0	4
2	BS	BBA-MJ-102	Basic Mathematics and Statistics	3	1	0	4
3	CA	PE-BBA-MI-101	IT Literacy	2	0	0	2
4	CA	PE-BBA-IDC-101	Basic Graphic Design	3	0	0	3
5	HU	BBA-AEC-101	English and Business Communication	1	1	0	2
6	HU	BBA-SEC-101	Life Skills and Personality Development	1	0	0	1
7	CVA	BBA-CVAC-101	Yoga/Health and Wellness	1	0	0	1
Total Theory				14	3	0	17
Practical/ Sessional/ Audit Course							
1	CA	PE-BBA-MI-191	IT Literacy	0	0	4	2
2	CA	PE-BBA-IDC-191	Basic Graphic Design	0	0	2	1
3	HU	BBA-AEC-191	English and Business Communication	0	0	2	1
4	HU	BBA-SEC-191	Life Skills and Personality Development	0	0	2	1
5	CVA	BBA-CVAC-191	Yoga/Health and Wellness	0	0	2	1
Total Practical/ Sessional/ Audit Course				0	0	12	6
Total of First Semester				14	3	12	23



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## Second Semester (First Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	BS	BBA-MJ-201	Environmental and Sustainable Development	3	1	0	4
2	MS	BBA-MJ-202	Managerial Economics	3	1	0	4
3	CA	PE-BBA-MI-202	Computer Fundamentals	2	0	0	2
4	MS	BBA-IDC-202	Accounting	3	1	0	4
5	AEC	BBA-AEC-202	Modern Language and Literature (Bengali/Hindi)	1	1	0	2
6	CVAC	BBA-CVAC-202	Mental Health	1	0	0	1
Total Theory				13	4	0	17
Practical/ Sessional/ Audit Course							
1	CA	PE-BBA-MI-292	Computer Fundamentals	0	0	4	2
2	CA	BBA-SEC-292	MS- Excel Basic	0	0	4	2
3	CVAC	BBA-CVAC-202	Mental Health	0	0	2	1
4	CVAC	MAR	NSS/NCC	0	0	2	1*
Total Practical/ Sessional/ Audit Course				0	0	12	6
Total of Second Semester				13	4	12	23

## Third Semester (Second Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	MS	BBA-MJ-301	Organizational Behaviour	3	1	0	4



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2	MS	BBA-MJ-302	Financial Management	3	1	0	4
3	MS	BBA-MI-303	Management Information System	3	1	0	4
4	MS	PE-BBA-IDC-303	Values and Ethics	3	0	0	3
5	HU	BBA-AEC-303	Indian Constitution	2	0	0	2
6	ES	PE-BBA-SEC-303	Programming fundamentals	2	0	0	2
7	MS	BBA-CVAC-304	Financial Technology	1	0	0	1
<i>Total Theory</i>				<b>17</b>	<b>3</b>	<b>0</b>	<b>20</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	ES	PE-BBA-SEC-393	Programming fundamentals	0	0	2	1
2	MS	BBA-CVAC-394	Financial Technology	0	0	4	2
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>6</b>	<b>3</b>
<b>Total of Third Semester</b>				<b>17</b>	<b>3</b>	<b>6</b>	<b>23</b>

Fourth Semester (Second Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	MS	BBA-MJ-401	Marketing Management	3	1	0	4
2	MS	BBA-MJ-402	Human Resource Management	3	1	0	4
3	MS	BBA-MJ-403	Operations Management	3	1	0	4
4	MS	BBA-MI-404	Business Research Method-I	2	1	0	3
5	MS	BBA-MI-405	Business Law	2	0	0	2
6	MS	BBA-AEC-401	Society Culture and Human Behaviour	2	0	0	2
Total Theory				15	4	0	19
Practical/ Sessional/ Audit Course							
1	MS	BBA-MI-494	Business Research Method-I	0	0	2	1
2	CVAC	MAR	NSS/NCC	0	0	2	1*
Total Practical/ Sessional/ Audit Course				0	0	4	2



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<b>Total of Fourth Semester</b>	<b>15</b>	<b>4</b>	<b>4</b>	<b>21</b>
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Fifth Semester (Third Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	MS	BBA-MJ-501	Entrepreneurship and Skill Development	2	0	0	2
2	MS	BBA-MJ-MM-502	Sales and Distribution Management/	3	1	0	4
		BBA-MJ-FM-502	Financial Markets, Institutions and Financial Services /				
		BBA-MJ-HR-502	Industrial Relations				
3	MS	BBA-MJ-MM-503	Consumer Behaviour /	3	1	0	4
		BBA-MJ-FM-503	Elements of Taxation /				
		BBA-MJ-HR-503	Human Resource Development				
4	CA	PE-BBA-MI-501	Data Analysis using Statistical Package	2	0	0	2
5	CA	PE-BBA-MI-502	Programming with Python	2	0	0	2
Total Theory				12	2	0	14
Practical/ Sessional/ Audit Course							
1	MS	BBA-MJ-591	Entrepreneurship and Skill Development	0	0	4	2
2	CA	PE-BBA-MI-591	Data Analysis using Statistical Package	0	0	4	2
3	CA	PE-BBA-MI-592	Programming with Python	0	0	4	2
4	MS	BBA-CAVC-594	Leadership Skills	0	0	2	1
Total Practical/ Sessional/ Audit Course				0	0	14	7
Total of Fifth Semester				12	2	14	21



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Sixth Semester (Third Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	MS	BBA-MJ-601	Project Management	3	1	0	4
2	MS	BBA-MJ-602	Business Research Method - II	2	1	0	3
3	CA	BBA-MI-601	Fundamentals of IOT	2	1	0	3
4	CA	BBA-MI-602	GenAI in Business	2	1	0	3
5	MS	BBA- 691	Project Work	0	3	0	3
Total Theory				9	7	0	16
Practical/ Sessional/ Audit Course							
1	MS	BBA-MJ-692	Business Research Method - II	0	0	2	1
2	CA	BBA-MI-691	Fundamentals of IOT	0	0	2	1
3	CA	BBA-MI-692	GenAI in Business	0	0	2	1
4	MS	BBA- 691	Project Work	0	0	2	1
	HM	MAR	NSS/NCC			2	1*
Total Practical/ Sessional/ Audit Course				0	0	10	5
Total of Sixth Semester				9	7	10	21

CVAC

Seventh Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	MS	BBA-MJ-MM- 701 BBA-MJ-FM-701 BBA-MJ-HR-701	Service Marketing/ Management Accounting/ Recruitment and Selection	3	1	0	4
2	CA	BBA-MJ-702	Business Intelligence	2	2	0	4



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3	CA	PE-BBA-MI-701	Programming with R	2	0	0	2
4	CA	PE-BBA-MI-702	DBMS with SQL	2	0	0	2
<i>Total Theory</i>				<b>9</b>	<b>3</b>	<b>0</b>	<b>12</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	CA	PE-BBA-MI-791	Programming with R	0	0	4	2
2	CA	PE-BBA-MI-792	DBMS with SQL	0	0	4	2
3		BBA-791	Summer Internship	-	--	8-	4
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>16</b>	<b>8</b>
<b>Total of Seventh Semester</b>				<b>9</b>	<b>3</b>	<b>16</b>	<b>20</b>

Eighth Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	MS	BBA-MJ-MM-801 BBA-MJ-FM-801 BBA-MJ-HR-801	Customer Relationship Management / Security Analysis and Portfolio Management/ Compensation Management	4	0	0	4
2	MS	BBA-MJ-MM-802 BBA-MJ-FM-802 BBA-MJ-HR-802	Marketing analytics/ Financial analytics/ Human Resource Analytics	4	0	0	4
Total Theory				8	0	0	8
Practical/ Sessional/ Audit Course							
1	CVAC	BBA-RH-891	Research Project (Only for BBA Honours with research)	0	0	24	12
Total Practical/ Sessional/ Audit Course				0	0	24	12
Total of Eighth Semester				8	0	24	20

**Annexure-II****Reimbursement of Registration Fees for attending Conference by the Staff Members and Students of MCKVIE**

Sl. No.	Academic Year	Date of Submission of Application	Name of Applicant	Designation	Dept.	Event Details	Type of Event	Paper Title	SCOPUS Indexed?	Actual Registration Fee (INR)	TA Claimed (INR)	Approved Registration Fee (INR)	Approved TA (INR)	Total Amount Approved (INR)	Date of Approval by Dean, Academics/ IQAC
1	2024-25	14-05-2025	Mr. Shilajit Roy	Student	CSE	Presented Research Paper in ICRTETBM 2025 held during 19th to 21st February 2025 at Amity University, Noida	International Conference	Image Encryption using Dynamic AES and Logistic Chaotic Map	Yes	3,000+GST	-	3,000	-	3,000	30-06-2025
2	2024-25	14-05-2025	Mr. Soumya Paul	Asst. Prof.	CSE	Presented Research Paper in ICRTETBM 2025 held during 19th to 21st February 2025 at Amity University, Noida	International Conference	A Comparative survey on Present zscenarior of Modern Trends Image Steganography	Yes	3,000+GST	-	3,000	-	3,000	30-06-2025
3	2024-25	14-05-2025	Mr. Arindam Das	Asst. Prof.	IT	Presented Research Paper in International Conferenrence on Comoutational Intelligence and Information Retrieval held during 24th to 25th April 2025 at Sister Nivedita University, India	International Conference	Design of a smart dustbin model for waste management	Yes	7,000	-	4,000		4,000	30-06-2025
4	2024-25	15-05-2025	Mr. Siddhartha Shaw	Student	CSE-DS	Presented Research Paper in ICRTETBM 2025 held during 19th to 21st February 2025 at Amity University, Noida	International Conference	Detection of Chronic Kidney Disease using Machine Learning Algorithm	Yes	3,000+GST	-	3,000	-	3,000	30-06-2025



## MCKV Institute of Engineering

Staff Matters : April 2025 - June 2025

(i) STAFF APPOINTMENT STATUS						
Sl.No.	Name	Department	Designation	Qualification	Experience (in years)	Date of Joining
1	Mr. Chandan Roy	CSE	Adhoc (Asst Prof)	M.Tech	5+	22.04.2025
2	Ms. Debasmita Saha	CSE	Adhoc (Asst Prof)	M.Tech	12+	24.04.2025
3	Ms. Ekta Shaw	Administration	Office Cum Accounts Assistant	BBA(H)	8+	02.06.2025
4	Mr. Avijit Roy	Administration	Assistant Account Officer	B.Com	17+	16.06.2025

(ii) STAFF CONFIRMATION STATUS						
Sl.No.	Name	Department	Designation	Qualification	Experience (in years)	Date of Confirmation
1	Dr. Shibaprasad Sen	CSE	Associate Professor	PhD	18+	06.03.2025
2	Dr. Deep Suman Dev	CSE	Assistant Professor	PhD	19+	01.05.2025
3	Mr. Pratik Lahiri	Administration	Admission Counsellor	BA	3+	01.01.2025
4	Dr. Dipankar Ghosh	BSH	Associate Professor	PhD	15+	01.01.2025

(iii) PROMOTION STATUS -NIL						
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(iv) MATERNITY LEAVE -						
Sl.No.	Name	Department	Designation	Qualification	Experience (in years)	Date of Confirmation
1	Ms. Manali Sarkar	CSE	Assistant Professor	M.Tech	5+	01.06.2024

(v) STAFF RESIGNATION/ RETIREMENT STATUS						
SL. No.	Name	Department	Designation	Qualification	Experience in MCKVIE (in years)	Last Working Day
1	Dr. Soma Chatterjee	CSE	Assistant Professor	Ph.D	1	04.06.2025
2	Mr. Basudev Ghatak	Administration	System Administrator	B.Sc	24	10.06.2025