



# MCKV INSTITUTE OF ENGINEERING

NAAC Accredited Grade "A" Autonomous Institute under UGC Act, 1956  
Approved by AICTE & affiliated to Maulana Abul Kalam Azad University of Technology

243 G.T. Road (N), Liluah, Howrah- 711204, West Bengal, India

Ph: +91 33 26549315/17 Fax +91 33 26549318 Web: [www.mckvie.edu.in](http://www.mckvie.edu.in)

Date: 20.11.2025

**Record Minutes of the 37<sup>th</sup> Meeting of Internal Quality Assurance Cell (IQAC) held on 20.11.2025 at 03:00 pm at the Conference Hall of the institute.**

## **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.) Arun Kumar Jalan
- Prof. (Dr.) Prasenjit Chatterjee
- Prof. (Dr.) Parthasarathi Chakraborty
- Mr. Sudeep Samanta
- Dr. Abhijit Dutta
- Dr. Debopoma Kar Roy
- Mr. Abhay Kejriwal
- Prof. (Dr.) Satadal Saha

## **Members Absent:**

- Prof. (Dr.) Sudipto Chaki
- Dr. Krishnendu Chattopadhyay
- Mr. Subir Bhadra
- Mr. Devasish Basu
- Mr. Sandip Dutta
- Mr. Biswajit Majumdar
- Mr. Saptarshi Maiti
- Ms. Riya Karmakar

## **Agenda of the meeting:**

1. Confirmation of the minutes of 36<sup>th</sup> meeting of IQAC held on 30.06.25.
2. Approval of curriculum for UG and PG programs of the institute.
3. NBA accreditation for UG and PG programs.
4. Participation in NIRF-2026.
5. Registration fee reimbursement for presenting research paper.
6. Recruitment/Re-designation/Resignation information.
7. 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 36<sup>th</sup> meeting of IQAC held on 30.06.25.**

Minutes of the 36<sup>th</sup> meeting of IQAC of MCKVIE, held on 30.06.2025, as circulated to all the members, were unanimously confirmed.

### **Item No. 2 of Agenda: Approval of curriculum for UG and PG programs of the institute.**

The final version of the proposed curriculum structure (revised version of the curriculum structure proposed in 36<sup>th</sup> IQAC meeting as Annexure-I) for B.Tech (ECE), B.Tech (EE), B.Tech (CSE), B.Tech (CS-DS), B.Tech (IT), B.Tech (ME), B.Tech (AUE), BBA and MBA and full syllabus for



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first year for all streams have been presented by Dean-Academics and are approved by the member present in the meeting. The curriculum structure (**Annexure-I**) has been designed as per the guidelines of NEP-2020, recommendations of UGC, model curriculum proposed by AICTE and recommendations from industry, alumni and the BoS members of the respective departments. A copy of the same has been submitted by CoE, MCKVIE to the Registrar, MAKAUT and CoE, MAKAUT.

### **Item No. 3 of Agenda: NBA accreditation for UG and PG programs.**

As informed by IQAC Coordinator, the institute has submitted application (SAR) to NBA for accreditation of B.Tech (ECE) and B.Tech (EE) programs on 28.10.2025. The five sets of proposed date of visit as submitted to NBA are:

05.12.25 – 07.12.25

12.12.25 – 14.12.25

19.12.25 – 21.12.25

09.01.26 – 11.01.26

16.01.26 – 18.01.26

The efforts imparted by the two departments and the institute as a whole were being appreciated by the members in the meeting.

It was also informed to the members that the CSE and IT departments will apply for NBA accreditation within next two years after overcoming the currently prevailing shortfalls. It was also mentioned that MS department will apply for NBA accreditation for its MBA program in 2026, after three batches pass out in that stream.

### **Item No. 4 of Agenda: Participation in NIRF-2026.**

As reported by IQAC Coordinator, like previous years, this year also the institute has applied for NIRF ranking. The registration process has already been done and the DCS will be opened in the next month. The institute has started collecting the data for 2024-25 from different departments, cells and committees of the institute.

### **Item No. 5 of Agenda: Registration fee reimbursement for presenting research paper.**

As reported by IQAC Coordinator, one application has been submitted by Ms. Susmita Sarkar, Asst. Prof., Dept. of ECE for reimbursement of registration fees for presenting research paper in IEEE 7<sup>th</sup> International Conference on Energy, Power and Environment (ICEPE) held during 9<sup>th</sup> to 11<sup>th</sup> May, 2025 at NIT, Meghalaya. As the submitted documents fulfill all the criteria, as per the incentive policy of the institute Rs. 4000/- has been approved as reimbursement of registration fee by the members present in the meeting (**Annexure-II**).

### **Item No. 6 of Agenda: Recruitment/Re-designation/Resignation information.**

The IQAC Coordinator presented a list of faculty members, Lab Instructors and other staff members who have joined the institute, left the institute, confirmed, promoted and are availing maternity leave during July to November, 2025 (**Annexure-II**).



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## Item No. 5 of Agenda: Miscellaneous.

The following points have been discussed under this agenda.

1. The institute has gone through Gender Audit on 11.11.2025 by the following external experts.
  - a. Dr. Anup Kumar Sikdar  
NAAC Peer Member  
Former Principal, Ramsaday College, Amta  
Kolkata
  - b. Dr. Pratip Kumar Chowdhury  
Former DPI, W.B Higher Education Department  
Former Prof. of Physics  
Presidency College (now Presidency University)  
Kolkata
2. The Green and Environmental Audit certificate for 2023-24 has been presented by the IQAC Coordinator and it has already been uploaded in the institutional website. It was also being informed that the Green and Environmental Audit for 2024-25 will be done shortly.

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

A handwritten signature in blue ink, appearing to read 'Satadal Saha'.

Prof. (Dr.) Satadal Saha  
Coordinator, IQAC

A handwritten signature in blue ink, appearing to read 'Abhijit Lahiri'.

Prof. (Dr.) Abhijit Lahiri  
Chairman, IQAC

Minutes circulated to:

- Chairman Sir
- All the members of IQAC

**Annexure-I**

**Curriculum Structure**

(w.e.f. 2025-26)

for

**UG Degree Engineering Programs**

of

**MCKV Institute of Engineering**

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**2025**

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\*Approved in the 11<sup>th</sup> meeting of Academic Council held on 22<sup>nd</sup> July, 2025



## Preface

MCKV Institute of Engineering was established in 1999 with a vision to foster the spirit of technological learning and its application. Since its inception, the institution has been creating the right kind of opportunities and ambience for educating young minds in the digital era. The institute is approved by the All India Council for Technical Education (AICTE) and has been affiliated to Maulana Abul Kalam Azad University of Technology (MAKAUT), West Bengal. It has been accredited by (National Assessment and Accreditation Council) NAAC with an 'A' Grade, and w.e.f. 2020-21 it has been working as an autonomous engineering college. It offers undergraduate engineering degree i.e. B.Tech in Mechanical Engineering, Electrical Engineering, Computer Science and Engineering, Computer Science and Engineering (Data Science), Computer Science and Engineering (Artificial Intelligence and Machine Learning), Electronics and Communications Engineering, Information Technology and Automobile Engineering. Quite a few of these programs have the accreditation by National Board of Accreditation (NBA). Apart from the B.Tech programs, a postgraduate engineering degree i.e. M.Tech in Electronics and Communication Engineering (with specialization in Communication) has also been offered to encourage students in higher studies. The institute also offers a postgraduate program in the field of Management i.e. MBA with specializations in (i) Marketing (major & minor both), (ii) Finance (major & minor both), (iii) Human Resource Management (major & minor both), (iv) Business Analytics (minor only), (v) Hospital Administration (minor only in combination with Human Resource Management as major specialization), and (vi) Pharmaceutical Management (minor only in combination with Marketing as major specialization)). The curricula of all these courses have been designed to accommodate the trending needs of the industries.

As the institute has been operating as an autonomous institute w.e.f. A.Y. 2020-21, all its curricula have been designed by incorporating the recommendations of all its stakeholders and following the guidelines of AICTE/UGC and MAKAUT, WB. Now, with the technological changes prevailing in the industries and with the implementation of National Education Policy (NEP-2020) there has been a requirement to reorient the curricula of the institute. Accordingly, the curricula have been redesigned based on the following benchmarks/guidelines and will be effective from A.Y. 2025-26 subject to the approval from the concerned authorities.

1. As prescribed by UGC/ AICTE (<https://www.ugc.gov.in/e-book/FYUGP/mobile/index.html>), the total credit point to complete the B.Tech program is set as 160.
2. As per the guidelines from UGC (Ref.: F. No. 1-18/2017 (CPP-II), dated 3<sup>rd</sup> January, 2025), 37 quantifiers have been set for autonomous institutes and the institute must comply with at least 32 out of 37 quantifiers to apply for extension of autonomy.

Accordingly, following quantifiers have been taken care of while reframing the curricula.

- a. **Indian Knowledge System (IKS)-** As per UGC guideline ([https://www.ugc.gov.in/pdfnews/6436045\\_Guidelines-IKS-in-HE-Curricula.pdf](https://www.ugc.gov.in/pdfnews/6436045_Guidelines-IKS-in-HE-Curricula.pdf)), at least 5% of the total mandated credit should be assigned to IKS. As we have maintained the total mandated credit as 160, so its 5% turns out to be 8. Accordingly, four papers viz. (i) Introduction to Indian Knowledge System (IKS-I), (ii) Mathematics in India: From Vedic period to modern times (IKS-II), (iii) Basics of Indian Astronomy (IKS-III) and (iv) Introduction to Indian Astronomy (IKS-IV) have been incorporated within the curricula with 2 credits allotted to each of them.
- b. **Mulya Pravah 2.0: Inculcation of Human Values and Professional Ethics-** This paper contains 5 units viz. (i) Introduction to Indian Ethos, (ii) Human Values and Ethics, (iii) Constitutional Values and Global Citizenship, (iv) Values and Skills for Youth and (v) Integrated Personality and Well-being. As per UGC guideline ([https://www.ugc.gov.in/pdfnews/8799370\\_Mulya-Parvah\\_Guideline.pdf](https://www.ugc.gov.in/pdfnews/8799370_Mulya-Parvah_Guideline.pdf)), 2 credits have been allotted to this course.
- c. **Jeevan Kaushal 2.0-** This is a bundle of 4 courses viz. (i) Communication Skills, (ii) Professional Skills, (iii) Leadership and Management Skills and (iv) Universal Human Values. As per UGC guideline ([https://www.ugc.gov.in/pdfnews/4371304\\_LifeSKill\\_JeevanKaushal\\_2023.pdf](https://www.ugc.gov.in/pdfnews/4371304_LifeSKill_JeevanKaushal_2023.pdf)), 2 credits have been allotted to each of these four courses.

3. As per the guidelines of UGC (<https://www.ugc.gov.in/e-book/FYUGP/mobile/index.html>) and AICTE (F. No. 1-29/CM/AICTE/2023, dated 27<sup>th</sup> march, 2023), the concept of Major degree and Minor degree has been incorporated. The major degree comprises of all the papers under the purview of the mandated 160 credits. The minor degree consists of a combination of additional 4-6 papers (with a total credit of 20 points) which have not been a part of the major degree papers. A student can chose any one minor degree offered by different departments of the institute subject to the criteria as set by the respective departments.
4. As per the guidelines of UGC (<https://www.ugc.gov.in/e-book/FYUGP/mobile/index.html>) and AICTE (F. No. 1-29/CM/AICTE/2023, dated 27<sup>th</sup> march, 2023), the concept of specialization has been incorporated within the major degree. A program may offer 2-3 specializations and the students under the program may opt for any one out of all the specializations under the program.

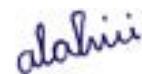
## Salient Features

- The Credits required for completion of B. Tech. program is 160.
- The Curriculum is based on the guidelines of National Education Policy (NEP-2020).
- The curriculum has embedded the Multi Exit facility in the B. Tech. program. Students exiting after completing 1st Year/ 2nd Year/ 3rd Year will be awarded Certificate/ Diploma/ Advanced Diploma respectively provided he/she earns 40/ 80/ 120 credits along with additional 6 credits to be earned through 2-months internship program or through passing two skill-based courses with a total credit of 6 as set by the respective department.
- There is provision of Major degree and Minor Degree for students.
- The curriculum has the provision for multiple specializations out of which a student has to opt one that suits his/her career objectives.
- The curriculum is designed to meet the prevailing and on-going industrial requirements.
- The curriculum includes Project based Education, i.e. students have to undergo project in every year starting from the 1<sup>st</sup> year.
- The curriculum inherits the Value based Education and offers Interdisciplinary/ Multidisciplinary Courses.
- The Curriculum offers digital pedagogy and active learning components with adequate motivation for Entrepreneurship/ Startups.
- The overall objective of the curriculum is the Holistic Development of the students.



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Prof. (Dr.) Satadal Saha  
Dean-Academics  
MCKV Institute of Engineering



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Prof. (Dr.) Abhijit Lahiri  
Principal  
MCKV Institute of Engineering



# **Curriculum Structure**

(w.e.f. 2025-26)

for

## **B.Tech in Automobile Engineering**

of

**MCKV Institute of Engineering**

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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>

#### 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	
<b>Theory</b>							
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 Pravah)	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
<i>Total Theory</i>				<b>10</b>	<b>0</b>	<b>0</b>	<b>10</b>
<b>Practical/ Sessional</b>							
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
<i>Total Practical/ Sessional</i>				<b>3</b>	<b>0</b>	<b>4</b>	<b>5</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	
<b>Theory</b>							
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
<i>Total Theory</i>				23	3	0	26
<b>Practical/ Sessional</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</i>				0	0	6	3
<b>Total</b>				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	
<b>Theory</b>							
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
<i>Total Theory</i>				14	2	0	16
<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>				0	0	16	08
<b>Total</b>				14	2	16	24

Professional Core Courses							
Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>41</b>	<b>2</b>	<b>0</b>	<b>43</b>
<b>Practical/ Sessional</b>							
1	III	PC-AUE391	Machine Drawing	0	0	3	1.5
2	III	PC-AUE392	Manufacturing and Testing Laboratory	0	0	3	1.5
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	
<b>Theory</b>							
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
<i>Total Theory</i>				15	0	0	15
<b>Practical/ Sessional</b>							
<i>Total Practical/ Sessional</i>				0	0	0	0
<b>Total</b>				15	0	0	15

### Open Elective Courses from other technical and / or emerging subjects

Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits	
				L	T	P		
<b>Theory</b>								
1	V	Based on the papers opted from the list of papers offered by other depts.	Open Elective - I	2	0	2	3	
2	VI		Open Elective - II	2	0	2	3	
3	VIII		Open Elective - III	3	0	0	3	
<i>Total Theory</i>				9	0	0	9	
<b>Practical/ Sessional</b>								
<i>Total Practical/ Sessional</i>				0	0	0	0	
<b>Total</b>				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	
<b>Theory</b>							
1				0	0	0	0
<i>Total Theory</i>				0	0	0	0
<b>Practical/ Sessional</b>							
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
<i>Total Practical/ Sessional</i>				0	0	24	13
<b>Total</b>				0	0	24	13

<b>Audit Courses</b> <b>[Environmental Science, Induction Training etc.]</b>							
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
<i>Total Theory</i>				0	0	0	0
<b>Practical/ Sessional</b>							
1	II	AU271	NSS/NCC	2	0	0	0
2	III	AU-BS371	Environmental Science	2	0	0	0
<i>Total Practical/ Sessional</i>				4	0	0	0
<b>Total</b>				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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>12</b>	<b>2</b>	<b>0</b>	<b>14</b>
<b>Practical/ Sessional/ Mandatory Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>13</b>	<b>6.5</b>
<b>Total of First Semester</b>				<b>12</b>	<b>2</b>	<b>13</b>	<b>20.5</b>

### Second Semester (First Year)

Sl No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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 Pravah)	2	0	0	2
<i>Total Theory</i>				<b>11</b>	<b>2</b>	<b>0</b>	<b>13</b>
<b>Practical/ Sessional/ Mandatory 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	NSS/NCC	2	0	0	0
<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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>19</b>	<b>2</b>	<b>0</b>	<b>21</b>
<b>Practical/ Sessional/ Mandatory Course</b>							
1	PC	PC-AUE391	Machine Drawing	0	0	3	1.5
2	PC	PC-AUE392	Manufacturing and Testing Laboratory	0	0	3	1.5
3	AU	AU-BS371	Environmental Science	2	0	0	0
<i>Total Practical/ Sessional/ Audit Course</i>				<b>2</b>	<b>0</b>	<b>6</b>	<b>3</b>
<b>Total of Third Semester</b>				<b>21</b>	<b>2</b>	<b>6</b>	<b>24</b>

### Fourth Semester (Second Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>18</b>	<b>1</b>	<b>0</b>	<b>19</b>
<b>Practical/ Sessional/ Mandatory Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>10</b>	<b>5</b>
<b>Total of Fourth Semester</b>				<b>18</b>	<b>1</b>	<b>10</b>	<b>24</b>

### Fifth Semester (Third Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
6	PE	PE-AUE501	Professional Elective-I	3	0	0	3
7	OE	OE-XXXXX	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	
<b>Theory</b>							
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-XXXXX	Open Elective-II	2	0	2	3
<i>Total Theory</i>				<b>16</b>	<b>0</b>	<b>2</b>	<b>17</b>
<b>Practical/ Sessional/ Mandatory Course</b>							
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
3	PW	PW-AUE681	Project-II	0	0	4	2
4	HM	HM-HU671	Aptitude Skill Development-II	1	0	0	1
<i>Total Practical/ Sessional/ Audit Course</i>				1	0	10	6
<b>Total of Sixth Semester</b>				17	0	12	23

Seventh Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				9	0	0	9
<b>Practical/ Sessional/ Mandatory Course</b>							
1	PW	PW-AUE781	Project-III	0	0	4	2
2	PW	PW-AUE771	Summer Internship	0	0	2	1
<i>Total Practical/ Sessional/ Audit Course</i>				0	0	6	3
<b>Total of Seventh Semester</b>				9	0	6	12

Eighth Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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-XXXXXX	Open Elective-III	3	0	0	3
<i>Total Theory</i>				7	0	0	7
<b>Practical/ Sessional/ Mandatory Course</b>							
1	PW	PW-AUE881	Project-IV	0	0	8	4
2	PW	PW-AUE882	Comprehensive Viva Voce	0	0	0	1
<i>Total Practical/ Sessional/ Audit Course</i>				0	0	8	5
<b>Total of Eighth Semester</b>				7	0	8	12

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

### A. Specialization in Automotive Design and Manufacturing

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
<b>Theory</b>								
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-AUE602A	Professional Elective-III	A. Manufacturing and Operation Management B. Process Planning and Cost Estimation	3	0	0	3
4	VII	PE-AUE701A	Professional Elective-IV	A. Automotive Materials B. Quality Assurance and Reliability	3	0	0	3
5	VII	PE-AUE702A	Professional Elective-V	Finite Element Techniques	3	0	0	3
<i>Total Theory</i>						<b>15</b>	<b>0</b>	<b>0</b>
<b>Practical/ Sessional/ Mandatory Course</b>								
<i>Total Practical/ Sessional/ Audit Course</i>						<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>						<b>15</b>	<b>0</b>	<b>0</b>

### B. Specialization in Thermal Engineering

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
<b>Theory</b>								
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
3	VI	PE-AUE602B	Professional Elective-III	A. Advanced Theory of Internal Combustion Engines and Simulation B. Modelling and Simulation of Internal Combustion Engines	3	0	0	3

4	VII	PE-AUE701B	Professional Elective-IV	A. Automotive HVAC B. Fire Safety and Thermal Protection in Automobile	3	0	0	3
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>

## 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		
<b>Theory</b>									
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		Analysis and Performance of Fluid Machines					
8	VIII	OE-AUE801E		Maintenance Engineering					
<i>Total Theory</i>					<b>9</b>	<b>0</b>	<b>0</b>	<b>9</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>9</b>	<b>0</b>	<b>0</b>	<b>9</b>	

## 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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>16</b>	<b>0</b>	<b>0</b>	<b>16</b>
<b>Practical/ Sessional/ Mandatory Course</b>							
1	VII	MN-AUE791	Electric Drives and Power Electronics Laboratory	0	0	4	2
2	VIII	MN-AUE881	Mini Project	0	0	4	2
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>8</b>	<b>4</b>
<b>Total</b>				<b>16</b>	<b>0</b>	<b>8</b>	<b>20</b>

# **Curriculum Structure**

(w.e.f. 2025-26)

for

## **B.Tech in Computer Science and Engineering**

of

**MCKV Institute of Engineering**

**(NAAC Accredited Grade-A Autonomous Institute)**

Approved by AICTE

Affiliated to Maulana Abul Kalam Azad University of Technology, West Bengal

(Formerly known as West Bengal University of Technology, West Bengal)



**2025**

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\*Approved in the 11<sup>th</sup> meeting of Academic Council held on 22<sup>nd</sup> July, 2025



**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	
<b>Theory</b>							
1	I	HM-HU103	Inculcation of Human Values and Professional Ethics ( <u>Mulya Pravah</u> )	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
<i>Total Theory</i>				13	0	0	13
<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
<i>Total Practical/ Sessional</i>				2	0	4	4
<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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>23</b>	<b>3</b>	<b>0</b>	<b>26</b>
<b>Practical/ Sessional</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</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/ Mechanical/ Computer, etc.							
Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>11</b>	<b>1</b>	<b>0</b>	<b>12</b>
<b>Practical/ Sessional</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>20</b>	<b>10</b>
<b>Total</b>				<b>11</b>	<b>1</b>	<b>20</b>	<b>22</b>

Professional Core Courses							
Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>
<b>Total</b>				<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>

### Open Elective Courses from other technical and/or emerging subjects

Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits	
				L	T	P		
<b>Theory</b>								
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	
<i>Total Theory</i>				<b>9</b>	<b>0</b>	<b>0</b>	<b>9</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	
<b>Practical/ Sessional</b>							
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
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>32</b>	<b>16</b>
<b>Total</b>				<b>0</b>	<b>0</b>	<b>32</b>	<b>16</b>

### Audit Courses [Environmental Science, Induction Training etc.]

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

## 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	
<b>Theory</b>							
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 Pravah)	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-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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>2</b>	<b>0</b>	<b>11</b>	<b>5.5</b>
<b>Total of First Semester</b>				<b>13</b>	<b>2</b>	<b>11</b>	<b>18.5</b>

### Second Semester (First Year)

Sl No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<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>

<b>Third Semester (Second Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>13</b>	<b>1</b>	<b>0</b>	<b>14</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
<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>13</b>	<b>1</b>	<b>12</b>	<b>20</b>

<b>Fourth Semester (Second Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>17</b>	<b>0</b>	<b>0</b>	<b>17</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				0	0	14	7
<b>Total of Fourth Semester</b>				17	0	14	24

<b>Fifth Semester (Third Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				16	0	0	16
<b>Practical/ Sessional/ Audit Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				1	0	10	6
<b>Total of Fifth Semester</b>				17	0	10	22

<b>Sixth Semester (Third Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				13	0	0	13

<b>Practical/ Sessional/ Audit Course</b>							
1	PC	PC-CS691	Database Management System Laboratory	0	0	4	2
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>				3	0	14	8
<b>Total of Sixth Semester</b>				16	0	14	21

<b>Seventh Semester (Fourth Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				11	0	0	11
<b>Practical/ Sessional/ Audit Course</b>							
1	PW	PW-CS781	Project-II	0	0	6	3
2	PW	PW-CS782	Summer Internship	0	0	6	3
<i>Total Practical/ Sessional/ Audit Course</i>				0	0	12	6
<b>Total of Seventh Semester</b>				11	0	12	17

<b>Eighth Semester (Fourth Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				11	0	0	11
<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>				0	0	10	5
<b>Total of Eighth Semester</b>				11	0	10	16

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

#### A. Specialization in Advanced Machine Intelligence

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
<b>Theory</b>								
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
<i>Total Theory</i>					9	0	0	9
<b>Practical/ Sessional/ Audit Course</b>								
1					0	0	0	0
<i>Total Practical/ Sessional/ Audit Course</i>					0	0	0	0
<b>Total</b>					9	0	0	9

#### B. Specialization in Advanced Computing

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
<b>Theory</b>								
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
<i>Total Theory</i>					9	0	0	9
<b>Practical/ Sessional/ Audit Course</b>								
<i>Total Practical/ Sessional/ Audit Course</i>					0	0	0	0
<b>Total</b>					9	0	0	9

### C. Specialization in Intelligent and Secure Information Systems

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
<b>Theory</b>								
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
<i>Total Theory</i>					9	0	0	9
<b>Practical/ Sessional/ Audit Course</b>								
1					0	0	0	0
<i>Total Practical/ Sessional/ Audit Course</i>					0	0	0	0
<b>Total</b>					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	
<b>Theory</b>								
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
<i>Total Theory</i>					<b>10</b>	<b>0</b>	<b>0</b>	<b>10</b>
<b>Practical/ Sessional/ Audit Course</b>								
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-CS 791A	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
<i>Total Practical/ Sessional/ Audit Course</i>					<b>0</b>	<b>0</b>	<b>10</b>	<b>5</b>
<b>Total</b>					<b>10</b>	<b>0</b>	<b>10</b>	<b>15</b>

## 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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>14</b>	<b>0</b>	<b>0</b>	<b>14</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>12</b>	<b>6</b>
<b>Total</b>				<b>14</b>	<b>0</b>	<b>12</b>	<b>20</b>

### B. Minor Degree in Quantum Technologies

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
1	IV	MN-CS401B	Foundations of Quantum Computing: Physics, Engineering, and Mathematics Computing	4	0	0	4
2	V	MN-CS501B	Survey of Quantum technologies and Applications	4	0	0	4
3	VI	MN-CS601B	Foundations of Quantum Technologies	4	0	0	4
4	VII	MN-CS701B	Introduction to Quantum Communication	4	0	0	4
<i>Total Theory</i>				<b>16</b>	<b>0</b>	<b>0</b>	<b>16</b>

<b>Practical/ Sessional/ Audit Course</b>							
1	IV	MN-CS491B	Computational Skills and Numerical Modelling Laboratory (Basic Programming Lab-I)	0	0	2	1
2	V	MN-CS591B	Quantum Mechanics and EM Modelling Laboratory (Basic Programming Lab-II)	0	0	2	1
3	VI	MN-CS691B	Foundations of Quantum Instrumentation Laboratory (Basic Laboratory Course for Quantum Technologies-I)	0	0	2	1
4	VII	MN-CS791B	Foundations of Quantum Systems Laboratory (Basic Laboratory Course for Quantum Technologies-II)	0	0	2	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>8</b>	<b>4</b>
<b>Total</b>				<b>16</b>	<b>0</b>	<b>4</b>	<b>20</b>

# **Curriculum Structure**

(w.e.f. 2025-26)

for

## **B.Tech in Computer Science and Engineering (Data Science)**

of

**MCKV Institute of Engineering  
(NAAC Accredited Grade-A Autonomous Institute)**

Approved by AICTE

Affiliated to Maulana Abul Kalam Azad University of Technology, West Bengal

(Formerly known as West Bengal University of Technology, West Bengal)



**2025**

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\*Approved in the 11<sup>th</sup> meeting of Academic Council held on 22<sup>nd</sup> July, 2025

*Curriculum Structure for Undergraduate Degree (B.Tech.) in Computer Science and Engineering (Data Science) (w.e.f. AY: 2025-26)*



**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
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>		<b>160</b>	<b>163</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	
<b>Theory</b>							
1	I	HM-HU103	Inculcation of Human Values and Professional Ethics (Mulya Pravah)	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
<i>Total Theory</i>				13	0	0	13
<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>				2	0	4	4
<b>Total</b>				<b>15</b>	<b>0</b>	<b>4</b>	<b>17</b>

<b>Basic Science Courses</b>							
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>8</b>	<b>1</b>	<b>0</b>	<b>9</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>20</b>	<b>10</b>
<b>Total</b>				<b>8</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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>41</b>	<b>2</b>	<b>0</b>	<b>43</b>

#### 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 Laboratory	0	0	3	1.5
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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>
<b>Practical/ Sessional</b>							
<i>Total Practical/ Sessional Course</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>

### Open Elective Courses from other technical and/or emerging subjects

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits	
				L	T	P		
<b>Theory</b>								
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	
<i>Total Theory</i>				9	0	0	9	
<b>Practical/ Sessional</b>								
<i>Total Practical/ Sessional Course</i>				0	0	0	0	
<b>Total</b>				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	
<b>Theory</b>							
<i>Total Theory</i>				0	0	0	0
<b>Practical/ Sessional</b>							
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
<i>Total Practical/ Sessional</i>				0	0	32	16
<b>Total</b>				0	0	32	16

Audit Courses [Environmental Science, Induction Training etc.]							
Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
<i>Total Theory</i>				0	0	0	0
<b>Practical/ Sessional/ Audit</b>							
1	I	AU171	NSS/NCC	2	0	0	0
2	VI	AU671	Environmental Science	2	0	0	0
<i>Total Practical/ Sessional/ Audit Course</i>				4	0	0	0
<b>Total</b>				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	
<b>Theory</b>							
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 Pravah)	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-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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>2</b>	<b>0</b>	<b>11</b>	<b>5.5</b>
<b>Total of First Semester</b>				<b>13</b>	<b>2</b>	<b>11</b>	<b>18.5</b>

### Second Semester (First Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<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>

<b>Third Semester (Second Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>16</b>	<b>1</b>	<b>0</b>	<b>17</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	PC	PC-CS391	Data Structures Laboratory	0	0	4	2
2	PC	PC-CS392	Python for Problem Solving Laboratory	0	0	4	2
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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>16</b>	<b>0</b>	<b>0</b>	<b>16</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>14</b>	<b>7</b>
<b>Total of Fourth Semester</b>				<b>16</b>	<b>0</b>	<b>14</b>	<b>23</b>

### Fifth Semester (Third Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>13</b>	<b>1</b>	<b>0</b>	<b>14</b>

<b>Practical/ Sessional/ Audit Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>1</b>	<b>0</b>	<b>10</b>	<b>6</b>
<b>Total of Fifth Semester</b>				<b>14</b>	<b>1</b>	<b>10</b>	<b>20</b>

<b>Sixth Semester (Third Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>13</b>	<b>0</b>	<b>0</b>	<b>13</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
<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	
<b>Theory</b>							
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-XXXXX	Open Elective - I	3	0	0	3
4	BS	BS-BIO703	Biology for Engineers	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-CS781	Project-II	0	0	6	3
2	PW	PW-CS782	Summer Internship	0	0	6	3
<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	
<b>Theory</b>							
1	PE	PE-CS(D)801	Professional Elective - III	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	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>

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

#### A. Specialization in Advanced Intelligent Learning

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
<b>Theory</b>								
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
<i>Total Theory</i>					<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>
<b>Practical/ Sessional Course</b>								
<i>Total Practical/ Sessional Course</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>

#### B. Specialization in Advanced Data Analysis

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
<b>Theory</b>								
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 Data Warehousing	3	0	0	3
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>					<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>

<b>Practical/ Sessional Course</b>							
<i>Total Practical/ Sessional Course</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>

<b>C. Specialization in Smart Computing</b>								
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Course Title</b>	<b>Contact Hours</b>		<b>Credits</b>	
					<b>L</b>	<b>T</b>		
<b>Theory</b>								
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
<i>Total Theory</i>					<b>9</b>	<b>0</b>	<b>0</b>	<b>9</b>
<b>Practical/ Sessional Course</b>								
<i>Total Practical/ Sessional Course</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>

## 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	
<b>Theory</b>								
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
<i>Total Theory</i>					<b>10</b>	<b>0</b>	<b>0</b>	<b>10</b>
<b>Practical/ Sessional Course</b>								
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
<i>Total Practical/ Sessional Course</i>					<b>0</b>	<b>0</b>	<b>10</b>	<b>5</b>
<b>Total</b>					<b>10</b>	<b>0</b>	<b>10</b>	<b>15</b>

## 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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>14</b>	<b>0</b>	<b>0</b>	<b>14</b>
<b>Practical/ Sessional Course</b>							
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
<i>Total Practical/ Sessional Course</i>				<b>0</b>	<b>0</b>	<b>12</b>	<b>6</b>
<b>Total</b>				<b>14</b>	<b>0</b>	<b>12</b>	<b>20</b>

# **Curriculum Structure**

(w.e.f. 2025-26)

for

## **B.Tech in Electrical Engineering**

of

**MCKV Institute of Engineering**

**(NAAC Accredited Grade-A Autonomous Institute)**

Approved by AICTE

Affiliated to Maulana Abul Kalam Azad University of Technology, West Bengal

(Formerly known as West Bengal University of Technology, West Bengal)



**2025**

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\*Approved in the 11<sup>th</sup> meeting of Academic Council held on 22<sup>nd</sup> July, 2025



# 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
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>		160	176

#### 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	
<b>Theory</b>							
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 Pravah)	2	0	0	2
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
<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
<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>

<b>Basic Science Courses</b>							
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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 Astronomy (Indian Knowledge System IV)	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-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>

<b>Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Electronics/ Mechanical/ Computer etc.</b>							
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>11</b>	<b>1</b>	<b>0</b>	<b>12</b>
<b>Practical/ Sessional/ Audit Course</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 & Design	0	0	4	2
5	III	ES-CS491	Python Programming	0	0	2	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>18</b>	<b>9</b>
<b>Total</b>				<b>11</b>	<b>1</b>	<b>18</b>	<b>21</b>

<b>Professional Core Courses</b>							
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>39</b>	<b>6</b>	<b>0</b>	<b>45</b>
<b>Practical/ Sessional</b>							
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
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>

<b>Professional Elective Courses relevant to chosen specialization/ branch</b>							
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
5	VIII	PE-EE801	Professional Elective-V	3	0	0	3
<i>Total Theory</i>				<b>15</b>	<b>0</b>	<b>0</b>	<b>15</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>15</b>	<b>0</b>	<b>0</b>	<b>15</b>

<b>Open Elective Courses from other technical and/or emerging subjects</b>							
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
1	V		Open Elective -I	2	0	0	2

2	VI	Based on the papers opted from the list of papers offered by other depts.	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	
<i>Total Theory</i>				<b>8</b>	<b>0</b>	<b>0</b>	<b>8</b>	
<b>Practical/ Sessional</b>								
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	
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>8</b>	<b>4</b>	
<b>Total</b>				<b>8</b>	<b>0</b>	<b>8</b>	<b>12</b>	

<b>Project Work, Seminar and Internship in Industry or elsewhere</b>							
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
<i>Total Theory</i>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Practical/ Sessional</b>							
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
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	
<b>Theory</b>							
<i>Total Theory</i>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Practical/ Sessional/ Audit</b>							
1	II	AU271	NSS/NCC	2	0	0	0
2	IV	AU-BS471	Environmental Science	2	0	0	0
<i>Total Practical/ Sessional/ Audit Course</i>				<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>				<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>

## 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	
<b>Theory</b>							
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
<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-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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>13</b>	<b>6.5</b>
<b>Total of First Semester</b>				<b>12</b>	<b>2</b>	<b>13</b>	<b>20.5</b>

### Second Semester (First Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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 Pravah)	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>				2	0	13	6.5
<b>Total of Second Semester</b>				<b>13</b>	<b>2</b>	<b>13</b>	<b>19.5</b>

<b>Third Semester (Second Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>18</b>	<b>1</b>	<b>0</b>	<b>19</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	PC	PC-EE391	Network Analysis Laboratory	0	0	2	1
2	PC	PC-EE393	Analog and Digital Electronics Laboratory	0	0	2	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>
<b>Total of Third Semester</b>				<b>20</b>	<b>1</b>	<b>4</b>	<b>21</b>

<b>Fourth Semester (Second Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>15</b>	<b>1</b>	<b>0</b>	<b>16</b>
<b>Practical/ Sessional/ Audit Course</b>							
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	AU	AU-BS471	Environmental Science	2	0	0	0
<i>Total Practical/ Sessional/ Audit Course</i>				<b>2</b>	<b>0</b>	<b>10</b>	<b>5</b>
<b>Total of Fourth Semester</b>				<b>17</b>	<b>1</b>	<b>10</b>	<b>21</b>

<b>Fifth Semester (Third Year)</b>							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>13</b>	<b>2</b>	<b>0</b>	<b>15</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				3	0	8	7
<b>Total of Fifth Semester</b>				<b>16</b>	<b>2</b>	<b>8</b>	<b>22</b>

<b>Sixth Semester (Third Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>14</b>	<b>2</b>	<b>0</b>	<b>16</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	PC	PC-EE691	Power Electronics Laboratory	0	0	2	1
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>

<b>Seventh Semester (Fourth Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>13</b>	<b>0</b>	<b>0</b>	<b>13</b>

<b>Practical/ Sessional/ Audit Course</b>							
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	OE-XXXXX	Open Elective-IV Laboratory	0	0	2	1
4	PW	PW-EE781	Electrical System Design Laboratory-I	1	0	2	1
5	PW	PW-EE782	Project Stage-I	0	0	6	3
6	PW	PW-EE783	Summer Internship Evaluation	0	0	2	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>1</b>	<b>0</b>	<b>16</b>	<b>8</b>
<b>Total of Seventh Semester</b>				<b>14</b>	<b>0</b>	<b>16</b>	<b>21</b>

<b>Eighth Semester (Fourth Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>7</b>	<b>0</b>	<b>0</b>	<b>7</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>10</b>	<b>6</b>
<b>Total of Eighth Semester</b>				<b>7</b>	<b>0</b>	<b>10</b>	<b>13</b>

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

#### A. Specialization in Power System

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
<b>Theory</b>								
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
<i>Total Theory</i>					<b>15</b>	<b>0</b>	<b>0</b>	<b>15</b>
<b>Practical/ Sessional Course</b>								
<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>

#### B. Specialization in Control and Automation

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					L	T	P	
<b>Theory</b>								
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
<i>Total Theory</i>					<b>15</b>	<b>0</b>	<b>0</b>	<b>15</b>
<b>Practical/ Sessional Course</b>								
<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>

<b>C. Specialization in Sustainable Energy Engineering</b>								
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Course Title</b>	<b>Contact Hours</b>			<b>Credits</b>
					<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>								
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 Elective-IV	Electric and Hybrid Vehicle	3	0	0	3
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>								
<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>

## 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		
<b>Theory</b>									
1	VII	OE-EE 701A	Open Elective-I	Renewable Energy	3	0	0	3	
2	VII	OE-EE 701B		Control System	3	0	0	3	
3	VII	OE-EE 701C		Automation and Control Engineering	3	0	0	3	
4	VIII	OE-EE 801A	Open Elective-II	Power Electronics	2	0	0	2	
5	VIII	OE-EE 801B		Renewable Energy	3	0	0	3	
6	VIII	OE-EE 801C		Electric Vehicle	3	0	0	3	
7	VIII	OE-EE 801D		Robotics and Automation	3	0	0	3	
<i>Total Theory</i>					23	0	0	23	
<b>Practical/ Sessional Course</b>									
1	VII	OE-EE 791A	Open Elective-II Laboratory	Power Electronics Laboratory	0	0	2	1	
<i>Total Practical/ Sessional Course</i>					0	0	2	1	
<b>Total</b>					23	0	2	24	

## 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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>18</b>	<b>0</b>	<b>0</b>	<b>18</b>
<b>Practical/ Sessional Course</b>							
1	VIII	MN-EE881A	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>4</b>	<b>20</b>

### B. Minor Degree in High Voltage Engineering

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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 Transformers and Circuit Breakers	3	0	0	3
<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>

# **Curriculum Structure**

(w.e.f. 2025-26)

for

## **B.Tech in Electronics and Communications Engineering**

of

**MCKV Institute of Engineering**

**(NAAC Accredited Grade-A Autonomous Institute)**

Approved by AICTE

Affiliated to Maulana Abul Kalam Azad University of Technology, West Bengal

(Formerly known as West Bengal University of Technology, West Bengal)



**2025**

243 G.T. Road (N), Liluah, Howrah- 711204, West Bengal, India

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\*Approved in the 11<sup>th</sup> meeting of Academic Council held on 22<sup>nd</sup> July, 2025

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



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

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

**A. Definition of Credit:**

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

**B. Range of Credits:**

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

**C. Category wise Credit Distribution:**

Sl. No.	Category	Credit Allotted	Credit as per AICTE
1	Humanities and Social Sciences including Management Courses	15	15
2	Basic Science Courses	26	23
3	Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.	19	17
4	Professional Core Courses	58	61
5	Professional Elective Courses relevant to chosen specialization/ branch	12	12
6	Open Elective Courses from other technical and/or emerging subjects	12	12
7	Project Work, Seminar and Internship in Industry or elsewhere	17	20
8	Audit Courses [Environmental Science, Induction Training]	0	Non-Credit
<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	
<b>Theory</b>							
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 Pravah)	2	0	0	2
4	IV	HM-HU401	Leadership Skill and Management (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 Value-II (Jeevan Kaushal-IV)	2	0	0	2
<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
<i>Total Practical/ Sessional/ Audit Course</i>				1	0	4	3
<b>Total</b>				13	0	4	15

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

<b>Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Electronics/ Mechanical/ Computer etc.</b>							
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>9</b>	<b>1</b>	<b>0</b>	<b>10</b>
<b>Practical/ Sessional/ Audit Course</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
5	III	ES-EC391	Numerical Techniques Laboratory	0	0	2	1
6	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>

<b>Professional Core Courses</b>							
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>44</b>	<b>0</b>	<b>0</b>	<b>44</b>
<b>Practical/ Sessional</b>							
1	III	PC-EC391	Electronic Devices Laboratory	0	0	2	1
2	III	PC-EC392	Analog Electronic Circuits Laboratory	0	0	2	1
3	III	PC-EC394	Network Theory Laboratory	0	0	2	1
4	III	PC-EC395	Data Structure Laboratory	0	0	2	1
5	IV	PC-EC491	Digital System Design Laboratory	0	0	2	1
6	IV	PC-EC492	Microprocessor and Microcontrollers Laboratory	0	0	2	1
7	IV	PC-EC493	Control Systems Laboratory	0	0	2	1
8	V	PC-EC591	Analog and Digital Communication Laboratory	0	0	2	1
9	V	PC-EC592	Electromagnetic Waves and Transmission Line Laboratory	0	0	2	1
10	V	PC-EC593	Computer Architecture Laboratory	0	0	2	1
11	VI	PC-EC691	Computer Networks Laboratory	0	0	2	1
12	VI	PC-EC692	Embedded System and VLSI Design Laboratory	0	0	2	1
13	VI	PC-EC693	Operating System Laboratory	0	0	2	1
14	VI	PC-EC694	Digital Signal Processing Laboratory	0	0	2	1
<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>

<b>Professional Elective Courses relevant to chosen specialization/ branch</b>							
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>

Practical/ Sessional							
<i>Total Practical/ Sessional</i>				0	0	0	0
<b>Total</b>				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		
<b>Theory</b>								
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	
<i>Total Theory</i>				9	0	0	9	
<b>Practical/ Sessional</b>								
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	
<i>Total Practical/ Sessional</i>				9	0	6	3	
<b>Total</b>				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	
<b>Theory</b>							
<i>Total Theory</i>				0	0	0	0
<b>Practical/ Sessional</b>							
1	II	PW-BS281	Ideation Laboratory	0	0	2	1
2	IV	PW-EC481	Micro Project	0	0	4	2
3	VI	PW-EC681	Mini Project	0	0	6	3

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

<b>Audit Courses</b> <b>[Environmental Science, Induction Training etc.]</b>							
Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
1	IV	AU-EC492	Idea Laboratory	2	0	4	0
<i>Total Theory</i>				2	0	4	0
<b>Practical/ Sessional/ Audit</b>							
1	II	AU271	NSS/NCC	2	0	0	0
2	III	AU-BS371	Environmental Science	2	0	0	0
<i>Total Practical/ Sessional/ Audit Course</i>				4	0	0	0
<b>Total</b>				6	0	4	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	
<b>Theory</b>							
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
<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-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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>11</b>	<b>6.5</b>
<b>Total of First Semester</b>				<b>12</b>	<b>2</b>	<b>11</b>	<b>20.5</b>

### Second Semester (First Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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 Pravah)	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>				2	0	13	6.5
<b>Total of Second Semester</b>				13	2	13	19.5

<b>Third Semester (Second Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
1	PC	PC-EC301	Electronic Devices	3	0	0	3
2	PC	PC-EC302	Analog Electronic Circuits	3	0	0	3
3	PC	PC-EC303	Signals and Systems	3	0	0	3
4	PC	PC-EC304	Network Theory	3	0	0	3
5	PC	PC-EC305	Data Structure and Algorithm	3	0	0	3
6	ES	ES-EC301	Numerical Techniques	2	0	0	2
<i>Total Theory</i>				17	0	0	17
<b>Practical/ Sessional/ Audit Course</b>							
1	AU	AU-BS371	Environmental Science	2	0	0	0
2	PC	PC-EC391	Electronic Devices Laboratory	0	0	2	1
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>				2	0	10	5
<b>Total of Third Semester</b>				19	0	10	22

### Fourth Semester (Second Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>17</b>	<b>0</b>	<b>0</b>	<b>17</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>2</b>	<b>0</b>	<b>14</b>	<b>5</b>
<b>Total of Fourth Semester</b>				<b>19</b>	<b>0</b>	<b>14</b>	<b>22</b>

### Fifth Semester (Third Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>16</b>	<b>0</b>	<b>0</b>	<b>16</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>1</b>	<b>0</b>	<b>10</b>	<b>7</b>
<b>Total of Fifth Semester</b>				<b>18</b>	<b>0</b>	<b>10</b>	<b>23</b>

<b>Sixth Semester (Third Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<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	
<b>Theory</b>							
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-XXXXXX	Open Elective-II	2	0	0	2
4	OE	OE-XXXXXX	Open Elective-III	3	0	0	3
<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-EC781	Seminar	0	0	2	1
2	PW	PW-EC782	Internship	0	0	4	2
3	PW	PW-EC783	Project-I	0	0	4	2
4	OE	OE-XXXXXX	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	
<b>Theory</b>							
1	OE	OE-XXXXXX	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
<i>Total Theory</i>				<b>6</b>	<b>0</b>	<b>0</b>	<b>6</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	PW	PW-EC881	Project-II	0	0	12	6
2	PW	PW-EC882	Comprehensive Viva Voce	0	0	0	1
3.	OE	OE-XXXXXX	Open Elective-IV Laboratory	0	0	2	1
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>14</b>	<b>8</b>
<b>Total of Eighth Semester</b>				<b>6</b>	<b>0</b>	<b>14</b>	<b>14</b>

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

#### A. Specialization in 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

<i>Total Practical/ Sessional Course</i>					<b>0 0 0 0</b>			
<b>Total</b>					<b>12 0 0 12</b>			

#### B. Specialization in 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 B. Advanced Microcontroller and Its Applications C. Photonics	3	0	0	3
2	VI	PE-EC601B	Professional Elective-II	A. FPGA based System Design B. Image Processing	3	0	0	3

				and its applications				
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>								
<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>	

<b>C. Specialization in Advanced Communication and Signal Processing</b>								
Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours		Credits	
					L	T		
<b>Theory</b>								
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 B. Satellite Communication C. 5G Communication	3	0	0	3
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>								
<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>	

## 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		
<b>Theory</b>									
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 Signaling 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	
<i>Total Theory</i>					<b>30</b>	<b>0</b>	<b>0</b>	<b>30</b>	
<b>Practical/ Sessional Course</b>									
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	
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>	

## 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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>15</b>	<b>0</b>	<b>0</b>	<b>15</b>
<b>Practical/ Sessional Course</b>							
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
<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 VLSI Design and Technology (for students of other departments only)

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>15</b>	<b>0</b>	<b>0</b>	<b>15</b>

<b>Practical/ Sessional Course</b>							
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
<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>



# **Curriculum Structure**

(w.e.f. 2025-26)

for

## **B.Tech in Information Technology**

of

**MCKV Institute of Engineering**

**(NAAC Accredited Grade-A Autonomous Institute)**

Approved by AICTE

Affiliated to Maulana Abul Kalam Azad University of Technology, West Bengal

(Formerly known as West Bengal University of Technology, West Bengal)



**2025**

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\*Approved in the 11<sup>th</sup> meeting of Academic Council held on 22<sup>nd</sup> July, 2025



# Curriculum for Undergraduate Degree

## B.Tech. in Information Technology

### (w.e.f. AY: 2025-26)

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

##### **A. Definition of Credit:**

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

##### **B. Range of Credits:**

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

##### **C. Category wise Credit Distribution:**

Sl. No.	Category	Credit Allotted	Credit as per AICTE
1	Humanities and Social Sciences including Management Courses	18	12
2	Basic Science Courses	29	25
3	Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.	21.5	24
4	Professional Core Courses	51.5	48
5	Professional Elective Courses relevant to chosen specialization/ branch	12	18
6	Open Elective Courses from other technical and/or emerging subjects	9	18
7	Project Work, Seminar and Internship in Industry or elsewhere	19	15
8	Audit Courses [Environmental Sciences, Induction Training]	0	Non-Credit
<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	
<b>Theory</b>							
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 Pravah)	2	0	0	2
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>				13	0	0	13
<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>				3	0	4	5
<b>Total</b>				<b>16</b>	<b>0</b>	<b>4</b>	<b>18</b>

<b>Basic Science Courses</b>							
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
1	I	BS-CH101	Chemistry	3	0	0	3
2	I	BS-M101	Mathematics-I	3	1	0	4
3	II	BS-M201	Mathematics-II	3	1	0	4
4	II	BS-PH201	Physics	3	1	0	4
5	III	BS-M301	Mathematics-III	3	0	0	3
6	IV	BS-M401	Vedic Mathematics (Indian Knowledge System -II)	2	0	0	2
7	V	BS-M501	Basics of Indian Astronomy (Indian Knowledge System-III)	2	0	0	2
8	VI	BS-BIO601	Biology for Engineers	2	0	0	2
9	VIII	BS-M801	Introduction to Indian Astronomy (Indian Knowledge System -IV)	2	0	0	2
<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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>11</b>	<b>1</b>	<b>0</b>	<b>12</b>
<b>Practical/ Sessional/ Audit Course</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
5	III	ES-EC391	Analog and Digital Electronics Laboratory	0	0	3	1.5
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>19</b>	<b>9.5</b>
<b>Total</b>				<b>11</b>	<b>1</b>	<b>19</b>	<b>21.5</b>

## Professional Core Courses

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				33	1	0	34
<b>Practical/ Sessional</b>							
1	III	PC-IT391	Data Structure and Algorithms Laboratory	0	0	3	1.5
2	III	PC-IT392	Computer Organization and Architecture Laboratory	0	0	3	1.5
3	III	PC-IT393	IT Workshop using Python	1	0	3	2.5
4	IV	PC-IT492	Database Management System Laboratory	0	0	3	1.5
5	IV	PC-IT493	Design and Analysis of Algorithms Laboratory	0	0	3	1.5
6	IV	PC-IT494	Object Oriented Programming Laboratory	0	0	3	1.5
7	V	PC-IT591	Machine Learning Laboratory	0	0	3	1.5
8	V	PC-IT592	Operating System Lab	0	0	3	1.5
9	VI	PC-IT691	Software Engineering Laboratory	0	0	3	1.5
10	VI	PC-IT692	Computer Networks Laboratory	0	0	3	1.5
11	VII	PC-IT791	Compiler Design Laboratory	0	0	3	1.5
<i>Total Practical/ Sessional</i>				1	0	33	17.5
<b>Total</b>				34	1	33	51.5

<b>Professional Elective Courses relevant to chosen specialization/ branch</b>							
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
1	VI	PE-IT601	Professional Elective-I	3	0	0	3
2	VI	PE-IT602	Professional Elective-II	3	0	0	3
3	VII	PE-IT701	Professional Elective-III	3	0	0	3
4	VIII	PE-IT801	Professional Elective-IV	3	0	0	3
<i>Total Theory</i>				12	0	0	12
<b>Practical/ Sessional</b>							
<i>Total Practical/ Sessional</i>				0	0	0	0
<b>Total</b>				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		
<b>Theory</b>								
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	
<i>Total Theory</i>				9	0	0	9	
<b>Practical/ Sessional</b>								
<i>Total Practical/ Sessional</i>				0	0	0	0	
<b>Total</b>				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	
<b>Theory</b>							
<i>Total Theory</i>				0	0	0	0
<b>Practical/ Sessional</b>							
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
<i>Total Practical/ Sessional</i>				0	0	34	19
<b>Total</b>				0	0	34	19

**Audit Courses**  
**[Environmental Science, Induction Training etc.]**

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
<i>Total Theory</i>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Practical/ Sessional/ Audit</b>							
1	I	AU-271	NSS/NCC	2	0	0	0
2	II	AU-BS371	Environmental Science	2	0	0	0
<i>Total Practical/ Sessional/ Audit Course</i>				<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>				<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>

## 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	
<b>Theory</b>							
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
<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-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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>13</b>	<b>6.5</b>
<b>Total of First Semester</b>				<b>12</b>	<b>2</b>	<b>13</b>	<b>20.5</b>

### Second Semester (First Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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 Pravah)	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>

**Practical/ Sessional/ Audit 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
<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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>3</b>	<b>0</b>	<b>12</b>	<b>7</b>
<b>Total of Third Semester</b>				<b>15</b>	<b>0</b>	<b>12</b>	<b>19</b>

**Fourth Semester (Second Year)**

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>16</b>	<b>0</b>	<b>0</b>	<b>16</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>13</b>	<b>6.5</b>
<b>Total of Fourth Semester</b>				<b>19</b>	<b>0</b>	<b>13</b>	<b>22.5</b>

<b>Fifth Semester (Third Year)</b>							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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	
<b>Theory</b>							
1	PC	PC-IT601	Software Engineering	3	0	0	3
2	PC	PC-IT602	Computer Networks	3	0	0	3
3	PE	PE-IT601	Professional Elective-I	3	0	0	3
4	PE	PE-IT602	Professional Elective-II	3	0	0	3
5	BS	BS-BIO601	Biology for Engineers	2	0	0	2
<i>Total Theory</i>				<b>14</b>	<b>0</b>	<b>0</b>	<b>14</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
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	
<b>Theory</b>							
1	PC	PC-IT701	Compiler Design	3	0	0	3
2	PE	PE-IT701	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
<i>Total Theory</i>				<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>11</b>	<b>6.5</b>
<b>Total of Seventh Semester</b>				<b>12</b>	<b>0</b>	<b>11</b>	<b>18.5</b>

<b>Eighth Semester (Fourth Year)</b>							
<b>Sl. No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
1	PE	PE-EC801	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 (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	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	
<b>Theory</b>								
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
<i>Total Theory</i>					12	0	0	12
<b>Practical/ Sessional Course</b>								
<i>Total Practical/ Sessional Course</i>					0	0	0	0
<b>Total</b>					12	0	0	12

#### B. Specialization in Data Science

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits
					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>					12	0	0	12
<b>Practical/ Sessional Course</b>								
<i>Total Practical/ Sessional Course</i>					0	0	0	0
<b>Total</b>					12	0	0	12

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

## 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			
<b>Theory</b>										
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		
<i>Total Theory and Practical</i>					22	0	10	27		
<b>Total</b>					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	
<b>Theory</b>							
1	IV	MN-IT401A	E-commerce and ERP	3	0	0	3
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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>15</b>	<b>0</b>	<b>0</b>	<b>15</b>
<b>Practical/ Sessional Course</b>							

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
<i>Total Practical/ Sessional Course</i>				0	0	10	5
<b>Total</b>				<b>15</b>	<b>0</b>	<b>10</b>	<b>20</b>

**C. Minor Degree in AI and ML**  
**(for students of other departments only)**

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>15</b>	<b>0</b>	<b>0</b>	<b>15</b>
<b>Practical/ Sessional Course</b>							
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
<i>Total Practical/ Sessional Course</i>				0	0	10	5
<b>Total</b>				<b>15</b>	<b>0</b>	<b>10</b>	<b>20</b>



# **Curriculum Structure**

(w.e.f. 2025-26)

for

## **B.Tech in Mechanical Engineering**

of

**MCKV Institute of Engineering**

**(NAAC Accredited Grade-A Autonomous Institute)**

Approved by AICTE

Affiliated to Maulana Abul Kalam Azad University of Technology, West Bengal

(Formerly known as West Bengal University of Technology, West Bengal)



**2025**

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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 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	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	Audit Courses [Environmental Sciences, Induction Training]	Non-Credit	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	
<b>Theory</b>							
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 Pravah)	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
<i>Total Theory</i>				<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>
<b>Practical/ Sessional/ Mandatory Course</b>							
1	I	HM-HU191	Language Laboratory	1	0	2	2
2	V	HM-HU591	Professional Skill (Jeevan Kaushal-II)	1	0	2	2
<i>Total Practical/ Sessional/ Mandatory Course</i>				<b>2</b>	<b>0</b>	<b>4</b>	<b>4</b>
<b>Total</b>				<b>14</b>	<b>0</b>	<b>4</b>	<b>16</b>

### Basic Science Courses

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				22	4	0	26
<b>Practical/ Sessional/ Mandatory 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/ Mandatory Course</i>				0	0	6	3
<b>Total</b>				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	
<b>Theory</b>							
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
5	V	ES-ME501	Operation Research	3	0	0	3
<i>Total Theory</i>				14	2	0	16
<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>				0	0	16	8
<b>Total</b>				14	2	16	24

### Professional Core Courses

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>42</b>	<b>8</b>	<b>0</b>	<b>50</b>
<b>Practical/ Sessional</b>							
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
5	VI	PC-ME691	Mechanical Engineering Laboratory-III (Applied Mechanics and Kinematics)	0	0	3	1.5
6	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	
<b>Theory</b>							
1	VI	PE-ME601	Professional Elective-I	3	0	0	3
2	VI	PE-ME602	Professional Elective-II	3	0	0	3
3	VII	PE-ME701	Professional Elective-III	3	0	0	3
4	VII	PE-ME702	Professional Elective-IV	3	0	0	3
<i>Total Theory</i>				12	0	0	12
<b>Practical/ Sessional</b>							
<i>Total Practical/ Sessional</i>				0	0	0	0
<b>Total</b>				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		
<b>Theory</b>								
1	VII	Based on the papers opted from the list of papers offered by other depts.	Open Elective-I	3	0	0	3	
2	VII		Open Elective-II	3	0	0	3	
3	VIII		Open Elective-III	3	0	0	3	
<i>Total Theory</i>				9	0	0	9	
<b>Practical/ Sessional</b>								
<i>Total Practical/ Sessional</i>				0	0	0	0	
<b>Total</b>				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	
<b>Theory</b>							
<i>Total Theory</i>				0	0	0	0

<b>Practical/ Sessional</b>							
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
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>20</b>	<b>11</b>
<b>Total</b>				<b>0</b>	<b>0</b>	<b>20</b>	<b>11</b>

<b>Audit Courses</b> <b>[Environmental Sciences, Induction Training etc.]</b>							
<b>Sl. No.</b>	<b>Semester</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Contact Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
<i>Total Theory</i>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Practical/ Sessional</b>							
1	II	AU271	NSS/NCC	2	0	0	0
2	III	AU-BS371	Environmental Sciences	2	0	0	0
<i>Total Practical/ Sessional</i>				<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total</b>				<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>

## 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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>12</b>	<b>2</b>	<b>0</b>	<b>14</b>
<b>Practical/ Sessional</b>							
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
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>11</b>	<b>6.5</b>
<b>Total of First Semester</b>				<b>12</b>	<b>2</b>	<b>11</b>	<b>20.5</b>

### Second Semester (First Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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 Pravah)	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</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>

<b>Third Semester (Second Year)</b>							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>17</b>	<b>3</b>	<b>0</b>	<b>18</b>
<b>Practical/ Sessional</b>							
1	PC	PC-ME391	Basic Manufacturing Processes Laboratory	0	0	3	1.5
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>3</b>	<b>1.5</b>
<b>Total of Third Semester</b>				<b>19</b>	<b>3</b>	<b>3</b>	<b>19.5</b>

<b>Fourth Semester (Second Year)</b>							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>17</b>	<b>3</b>	<b>0</b>	<b>22</b>
<b>Practical/ Sessional</b>							
1	PC	PC-ME491	Metrology and Instrumentation Laboratory	0	0	3	1.5
2	PW	PW-ME481	Project-I	0	0	2	1
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>3</b>	<b>2.5</b>
<b>Total of Fourth Semester</b>				<b>19</b>	<b>3</b>	<b>3</b>	<b>24.5</b>

<b>Fifth Semester (Third Year)</b>							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>15</b>	<b>3</b>	<b>0</b>	<b>18</b>
<b>Practical/ Sessional</b>							
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>				<b>3</b>	<b>0</b>	<b>10</b>	<b>7</b>
<b>Total of Fifth Semester</b>				<b>17</b>	<b>3</b>	<b>10</b>	<b>24</b>

### Sixth Semester (Third Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>17</b>	<b>1</b>	<b>0</b>	<b>18</b>
<b>Practical/ Sessional</b>							
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
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>5</b>	<b>2.5</b>
<b>Total of Sixth Semester</b>				<b>17</b>	<b>1</b>	<b>5</b>	<b>20.5</b>

### Seventh Semester (Fourth Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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-XXXXX	Open Elective-I	3	0	0	3
<i>Total Theory</i>				<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>
<b>Practical/ Sessional</b>							
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>

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

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

#### A. Specialization in Thermal Engineering

Sl. No.	Semester	Course Name	Course Code	Course Title	L	T	P	Credit		
<b>Theory</b>										
1	VI	Professional Elective-I	PE-ME601AA	Internal Combustion Engines and Gas Turbines	3	0	0	3		
			PE-ME601AB	Turbo Machinery						
2	VI	Professional Elective-II	PE-ME602AA	Refrigeration and Air Conditioning	3	0	0	3		
			PE-ME602AB	Renewable Energy Engineering						
3	VII	Professional Elective-III	PE- ME701AA	Automobile Engineering	3	0	0	3		
			PE- ME701AB	Gas Dynamics and Jet Propulsion						
4	VII	Professional Elective-IV	PE-ME702AA	Advanced Welding Technology	3	0	0	3		
			PE-ME702AB	Nuclear Engineering						
<i>Total Theory</i>					12	0	0	12		
<b>Practical/ Sessional Course</b>										
<i>Total Practical/ Sessional Course</i>					0	0	0	0		
<b>Total</b>					12	0	0	12		

#### B. Specialization in Smart Manufacturing

Sl. No.	Semester	Course Name	Course Code	Course Title	L	T	P	Credit
<b>Theory</b>								
1	VI	Professional Elective-I	PE-ME601BA	Digital Twin	3	0	0	3
			PE-ME601BB	Industrial AI				
2	VI	Professional Elective-II	PE-ME602BA	Robotics in Manufacturing	3	0	0	3
			PE-ME602BB	Predictive Maintenance and Sustainability				
3	VII	Professional Elective-III	PE- ME701BA	Additive Manufacturing	3	0	0	3
			PE- ME701BB	Sensors and Actuators				

4	VII	Professional Elective-IV	PE-ME702BA	Smart Materials and Applications	3	0	0	3		
			PE-ME702BB	Decision Analytics and Supply Chain Management						
<i>Total Theory</i>					<b>12</b>	<b>0</b>	<b>0</b>	<b>12</b>		
<b>Practical/ Sessional Course</b>										
<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>		

## Part IV: List of Open Elective Papers

### Open Elective Papers offered by ME department

Sl. No.	Semester	Course Code	Course Name	Course Title	Contact Hours			Credits		
					L	T	P			
<b>Theory</b>										
1	VIII	OE-ME801A	Open Elective-I	Introduction to Robotics	3	0	0	3		
2		OE-ME801B		3D Printing	3	0	0	3		
<i>Total Theory and Practical</i>					<b>6</b>	<b>0</b>	<b>0</b>	<b>6</b>		
<b>Total</b>					<b>6</b>	<b>0</b>	<b>0</b>	<b>6</b>		

## Part V: Curriculum Structure for Minor Degree

### A. Minor Degree in Sustainable Energy Engineering

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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	4	0	0	4
6	VIII	MN-ME802A	Solar Energy System Installations and Maintenance	4	0	0	4
<i>Total Theory</i>				<b>20</b>	<b>0</b>	<b>0</b>	<b>20</b>
<b>Practical/ Sessional</b>							
<i>Total Practical/ Sessional</i>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total of Minor Degree</b>				<b>20</b>	<b>0</b>	<b>0</b>	<b>20</b>

# **Curriculum Structure**

(w.e.f. 2025-26)

for

## **UG and PG Degree Management Programs**

of

**MCKV Institute of Engineering**

**(NAAC Accredited Grade-A Autonomous Institute)**

Approved by AICTE

Affiliated to Maulana Abul Kalam Azad University of Technology, West Bengal

(Formerly known as West Bengal University of Technology, West Bengal)



**2025**

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\*Approved in the 11<sup>th</sup> meeting of Academic Council held on 22<sup>nd</sup> July, 2025



# **Curriculum Structure**

(w.e.f. 2025-26)

for

## **Bachelor of Business Administration (BBA)**

of

**MCKV Institute of Engineering**

**(NAAC Accredited Grade-A Autonomous Institute)**

Approved by AICTE

Affiliated to Maulana Abul Kalam Azad University of Technology, West Bengal

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# **Curriculum for Undergraduate Degree**

## **Bachelor of Business Administration**

### **(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 plug ability 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 sync with NEP.

**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)

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. BBA (Honours):** Minimum 60% marks or equivalent CGPA in BBA Degree up to Sixth Semester.

**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

## Course Structure & Semester wise Credit Distribution

### First Semester (First Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>14</b>	<b>3</b>	<b>0</b>	<b>17</b>
<b>Practical/ Sessional/ Audit Course</b>							
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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>12</b>	<b>6</b>
<b>Total of First Semester</b>				<b>14</b>	<b>3</b>	<b>12</b>	<b>23</b>

### Second Semester (First Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
1	BS	BBA-MJ-201	Environmental and Sustainable Development	3	1	0	4
2	MS	BBA-MJ-202	Managerial Economics	3	1	0	4

*Curriculum for Bachelor of Business Administration (BBA) (w.e.f. AY: 2025-26)*

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
<i>Total Theory</i>				<b>13</b>	<b>4</b>	<b>0</b>	<b>17</b>
<b>Practical/ Sessional/ Audit Course</b>							
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-292	Mental Health	0	0	2	1
4	CVAC	MAR	NSS/NCC	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 Second Semester</b>				<b>13</b>	<b>4</b>	<b>12</b>	<b>23</b>

<b>Third Semester (Second Year)</b>							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
1	MS	BBA-MJ-301	Organizational Behaviour	3	1	0	4
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 with C	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 with C	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	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>15</b>	<b>4</b>	<b>0</b>	<b>19</b>
<b>Practical/ Sessional/ Audit Course</b>							
1	MS	BBA-MI-494	Business Research Method-I	0	0	2	1
2	CVAC	MAR	NSS/NCC	0	0	2	1*
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>
<b>Total of Fourth Semester</b>				<b>15</b>	<b>4</b>	<b>4</b>	<b>21</b>

### Fifth Semester (Third Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
1	MS	BBA-MJ-501	Entrepreneurship and Skill Development	2	0	0	2
2	MS	BBA-MJ-MM-502 BBA-MJ-FM-502 BBA-MJ-HR-502	Sales and Distribution Management/ Financial Markets and Institutions and Financial Services / Industrial Relations	3	1	0	4
3	MS	BBA-MJ-MM-503 BBA-MJ-FM-503 BBA-MJ-HR-503	Consumer Behaviour / Elements of Taxation /	3	1	0	4

			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
<i>Total Theory</i>				<b>12</b>	<b>2</b>	<b>0</b>	<b>14</b>

#### 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
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>14</b>	<b>7</b>
<b>Total of Fifth Semester</b>				<b>12</b>	<b>2</b>	<b>14</b>	<b>21</b>

### Sixth Semester (Third Year)

Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
<i>Total Theory</i>				<b>9</b>	<b>7</b>	<b>0</b>	<b>16</b>
<b>Practical/ Sessional/ Audit Course</b>							
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	<b>MAR</b>	NSS/NCC			2	1*
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>10</b>	<b>5</b>
<b>Total of Sixth Semester</b>				<b>9</b>	<b>7</b>	<b>10</b>	<b>21</b>

Seventh Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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
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>				9	3	0	12
<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>				0	0	16	8
<b>Total of Seventh Semester</b>				9	3	16	20

Eighth Semester (Fourth Year)							
Sl. No.	Category	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
<b>Theory</b>							
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 Financial Human Analytics / Analytics / Analytics / Resource Analytics	4	0	0	4
<i>Total Theory</i>				8	0	0	8

<b>Practical/ Sessional/ Audit Course</b>							
1	CVAC	BBA-RH-891	Research Project (Only for BBA Honours with research)	0	0	24	12
<i>Total Practical/ Sessional/ Audit Course</i>				<b>0</b>	<b>0</b>	<b>24</b>	<b>12</b>
<b>Total of Eighth Semester</b>				<b>8</b>	<b>0</b>	<b>24</b>	<b>20</b>

## **Finance Specialization**

<b>Semester</b>	<b>Paper Name</b>	<b>Paper Code</b>	<b>Credit</b>
5 <sup>th</sup> SEM	Financial Markets and Institutions and Financial Services	BBA-MJ-FM-502	4
	Elements of Taxation	BBA-MJ-FM-503	4
7 <sup>th</sup> SEM	Management Accounting	BBA-MJ-FM-701	4
8 <sup>th</sup> SEM	Security Analysis and Portfolio Management	BBA-MJ-FM-801	4
	Financial analytics	BBA-MJ-FM-802	4

## **Marketing Specialization**

<b>Semester</b>	<b>Paper Name</b>	<b>Paper Code</b>	<b>Credit</b>
5 <sup>th</sup> SEM	Sales and Distribution Management	BBA-MJ-MM-502	4
	Consumer Behaviour	BBA-MJ-MM-503	4
7 <sup>th</sup> SEM	Service Marketing	BBA-MJ-MM- 701	4
8 <sup>th</sup> SEM	Customer Relationship Management	BBA-MJ-MM-801	4
	Marketing analytics	BBA-MJ-MM-802	4

## **Human Resource Management Specialization**

<b>Semester</b>	<b>Paper Name</b>	<b>Paper Code</b>	<b>Credit</b>
5 <sup>th</sup> SEM	Industrial Relations	BBA-MJ-HR-502	4
	Human Resource Development	BBA-MJ-HR-503	4
7 <sup>th</sup> SEM	Recruitment and Selection	BBA-MJ-HR-701	4
8 <sup>th</sup> SEM	Compensation Management	BBA-MJ-HR-801	4
	Human Resource Analytics	BBA-MJ-HR-802	4



# **Curriculum Structure**

(w.e.f. 2025-26)

for

## **Masters of Business Administration (MBA)**

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# **Curriculum for Postgraduate Degree Masters of Business Administration (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 and PGDM), 2018.

#### **Course**

- Two-Year full-time MBA course (Four-Semester).
- Minimum number of class room contact teaching for MBA program should be 106 credits (one credit equals 10 hours) and Internship / Project should be 06 credits i.e., Total=106+06=112 credits.
- Specialization: Students can opt for any two functional specializations (One Major Area and one Minor Area) from Marketing, Finance, HRM, and Business Analytics
- Marks per paper:100(70-End Term Examination, 30-Internal)

#### **Course Structure**

- **Regular Course**

<b>Semester</b>	<b>Paper</b>	<b>Credit(1 =4credit)</b>	<b>Contact Hrs. (1=10 hrs.)</b>
I(C*)	7	24	240
II (C*)+1 Project	9	30	300
III(1C*+6E**)	1	6	60
Internship/Project#	7	26	260
IV(1C*+6E**)	7	26	260
<b>Course Total</b>	<b>31</b>	<b>112</b>	<b>1120</b>

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

- **Total Credits:** 112

### **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 (8 Weeks)

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

- Total Marks= 100 (70–End Term Examination, 30–Internal)
- Internal: Weightage: 30 (Class Test, Presentation &Viva)
- Paper wise Class Test= 2 Tests+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 Project Marks/Sessional (100): Project Report (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 2025–26.
- ❖ All rules and regulations regarding admission, examination, registration, migration and others shall be according to Institutional norms.

## CURRICULUM

### **Core Courses (Four/Semester)**

<b>Semester I</b>							
<b>Sl No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Conduct Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
1	Core	MBA 101	Managerial Economics	4	0	0	4
2	Core	MBA 102	Financial Reporting, Statement & Analysis	4	0	0	4
3	Core	MBA 103	Management Theory & OB	4	0	0	4
4	Core	MBA 104	Business Environment Ethics & Law	4	0	0	4
5	Core	MBA 105	Business Statistics & Quantitative Techniques	4	0	0	4
6	Core	MBA 106	Corporate Communications	2	0	0	2
<i>Total Theory</i>				<b>22</b>	<b>0</b>	<b>0</b>	<b>22</b>
<b>Practical/ Training</b>							
1	Practical	MBA 191	Advanced Excel, SPSS & R Lab	0	0	4	2
	<i>Total Practical/ Training</i>			<b>0</b>	<b>0</b>	<b>4</b>	<b>2</b>
<b>Total Credit of Semester I</b>				<b>22</b>	<b>0</b>	<b>4</b>	<b>24</b>

<b>Semester II</b>							
<b>Sl No.</b>	<b>Category</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Conduct Hours</b>			<b>Credits</b>
				<b>L</b>	<b>T</b>	<b>P</b>	
<b>Theory</b>							
1	Core	MBA 201	Marketing Management	4	0	0	4
2	Core	MBA 202	Operations & Supply Chain Management	4	0	0	4
3	Core	MBA 203	Human Resource Management	4	0	0	4
4	Core	MBA 204	Business Research Methods	2	0	0	2
5	Core	MBA 205	Financial and Cost Management	4	0	0	4
6	Core	MBA 206	Business Analytics & Information System	3	0	2	4
7	Core	MBA 207	Operations Research	4	0	0	4
	<i>Total Theory</i>			<b>25</b>	<b>0</b>	<b>2</b>	<b>26</b>
<b>Practical/ Training</b>							
1	Practical	MBA 291	Personality Development Lab	0	0	4	2
2	Practical	MBA 292	BRM Project	0	0	4	2

<i>Total Practical/ Training</i>	0	0	8	4
<b>Total Credit of Semester II</b>	25	0	10	30

Summer Internship =6 Credits

Semester III							
Sl No.	Category	Course Code	Course Name	Conduct Hours			Credits
				L	T	P	
<b>Theory</b>							
1	Core	MBA 301	Strategic Management	2	0	0	2
2	Elective (Major)	MBA -MM/HR/BA/FM-302	Major -1	4	0	0	4
3	Elective (Major)	MBA -MM/HR/BA/FM-303	Major -2	4	0	0	4
4	Elective (Major)	MBA -MM/HR/BA/FM-304	Major -3	4	0	0	4
5	Elective (Major)	MBA -MM/HR/BA/FM-305	Major -4	4	0	0	4
6	Elective (Minor)	MBA- MM/FM/HR/HA/PM 302/BA 304	Minor-1	4	0	0	4
7	Elective (Minor)	MBA- MM/FM/HR/HA/PM 303/BA 305	Minor-2	4	0	0	4
<i>Total Theory</i>				<b>26</b>	<b>0</b>	<b>0</b>	<b>26</b>
<b>Practical/ Training</b>							
1	Project	MBA 381	Summer Internship	0	0	0	6
		<i>Total Practical/ Training</i>		<b>0</b>	<b>0</b>	<b>0</b>	<b>6</b>
<b>Total Credit of Semester III</b>				<b>0</b>	<b>0</b>	<b>0</b>	<b>32</b>

Semester IV							
Sl No.	Category	Course Code	Course Name	Conduct Hours			Credits
				L	T	P	
<b>Theory</b>							
1	Core	MBA 401	Entrepreneurship Development	2	0	0	2
2	Elective (Major)	MBA -MM/HR/BA/FM-402	Major -1	4	0	0	4
3	Elective (Major)	MBA -MM/HR/BA/FM-403	Major -2	4	0	0	4
4	Elective (Major)	MBA -MM/HR/BA/FM-404	Major -3	4	0	0	4
5	Elective (Major)	MBA -MM/HR/BA/FM-405	Major -4	4	0	0	4

6	Elective (Minor)	MBA-MM/HR/BA/HA/PM402, FM-403	Minor-1	4	0	0	4
7	Elective (Minor)	MBA-MM/BA/HR 404/FM 405/HA/PM-403	Minor-2	4	0	0	4
<i>Total Theory</i>				<b>26</b>	<b>0</b>	<b>0</b>	<b>26</b>
<b>Practical/ Training</b>							
1	Viva	MBA 481	Grand Viva	0	0	0	0
<i>Total Practical/ Training</i>				<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Total Credit of Semester IV</b>				<b>0</b>	<b>0</b>	<b>0</b>	<b>26</b>

### **FIRST SEMESTER**

<b>SL NO</b>	<b>COURSE CODE</b>	<b>COURSE NAME</b>
<b>1</b>	MBA 101	Managerial Economics
<b>2</b>	MBA 102	Financial Reporting, Statement & Analysis
<b>3</b>	MBA 103	Management Theory & OB
<b>4</b>	MBA 104	Business Environment Ethics & Law
<b>5</b>	MBA 105	Business Statistics & Quantitative Techniques
<b>6</b>	MBA 106	Corporate Communications
<b>7</b>	MBA 191	Advanced Excel, SPSS & R Lab

### **SECOND SEMESTER**

<b>SL NO</b>	<b>COURSE CODE</b>	<b>COURSE NAME</b>
<b>1</b>	MBA 201	Marketing Management
<b>2</b>	MBA 202	Operations & Supply Chain Management
<b>3</b>	MBA 203	Human Resource Management
<b>4</b>	MBA 204	Business Research Methods
<b>5</b>	MBA 205	Financial and Cost Management
<b>6</b>	MBA 206	Business Analytics & Information System
<b>7</b>	MBA 207	Operations Research
<b>8</b>	MBA 291	Personality Development Lab
<b>9</b>	MBA 292	BRM Project

**\*\*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**

<b>MARKETING</b>		<b>BUSINESSANALYTICS</b>	
<b>CODE</b>	<b>COURSE NAME</b>	<b>CODE</b>	<b>COURSE NAME</b>
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		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 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

\*\*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	IOT AND CLOUD COMPUTING
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

<b>HOSPITAL ADMINISTRATION</b>		<b>PHARMACEUTICAL MANAGEMENT</b>	
<b>CODE</b>	<b>COURSE NAME</b>	<b>CODE</b>	<b>COURSE NAME</b>
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

**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**

<b>MARKETING</b>		<b>BUSINESS ANALYTICS</b>	
<b>CODE</b>	<b>COURSE NAME</b>	<b>CODE</b>	<b>COURSE NAME</b>
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

<b>FINANCE</b>		<b>HUMAN RESOURCE</b>	
<b>CODE</b>	<b>COURSE NAME</b>	<b>CODE</b>	<b>COURSE NAME</b>
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

**Elective Papers for Fourth Semester**

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

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

<b>MARKETING</b>		<b>BUSINESS ANALYTICS</b>	
<b>CODE</b>	<b>COURSE NAME</b>	<b>CODE</b>	<b>COURSE NAME</b>
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

<b>FINANCE</b>		<b>HUMAN RESOURCE</b>	
<b>CODE</b>	<b>COURSE NAME</b>	<b>CODE</b>	<b>COURSE NAME</b>
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

<b>HOSPITAL ADMINISTRATION</b>		<b>PHARMACEUTICAL MANAGEMENT</b>	
<b>CODE</b>	<b>COURSE NAME</b>	<b>CODE</b>	<b>COURSE NAME</b>
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

**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	08-10-2025	Ms. Susmita Sarkar	Asst. Prof.	ECE	Presented Research Paper in IEEE 7th International Conference on Energy, Power and Environment (ICEPE) held during 9th to 11th May, 2025 at NIT, Meghalaya	International Conference	Utilizing the YOLO Framework for Unnecessary Particle Identification on Solar Panel Surfaces	Yes	7500	-	4,000	-	4,000	20-11-2025

## MCKV Institute of Engineering

Staff Matters : JULY 2025 - NOV 2025

(i) STAFF APPOINTMENT STATUS						
Sl.No.	Name	Department	Designation	Qualification	Experience (in years)	Date of Joining
1	Ms. Anwesa Naskar	CSE	Assistant Professor	M.Tech(CSE)	2+	01.07.2025
2	Mr. Sudipta Hazra	CSE	Assistant Professor	M.Tech	14+	01.07.2025
3	Dr. Diptadip Maiti	CSE	Associate Professor	Phd	16+	01.07.2025
4	Dr. Debasish Mukherjee	IT	Associate Professor	Phd	11+	01.07.2025
5	Dr. Poly Sil Sen	CSE	Associate Professor	Phd	16+	07.07.2025
6	Dr. Panchali Datta Choudhury	CSE	Associate Professor	Phd	7+	01.07.2025
7	Mr. Chandan Roy	CSE	Assistant Professor	M.Tech	5+	01.07.2025
8	Ms. Shrabanti Kundu	CSE	Assistant Professor	M.Tech (CSE)	3+	01.07.2025
9	Ms. Keya Bhattacharjee	CSE	Assistant Professor	M.Tech (CSE)	6+	01.07.2025
10	Mr. Basudeb Ghatak	Administrative	System Administrator	B.Sc	24 Yr	rejoin for contract 01.07.2025
11	Prof.(Dr.) Bijoy Bhattacharyya	ME	Emeritus Professor	Phd	38+	01.07.2025
12	Mr. Sristi Banerjee	Administrative	Technical Assistant (Examination Cell	B.Com	12+	01.07.2025
13	Ms. Nabanita Paik	CSE	Laboratory Instructor	B.Tech(CSE)	Nil	07.07.2025
14	Mr. Saubhik Goswami	MS	Assistant Professor(Contractual)	MBA	8+	04.07.2025
15	Ms. Payel Mukherjee	Administrative	Senior Manager T&P	MBA	18+	17.07.2025
16	Ms. Debibarna Mahesh	CSE	Jr. Laboratory Instructor	B.Voc	nil	01-Aug-25
17	Ms. Rani Das	CSE	Trainee Laboratory Instructor	B.Voc	Nil	11.08.2025

(ii) STAFF CONFIRMATION STATUS						
Sl.No.	Name	Department	Designation	Qualification	Experience (in years)	Date of Confirmation
1	Dr. Supriya Das	BSH	Assistant Professor	PhD	4+	01.07.2025
2	Ms. Priyanka Dhar	MS	Assistant Professor	MBA	5+	01.07.2025
3	Dr. Ajit Kumar Pandey	ME	Assistant Professor	PhD	4.5+	01.08.2025
4	Mr. Nirvik Banerjee	AUE	Assistant Professor	M.Tech	10.5+	01.08.2025
5	Mr. Shuvankar Choudhury	IT	Sr. Laboratory Instructor	MCA	21+	12.08.2025
6	Ms. Chirashree Roy	ADMIN	Office Assistant	MBA	9+	15.10.2025
7	Mr. Abhijoy Bagchi	ADMIN	Office Assistant	B.COM(H)	3+	01.11.2025

(iii) PROMOTION STATUS -NIL						
Sl.No.	Name	Department	Designation	Qualification	Experience (in years)	Date of Promotion
1	Dr. Soma Bandyopadhyay	CSE	Associate Professor	PhD		01.07.2025
2	Dr. Mahua Nandy Pal	CSE	Associate Professor	PhD		01.07.2025
3	Dr. Juin Ghosh Sarkar	MS	Associate Professor	PhD		01.07.2025

(iv) MATERNITY LEAVE - NIL						
1	Ms. Manali Sarkar	CSE	Assistant Professor	M.Tech		

(v) STAFF RESIGNATION / RETIREMENT STATUS						
SL. No.	Name	Department	Designation	Qualification	Experience in MCKVIE	Last Working Day
1	MR ARKADEEP GOSWAMI	CSE	Assistant Professor	M.Tech	2+	31.07.2025
2	DR. SHIBAPRASAD SEN	CSE	Associate Professor	Ph.D	1.2	08.08.2025
3	DR. PANCHALI DATTA CHOUDHURY	CSE	Associate Professor	Ph.D	0.1+	07.08.2025
4	DR. MAHUA NANDY PAL	CSE	Associate Professor	PhD	17+	15.09.2025
5	Dr. Rajarshi Sanyal	ECE	Assistant Professor	PhD	11+	09.09.2025