

# 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	
Theory							
1	I	HM-HU101	Communication Skill (JeevanKaushal-I)	2	0	0	2
2	I	HM-HU102	Introduction to Indian Knowledge System (Indian Knowledge System -I)	2	0	0	2
3	II	HM-HU203	Inculcation of Human Values and Professional Ethics (MulyaPravah)	2	0	0	2
4	IV	HM-HU401	Leadership Skill and Management (JeevanKaushal-III)	2	0	0	2
5	VIII	HM-HU801	Universal Human Values-II (JeevanKaushal-IV)	2	0	0	2
Total Theory				10	0	0	10
Practical/ Sessional							
1	I	HM-HU191	Communication Skill Laboratory	0	0	2	1
2	V	HM-HU591	Professional Skill (JeevanKaushal-II)	1	0	2	2
3	V	HM-HU571	Aptitude Skill Development-I	1	0	0	1
4	VI	HM-HU671	Aptitude Skill Development-II	1	0	0	1
Total Practical/ Sessional				3	0	4	5
Total				13	0	4	15

Basic Science Courses							
Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	I	BS-M101	Mathematics-I	3	1	0	4
2	I	BS-CH101	Chemistry	3	0	0	3
3	II	BS-M201	Mathematics–II	3	1	0	4
4	II	BS-PH201	Physics	3	1	0	4
5	III	BS-M303	Mathematics -III	3	0	0	3
6	IV	BS-BIO401	Biology for Engineers	2	0	0	2
7	IV	BS-M401	Vedic Mathematics (Indian Knowledge System -II)	2	0	0	2
8	V	BS-M501	Basics of Indian Astronomy (Indian Knowledge System -III)	2	0	0	2
9	VIII	BS-M801	Introduction to Indian Astronomy (Indian Knowledge System -IV)	2	0	0	2
Total Theory				23	3	0	26
Practical/ Sessional							
1	I	BS-CH191	Chemistry Laboratory	0	0	3	1.5
2	II	BS-PH291	Physics Laboratory	0	0	3	1.5
Total Practical/ Sessional				0	0	6	3
Total				23	3	6	29

Engineering Science Courses including Workshop, Drawing, Basics of Electrical/ Mechanical/ Computer etc.							
Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	I	ES-EE101	Basic Electrical and Electronics Engineering	2	1	0	3
2	II	ES-CS201	Programming for Problem Solving	3	0	0	3
3	III	ES-AUE301	Engineering Mechanics	3	1	0	4
4	III	ES-AUE302	Materials Engineering	3	0	0	3
5	IV	ES-AUE401	Fluid Mechanics and Hydraulic Machines	3	0	0	3
Total Theory				14	2	0	16
Practical/ Sessional							
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
Total Practical/ Sessional				0	0	16	08
Total				14	2	16	24

Professional Core Courses							
Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	III	PC-AUE301	Thermodynamics and Thermal Engineering	3	1	0	4
2	III	PC-AUE302	Manufacturing Technology	4	0	0	4
3	III	PC-AUE303	Automotive Engines	3	0	0	3
4	IV	PC-AUE401	Strength of Materials	3	0	0	3
5	IV	PC-AUE402	Automotive Chassis	3	0	0	3
6	IV	PC-AUE403	Mechanics of Machines	3	1	0	4
7	V	PC-AUE501	Metrology and Instrumentation	2	0	0	2
8	V	PC-AUE502	Automotive Transmission	3	0	0	3
9	V	PC-AUE503	Automotive Electrical and Electronics System	3	0	0	3
10	V	PC-AUE504	Engineering Design	3	0	0	3
11	VI	PC-AUE601	Automotive Electrification and Hybrid System	3	0	0	3
12	VI	PC-AUE602	Vehicle Dynamics	3	0	0	3
13	VI	PC-AUE603	Vehicle Body Engineering	2	0	0	2
14	VII	PC-AUE701	Off Road Vehicle	3	0	0	3
Total Theory				41	2	0	43
Practical/ Sessional							
1	III	PC-AUE391	Machine Drawing	0	0	3	1.5
2	III	PC-AUE392	Manufacturing and Testing Laboratory	0	0	3	1.5
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
Total Practical/ Sessional				0	0	24	12
Total				41	2	24	55

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### Professional Elective Courses relevant to chosen specialization/ branch

Sl No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1	V	PE-AUE501	Professional Elective-I	3	0	0	3
2	VI	PE-AUE601	Professional Elective-II	3	0	0	3
3	VI	PE-AUE602	Professional Elective-III	3	0	0	3
4	VII	PE-AUE701	Professional Elective-IV	3	0	0	3
5	VII	PE-AUE702	Professional Elective-V	3	0	0	3
Total Theory				15	0	0	15
Practical/ Sessional							
Total Practical/ Sessional				0	0	0	0
Total				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	
Theory							
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
Total Theory				9	0	0	9
Practical/ Sessional							
Total Practical/ Sessional				0	0	0	0
Total				9	0	0	9

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

Sl. No.	Semester	Course Code	Course Name	Contact Hours			Credits
				L	T	P	
Theory							
1				0	0	0	0
Total Theory				0	0	0	0
Practical/ Sessional							
1	II	PW-BS281	Ideation Laboratory	0	0	2	1
2	IV	PW-AUE481	Project-I (Mini Project)	0	0	4	2
3	VI	PW-AUE681	Project-II	0	0	4	2

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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>				<b>0</b>	<b>0</b>	<b>24</b>	<b>13</b>
<b>Total</b>				<b>0</b>	<b>0</b>	<b>24</b>	<b>13</b>

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