

Z.H. College of Engineering Technology, Aligarh Muslim University Aligarh

COURSE STRUCTURE: B.Tech. Automobile Engineering (Electric and Hybrid Vehicles)

Valid for students admitted from the year 2023 onwards

Semester 1/2:

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	BS	AMS1112	Applied Mathematics-I	3	1	0	4	15	25	60	100
2	BS	APS1112	Applied Physics	3	1	0	4	15	25	60	100
3	ESA	ELA1112	Principles of Electronics Engineering	2	1	0	3	15	25	60	100
4	ESA	MEA1122	Engineering Mechanics	2	1	0	3	15	25	60	100
5	HM	EZH1112	English	2	1	0	3	15	25	60	100
6	BS	APS1912	Applied Physics Lab	0	0	3	1.5	60		40	100
7	ESA	MEA1922	Engineering Workshop	0	1	2	2	60		40	100
8	HM	EZH1912	Communication Skills Lab	0	1	2	2	60		40	100

TOTAL CREDITS: 22.5

Semester 2/1:

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	BS	AMS1122	Higher Mathematics-II	3	1	0	4	15	25	60	100
2	BS	ACS1112	Applied Chemistry	3	1	0	4	15	25	60	100
3	ESA	EEA1112	Principles of Electrical Engineering	2	1	0	3	15	25	60	100
4	ESA	MEA1112	Thermal Sciences	3	1	0	4	15	25	60	100
5	BS	ACS1912	Applied Chemistry Lab	0	0	3	1.5	60		40	100
6	ESA	COA1912	Computer Programming Lab	0	1	2	2	60		40	100
7	ESA	MEA1912	Engineering Graphics Lab	1	0	2	2	60		40	100
8	AU	CEU1112	Environmental Studies (Audit Course)	3	0	0	0	15	25	60	100

TOTAL CREDITS: 20.5

Z.H. College of Engineering Technology, Aligarh Muslim University Aligarh

Course Structure: B.Tech. Automobile Engineering (Electric and Hybrid Vehicles)**Valid for students admitted from year 2023 onwards****Semester 3:**

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	BS	AMS2312	Higher Mathematics	2	1	0	3	15	25	60	100
2	ESA	AEA2422	Experimental Methods & Analysis	2	1	0	3	15	25	60	100
3	PC	AEC2112	Mechanics of Solids	3	1	0	4	15	25	60	100
4	PC	AEC2322	Fluid Mechanics	3	1	0	4	15	25	60	100
5	PC	AEC2432	Automotive Materials	2	1	0	3	15	25	60	100
6	PC	AEC2752	Lean Methods for Automobile Engineers	3	1	0	4	15	25	60	100
7	PC	AEC2912	Machine Drawing Lab	0	1	2	2	60		40	100
8	PC	AEC2932	Manufacturing Technology Lab-I	0	1	2	2	60		40	100
9	PC	AEC2952	Fluids Mechanics Lab	0	0	3	1.5	60		40	100

TOTAL CREDITS: 26.5**Semester 4:**

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	PC	AEC2222	Applied Thermodynamics & Heat Transfer	3	1	0	4	15	25	60	100
2	PC	AEC2412	Manufacturing Technology	3	1	0	4	15	25	60	100
3	PC	AEC2452	Vehicle Body Design	3	1	0	4	15	25	60	100
4	PC	AEC2762	Additive Manufacturing	2	1	0	3	15	25	60	100
5	BS	AMS2322	Numerical Methods & Optimization	3	1	0	4	15	25	60	100
6	ESA	EEA2042	Automotive Electrical & Electronic System	3	1	0	4	15	25	60	100
7	ESA	AEA2972	Automotive Electrical & Electronic Lab	0	0	3	1.5	60		40	100
8	PC	AEC2962	Thermal System Lab-I	0	0	3	1.5	60		40	100
9	AU		Audit Course-2				0	15	25	60	100

TOTAL CREDITS: 26

Z.H. College of Engineering Technology, Aligarh Muslim University Aligarh

Course Structure: B.Tech. Automobile Engineering (Electric and Hybrid Vehicles)**Valid for students admitted from year 2023 onwards****Semester 5:**

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	PC	AEC3112	Design of Vehicle Components	3	1	0	4	15	25	60	100
2	PC	AEC3132	Automotive Drives & Transmission	3	1	0	4	15	25	60	100
3	PC	AEC3242	Fuels, Lubricants & Coolants	3	1	0	4	15	25	60	100
4	PC	AEC3292	Electric & Hybrid Vehicles	2	1	0	3	15	25	60	100
5	PE		Programme Elective-1	2	1	0	3	15	25	60	100
6	HM		Elective Course under Humanities category	2	1	0	3	15	25	60	100
7	PC	AEC3962	Modeling & Simulation of Thermo fluid System	0	1	2	2	60		40	100
8	AU		Audit Course-3				0	15	25	60	100

TOTAL CREDITS: 23**Semester 6:**

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	PC	AEC3122	Machinery Dynamics	3	1	0	4	15	25	60	100
2	PC	AEC3222	I.C. Engines	3	1	0	4	15	25	60	100
3	PC	AEC3252	Automotive Emission & Control	2	1	0	3	15	25	60	100
4	PC	AEC3342	Automotive Hydraulic Pneumatic Systems	3	1	0	4	15	25	60	100
5	HM	MEH3452	Engineering Economy & Management	2	1	0	3	15	25	60	100
6	PC	AEC3932	Manufacturing Technology Lab-II	0	1	2	2	60		40	100
7	PC	AEC3942	Solid Modeling & Analysis Lab	0	1	2	2	60		40	100
8	PC	AEC3952	Kinematics & Stress Analysis Lab	0	1	2	2	60		40	100
9	PC	AEC3972	Fuel Testing Lab	0	0	3	1.5	60		40	100

TOTAL CREDITS: 25.5

Z.H. College of Engineering Technology, Aligarh Muslim University Aligarh

Course Structure: B.Tech. Automobile Engineering (Electric and Hybrid Vehicles)**Valid for students admitted from year 2023 onwards****Semester 7:**

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	PC	AEC4212	Automotive System	2	1	0	3	15	25	60	100
2	PE		Programme Elective-2	2	1	0	3	15	25	60	100
3	OE		Open Elective-1	2	1	0	3	15	25	60	100
4	PC	AEC4952	Energy Conversion Systems Lab	0	1	2	2	60		40	100
5	PC	AEC4962	Thermal System Lab II	0	1	2	2	60		40	100
6	PSI	AEP4812	Colloquium	0	2	0	2	60		40	100
7	PSI	AEP4912	Project (Phase I)	0	3	0	3	60		40	100

TOTAL CREDITS: 18**Semester 8:**

S.No.	Course Catag	Course No.	Course title	Contact Periods			Credits	Marks			Total
				L	T	P		Course-Work	Intl-Exam	End-Sem	
1	PE		Programme Elective-3	2	1	0	3	15	25	60	100
2	PE		Programme Elective-4	2	1	0	3	15	25	60	100
3	PE		Programme Elective-5	2	1	0	3	15	25	60	100
4	OE		Open Elective-2	2	1	0	3	15	25	60	100
5	PSI	AEP4922	Project (Phase II)	0	4	0	4	60		40	100
6	PSI	AEP4802	Industrial Training/Internship				2			100	100

TOTAL CREDITS: 18

Z.H. College of Engineering Technology, Aligarh Muslim University Aligarh

Course Structure: B.Tech. (Automobile Engineering (Electric and Hybrid Vehicles))
Valid for students admitted from year 2023 onwards

List of Programme Elective (PE) Courses: See List of Programme Elective (PE) Courses in the syllabus section

S.No.	Crs. No.	Course title	S.N	Crs. No.	Course title
-------	----------	--------------	-----	----------	--------------

SUMMARY:

Catagory Code	Category Name	II-IV Year	First Year Credits	Total Credits
PC	Programme Core	83.5	0	83.5
PE	Programme Elective	15	0	15
BS	Basic Sciences	7	19	26
ESA	Engg. Science and Arts	8.5	19	27.5
OE	Open Elective	6	0	6
HM	Humanities	6	5	11
PSI	Project, Seminar, Internship	11	0	11
TOTAL		137	43	180