R2023 CURRICULUM AND SYLLABUS

			Automobile Engineering						
Sl. No.	SEM	Course Code	Course Name	Category	Total Hrs	L	T	P	C
1	I	HS 23111	Technical Communication I	HS	2	2	0	0	2
2	I	MA23112	Algebra and Calculus	BS	4	3	1	0	4
3	I	GE23111	Engineering Graphics	ES	6	2	0	4	4
4	I	AT23111	Production Technology - I	PC	3	3	0	0	3
5	I	GE23117	தமிழர்மரபு / Heritage of Tamils	HS	1	1	0	0	1
6	I	PH23131	Physics of Materials	BS	5	3	0	2	4
7	I	GE23121	Engineering Practices – Civil and Mechanical	ES	2	0	0	2	1
8	I	MC23112	Environmental Science and Engineering	MC	3	3	0	0	0
Total					24	17	3	4	19

Sl. No.	SEM	Course Code	Course Name	Category	Total Hrs	L	T	P	C
1	II	MA23212	Differential Equations and Complex Variables	BS	4	3	1	0	4
2	II	GE23211	Engineering Mechanics	ES	3	2	1	0	3
3	II	GE23217	தமிழரும் தொழில்நுட்பமும் / Tamils and Technology	HS	1	1	0	0	1
4	II	CY23233	Engineering Chemistry	BS	5	3	0	2	4
5	II	EE23133	Basic Electrical And Electronics Engineering	ES	5	3	0	2	4

6	II	GE23231	Programming Using Python	ES	5	1	0	4	3
7	II	HS 23221	Technical Communication II	HS	2	0	0	2	1
		HS 23222	English for Professional Competence						
8	II	GE23122	Engineering Practices - Electrical & Electronics	ES	2	0	0	2	1
9	II	MC23111	Indian Constitution and Freedom Movement	MC	3	3	0	0	0
			Total		30	16	2	12	21

Sl. No.	SEM	Course Code	Subject Name	Category	Total Hrs	L	T	P	C
1	III	MA23331	Transforms and Statistics	BS	5	3	0	2	4
2	III	AT23331	Automotive Engines	PC	5	3	0	2	4
3	III	AT23332	Applied Thermodynamics	PC	5	2	1	2	4
4	III	AT23333	Strength of Materials for Automobile Engineers	PC	5	2	1	2	4
5	III	AT23334	Production Technology - II	PC	5	3	0	2	4
6	III	AT23321	Computer Aided Machine Drawing Laboratory	PC	4	0	0	4	2
			Total		29	13	2	14	22

Sl. No.	SEM	Course Code	Subject Name	Category	Total Hrs	L	T	P	C
1	IV	AT23411	Electric and Hybrid Vehicles - I	PC	3	3	0	0	3
2	IV	AT23412	Engineering Materials and Metallurgy	ES	3	3	0	0	3
3	IV	AT23431	Automotive Drive Line and Chassis	PC	5	3	0	2	4

4	IV	AT23432	Fluid Mechanics and Machinery for Automobile Engineers	PC	5	2	1	2	4
5	IV	AT23433	Theory of Machines	PC	5	2	1	2	4
6	IV	CS23422	Python Programming for Machine Learning	ES	4	0	0	4	2
7	IV	GE23327	Soft Skills - I	EEC	2	0	0	2	1
			Total		27	13	2	12	21

Sl. No.	SEM	Course Code	Subject Name	Category	Total Hrs	L	T	P	C
1	V	AT23511	Machine Design	PC	3	2	1	0	3
2	V	GE23311	Fundamentals of Management for Engineers	HS	3	3	0	0	3
3	V		Professional Elective – I	PE	3	3	0	0	3
4	V		Open Elective - I	OE	3	3	0	0	3
5	V	AT23531	Automotive Electrical and Electronics	PC	5	3	0	2	4
6	V	AT23532	Electric and Hybrid Vehicles - II	PC	5	3	0	2	4
7	V	AT23521	Two and Three wheelers Laboratory	PC	2	0	0	2	1
8	V	AT23522	Computer Aided Vehicle Design Data Characteristics Laboratory	PC	2	0	0	2	1
9	V	GE23427	Soft Skills - II	EEC	2	0	0	2	1
			Total		28	17	1	10	23

Sl. No.	SEM	Course Code	Subject Name	Category	Total Hrs	L	T	P	C
1	VI		**Professional Elective – II**	PE	3	3	0	0	3
2	VI		**Open Elective - II**	OE	3	3	0	0	3
3	VI	AT23631	**Automotive System Design**	PC	5	2	1	2	4
4	VI	AT23632	**Vehicle Dynamics**	PC	5	2	1	2	4
5	VI	AT23633	**Automotive Fuels and Lubricants**	PC	5	3	0	2	4
6	VI	GE23627	**Problem solving techniques**	EEC	2	0	0	2	1
7	VI	AT23621	**Design Thinking and Innovation for Automobile Engineers**	EEC	4	0	0	4	2
			Total		27	13	2	12	21

Sl. No.	SEM	Course Code	Subject Name	Category	Total Hrs	L	T	P	C
1	VII	AT23711	**Automotive Pollution and Control**	PC	3	3	0	0	3
2	VII	AT23712	**Intelligent Vehicle System**	PC	3	3	0	0	3
3	VII	AT23713	**Automotive Safety**	PC	3	3	0	0	3
4	VII		**Professional Elective – IV**	PE	3	3	0	0	3
5	VII	AT23721	**AI and ML for Automobile Engineers**	PC	4	0	0	4	2
6	VII	AT23722	**Vehicle Maintenance Laboratory**	PC	2	0	0	2	1
7	VII	AT23723	**Computer Aided Analysis laboratory**	PC	2	0	0	2	1
8	VII		**Industrial Training**	EEC	2	0	0	2	1
			Total		22	12	0	10	17

Sl. No.	SEM	Course Code	Subject Name	Category	Total Hrs	L	T	P	C
1	VIII		**Professional Elective – IV**	PE	3	3	0	0	3
2	VIII		**Professional Elective – V**	PE	3	3	0	0	3
3	VIII		**Project Work**	EEC	20	0	0	20	10
Total					26	6	0	20	16

Vertical subjects with Specialization

Sl. No.	SEM	Vertical 1/ Electric Vehicles							
		Course Name	Course Code	Category	Total Hrs	L	T	P	C
1	V/VI	Fuel cell Technologies	AT23A11	Vertical	3	3	0	0	3
2	V/VI	Automotive Power Electronics	AT23A12	Vertical	3	3	0	0	3
3	V/VI	Sensors and Actuators	AT23A13	Vertical	3	3	0	0	3
4	VII/VIII	Smart charging of Electric and Hybrid Vehicles	AT23A14	Vertical	3	3	0	0	3
5	VII/VIII	Electric and Plug-in Hybrid Vehicle Networks_ Optimization and Control	AT23A15	Vertical	3	3	0	0	3
6	VII/VIII	Energy Systems for Electric and Hybrid Vehicles	AT23A16	Vertical	3	3	0	0	3
7	VII/VIII	Automotive Functional Safety	AT23A17	Vertical	3	3	0	0	3
8	VII/VIII	Modelling of Electric and Hybrid Vehicles	AT23A18	Vertical	3	3	0	0	3

Sl. No.	SEM	Vertical 2/ Computational Design							
		Course Name	Course Code	Category	Total Hrs	L	T	P	C
1	V/VI	Computer Aided Design and Manufacturing	AT23B11	Vertical	3	3	0	0	3
2	V/VI	Integrated Computational Materials Engineering	AT23B12	Vertical	3	3	0	0	3
3	V/VI	Computational Theory on Solid Mechanics	AT23B13	Vertical	3	3	0	0	3
4	VII/VIII	Computational and Visualization Theory	AT23B14	Vertical	3	3	0	0	3
5	VII/VIII	Computer Integrated Manufacturing in Automotive Sector	AT23B15	Vertical	3	3	0	0	3
6	VII/VIII	Computational Aero Dynamics	AT23B16	Vertical	3	3	0	0	3
7	VII/VIII	CFD and Heat Transfer	AT23B17	Vertical	3	3	0	0	3
8	VII/VIII	Digital Manufacturing of Automobiles	AT23B18	Vertical	3	3	0	0	3

Sl. No.	SEM	Vertical 3/ VEHICLE RESEARCH AND VALIDATION							
		Course Name	Course Code	Category	Total Hrs	L	T	P	C
1	V/VI	Advanced Automotive Materials	AT23C11	Vertical	3	3	0	0	3
2	V/VI	Noise, Vibration and Harshness	AT23C12	Vertical	3	3	0	0	3
3	V/VI	Combustion Thermodynamics and Heat Transfer	AT23C13	Vertical	3	3	0	0	3
4	VII/VIII	Automotive Instrumentation	AT23C14	Vertical	3	3	0	0	3
5	VII/VIII	Testing and Measurement Systems	AT23C15	Vertical	3	3	0	0	3
6	VII/VIII	Homologation	AT23C16	Vertical	3	3	0	0	3
7	VII/VIII	IC Engine Process Modelling	AT23C17	Vertical	3	3	0	0	3
8	VII/VIII	Vehicle Control Systems	AT23C18	Vertical	3	3	0	0	3

Sl. No.	SEM	Vertical 4 / SPECIAL PURPOSE VEHICLES							
		Course Name	Course Code	Category	Total Hrs	L	T	P	C
1	V/VI	Hydraulics and Pneumatics	AT23D11	Vertical	3	3	0	0	3
2	V/VI	Agricultural Vehicles	AT23D12	Vertical	3	3	0	0	3
3	V/VI	Defence Vehicles	AT23D13	Vertical	3	3	0	0	3
4	VII/VIII	Constructions Vehicles	AT23D14	Vertical	3	3	0	0	3
5	VII/VIII	Marine Vehicles	AT23D15	Vertical	3	3	0	0	3
6	VII/VIII	Off-road Vehicle Dynamics - Analysis, Modelling and Optimization	AT23D16	Vertical	3	3	0	0	3
7	VII/VIII	Mechatronics and Intelligent Systems for Off-road Vehicles	AT23D17	Vertical	3	3	0	0	3
8	VII/VIII	Terramechanics and Off-Road Vehicle Engineering	AT23D18	Vertical	3	3	0	0	3

Sl. No.	SEM	Vertical 5/ PRODUCT AND PROCESS DEVELOPMENT							
			Course Code	Category	Total Hrs	L	T	P	C
1	V/VI	Automotive Product Design	AT23E11	Vertical	3	3	0	0	3
2	V/VI	Ergonomics in Automotive Design	AT23E12	Vertical	3	3	0	0	3
3	V/VI	Additive Manufacturing	AT23E13	Vertical	3	3	0	0	3
4	VII/VIII	Finite Element Analysis	AT23E14	Vertical	3	3	0	0	3
5	VII/VIII	New Product Development Process	AT23E15	Vertical	3	3	0	0	3
6	VII/VIII	Automotive Product Life Cycle Management	AT23E16	Vertical	3	3	0	0	3
7	VII/VIII	Production of Automotive Components	AT23E17	Vertical	3	3	0	0	3
8	VII/VIII	Geometric Dimensioning and Tolerances	AT23E18	Vertical	3	3	0	0	3
9	VII/VIII	Metrology and Quality Control	AT23E19	Vertical	3	3	0	0	3