

**13. Courses of Study and Scheme of Assessment
ME AUTOMOTIVE ENGINEERING**

(2018 REGULATIONS)
(Minimum No. of credits to be earned: 71*)

Course Code	Course Title	Hours/Week			Credits	Maximum Marks			CAT
		Lecture	Tutorial	Practical		CA	FE	Total	
I SEMESTER									
18AE01	Computational Mathematics	2	2	0	3	50	50	100	PC
18AE02	Automotive Systems	3	2	0	4	50	50	100	PC
18AE03	IC Engines and Emissions	3	0	0	3	50	50	100	PC
18AE04	Automotive Electronics	3	0	0	3	50	50	100	PC
18AE05	Vehicle Development Process	3	0	0	3	50	50	100	PC
18AE51	Automotive Engineering Laboratory	0	0	4	2	50	50	100	PC
18AE81	English for Research Paper Writing	0	0	**	Grade	0	0	0	MC
Total 22 Hrs.		14	4	4	18	300	300	600	
II SEMESTER									
18AE06	Vehicle Dynamics	2	2	0	3	50	50	100	PC
18AE07	Engine Component Design	3	2	0	4	50	50	100	PC
18AE08	Automotive Embedded Systems	3	0	0	3	50	50	100	PC
18AE09	Linear Control Systems	2	2	0	3	50	50	100	PC
18AE__	Professional Elective 1	3	0	0	3	50	50	100	PE
18AE__	Professional Elective 2	3	0	0	3	50	50	100	PE
18AE52	Automotive Computer Aided Engineering Laboratory	0	0	4	2	50	50	100	PC
18AE61	Industrial visit and Technical Seminar	0	0	4	2	50	50	100	EEC
18AE82	Research Methodology and IPR	0	0	**	Grade	0	0	0	MC
Total 30 Hrs.		16	6	8	23	400	400	800	
III SEMESTER									
18AE__	Professional Elective 3	3	0	0	3	50	50	100	PE
18AE__	Professional Elective 4	3	0	0	3	50	50	100	PE
18AE__	Professional Elective 5	3	0	0	3	50	50	100	PE
18AE__	Professional Elective 6	3	0	0	3	50	50	100	PE
18AE__	Elective Laboratory	0	0	2	1	50	50	100	PC
18AE71	Project Work I	0	0	6	3	50	50	100	EEC
Total 20 Hrs.		12	0	8	16	300	300	600	
IV SEMESTER									
18AE72	Project Work II	0	0	28	14	50	50	100	EEC
Total 28 Hrs.		0	0	28	14	50	50	100	
ELECTIVE THEORY COURSES (Six to be opted)									
Automotive Safety									
18AE10	Electric Drives and Storage systems	3	0	0	3	50	50	100	PE
18AE11	Automatic and Automated Manual Transmission	3	0	0	3	50	50	100	PE
18AE12	Automotive Infotronics	3	0	0	3	50	50	100	PE
18AE13	Automotive Ergonomics and Safety	3	0	0	3	50	50	100	PE
18AE14	Autonomous Vehicles	3	0	0	3	50	50	100	PE
18AE15	Automotive Safety Systems	3	0	0	3	50	50	100	PE
18AE16	Electronic Engine Management	3	0	0	3	50	50	100	PE
18AE17	Sensors and Actuators	3	0	0	3	50	50	100	PE
18AE18	Vehicle Diagnostics	3	0	0	3	50	50	100	PE
18AE19	Automotive Electrical and Electronic Systems	3	0	0	3	50	50	100	PE
Design Engineering									
18AE20	Finite Element Analysis	3	0	0	3	50	50	100	PE
18AE21	Aerodynamics of Road Vehicles	3	0	0	3	50	50	100	PE
18AE22	Computational Fluid Dynamics	3	0	0	3	50	50	100	PE
18AE23	Automotive System Design and Simulation	3	0	0	3	50	50	100	PE
18AE24	Design for Manufacture and Assembly	3	0	0	3	50	50	100	PE
18AE25	Automotive Power Train Design	3	0	0	3	50	50	100	PE
Automotive Manufacturing									
18AE26	Advanced Manufacturing Process	3	0	0	3	50	50	100	PE
18AE27	Lean Manufacturing	3	0	0	3	50	50	100	PE
18AE28	Lean Six Sigma	3	0	0	3	50	50	100	PE
18AE29	Automotive Materials and Metallurgy	3	0	0	3	50	50	100	PE
Thermal Engineering									

18AE30	Emission, Noise, Vibration and Harshness Control	3	0	0	3	50	50	100	PE
18AE31	Advanced Heat Transfer	3	0	0	3	50	50	100	PE
18AE32	Alternate Fuels	3	0	0	3	50	50	100	PE
18AE33	Automotive HVACR	3	0	0	3	50	50	100	PE
18AE34	Fuels and Combustion	3	0	0	3	50	50	100	PE
18AE35	Simulation of IC Engines	3	0	0	3	50	50	100	PE
18AE36	Instrumentation for Thermal Systems	3	0	0	3	50	50	100	PE
18AE37	Thermal Management of Hybrid Systems	3	0	0	3	50	50	100	PE
18AE38	Fuel Cell Vehicles	3	0	0	3	50	50	100	PE
	Others								
18AE39	Special Vehicles	3	0	0	3	50	50	100	PE
18AE40	Vehicle Testing	3	0	0	3	50	50	100	PE
18AE41	Optimization Techniques	3	0	0	3	50	50	100	PE
18AE42	Automotive PLM	3	0	0	3	50	50	100	PE
18AE43	Automotive Ergonomics	3	0	0	3	50	50	100	PE
	ELECTIVE LABORATORY COURSES (One to be opted)								
18AE53	Automotive Styling and Design Laboratory	0	0	2	1	50	50	100	PC
18AE54	Automotive Embedded Systems Laboratory	0	0	2	1	50	50	100	PC
18AE55	Modeling and Simulation Laboratory	0	0	2	1	50	50	100	PC

* Indicated is the minimum number of credits to be earned by a student.

** - 60 hrs in I semester and 90 hrs in II semester; Grade: Pass/Fail

CAT – Category; PC – Professional Core; PE - Professional Elective; EEC – Employability Enhancement Course; MC- Mandatory Course

List of One credit Courses (15 hours each)

1. 18AK01 Model based Development
2. 18AK02 Robotics
3. 18AK03 Integrated Development Environment
4. 18AK04 Driveline Matching for Special Purpose Vehicles