13. Courses of Study and Scheme of Assessment
M.E. EMBEDDED AND REAL-TIME SYSTEMS

(2018 REGULATIONS)

(Minimum No. of credits to be earned: 75*)

Course Code	Course Title	Hours/Week			Credits	Maximum Marks			CAT
		Lecture	Tutorial	Practical		CA	FE	Total	
I SEMESTER									
18EE01	Mathematics of Systems Engineering	2	2	0	3	50	50	100	PC
18EE02	Embedded Controllers and Applications	3	0	0	3	50	50	100	PC
18EE03	Real-Time Concepts for Embedded Systems	3	0	0	3	50	50	100	PC
18EE04	Digital System Design and Testing	3	2	0	4	50	50	100	PC
18EE05	Object Computing and Data Structures	3	2	0	4	50	50	100	PC
18EE51	Embedded Controllers Laboratory	0	0	4	2	50	50	100	PC
18EE81	English for Research Paper Writing	0	0	**	Grade	0	0	0	MC
Total 24 hrs		**14**	**6**	**4**	**19**	**300**	**300**	**600**	
II SEMESTER									
18EE06	Real-Time Operating Systems	3	0	0	3	50	50	100	PC
18EE07	Embedded System Networks	3	0	0	3	50	50	100	PC
18EE08	Linux Architecture and Device Drivers	3	2	0	4	50	50	100	PC
18EE09	Advanced Embedded Controllers	3	2	0	4	50	50	100	PC
18EE__	Professional Elective 1	3	0	0	3	50	50	100	PE
18EE__	Professional Elective 2	3	0	0	3	50	50	100	PE
18EE52	Real-Time Systems Laboratory	0	0	4	2	50	50	100	PC
18EE61	Industrial Visit and Technical Seminar	0	0	4	2	50	50	100	EEC
18EE82	Research Methodology and IPR	0	0	**	Grade	0	0	0	MC
Total 30 hrs		**18**	**4**	**8**	**24**	**400**	**400**	**800**	
III SEMESTER									
18EE__	Professional Elective 3	3	2	0	4	50	50	100	PE
18EE__	Professional Elective 4	3	0	0	3	50	50	100	PE
18EE__	Professional Elective 5	3	0	0	3	50	50	100	PE
18EE__	Professional Elective 6	3	0	0	3	50	50	100	PE
18EE53	Embedded System Design Laboratory	0	0	4	2	50	50	100	PC
18EE71	Project Work I	0	0	6	3	50	50	100	EEC
Total 24 hrs		**12**	**2**	**10**	**18**	**300**	**300**	**600**	
IV SEMESTER									
18EE72	Project Work II	**0**	**0**	**28**	**14**	50	50	100	EEC
ELECTIVE 3 Associated with Centre of Excellence (One to be opted)									
18EE21	Internet of Things	3	2	0	4	50	50	100	PE
18EE22	Totally Integrated Automation	3	2	0	4	50	50	100	PE
18EE23	Industrial Drives for Automation	3	2	0	4	50	50	100	PE
ELECTIVE THEORY COURSES(Five to be opted)									
18EE24	Computer Architecture and Parallel Processing	3	0	0	3	50	50	100	PE
18EE25	Automotive Embedded Systems	3	0	0	3	50	50	100	PE
18EE26	Graphical Programming for Real-Time Applications	3	0	0	3	50	50	100	PE
18EE27	Industrial Networking and Standards	3	0	0	3	50	50	100	PE
18EE28	Internetworking and its Applications	3	0	0	3	50	50	100	PE
18EE29	Wireless Sensor Networks	3	0	0	3	50	50	100	PE
18EE30	Wireless and Mobile Communication	3	0	0	3	50	50	100	PE
18EE31	Cryptography and Network Security	3	0	0	3	50	50	100	PE
18EE32	Advanced Digital Signal Processing	3	0	0	3	50	50	100	PE
18EE33	Digital Image Processing	3	0	0	3	50	50	100	PE
18EE34	Graph Theory and Applications	3	0	0	3	50	50	100	PE
18EE35	Optimization Techniques	3	0	0	3	50	50	100	PE
18EE36	Digital Controllers for Power Electronic Applications	3	0	0	3	50	50	100	PE
18EE37	Smart Grid Technologies	3	0	0	3	50	50	100	PE
18EE38	Soft Computing	3	0	0	3	50	50	100	PE
18EE39	Machine Learning and Applications	3	0	0	3	50	50	100	PE
18EE40	Python Programming	3	0	0	3	50	50	100	PE

* 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

ONE CREDIT COURSES

18EK06	Field Programmable Analog Array for Analog System Design
18EK07	Automotive Software Testing
18EK13	System Engineering for Automotive Applications
18EK14	Electric Vehicles
18EK15	Phasor Measurement Units & Applications
18EK17	CAD Tools for VLSI Design Automation
18EK18	Digital Design with Verilog HDL
18EK19	Automotive Electrical System