13. Courses of Study and Scheme of Assessment
ME ENGINEERING DESIGN

(2015 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									
15MD01	Applied Numerical Analysis	2	2	-	3	50	50	100	FC
15MD02	Concepts of Engineering Design	3	-	-	3	50	50	100	FC
15MD03	Machinery Vibration and Diagnostics	3	-	-	3	50	50	100	PC
15MD04	Mechanisms and Robot Kinematics	3	2	-	4	50	50	100	PC
15MD05	Mechatronics System Design	3	2	-	4	50	50	100	PC
15MD51	Vibration and Noise Engineering Laboratory	-	-	4	2	100	-	100	PC
15MD61	Industry Visit & Technical Seminar	-	-	4	2	100	-	100	EEC
Total 28 Hrs		**14**	**6**	**8**	**21**	**450**	**250**	**700**	
II SEMESTER									
15MD06	Industrial Tribology	3	-	-	3	50	50	100	PC
15MD07	Applied Elasticity and Plasticity	3	-	-	3	50	50	100	PC
15MD08	Advanced Finite Element Analysis	3	-	-	3	50	50	100	PC
15MD09	Design and Failure Analysis	3	-	-	3	50	50	100	PC
15MD10	Design for Manufacture and Assembly	3	2	-	4	50	50	100	PC
15MD__	Elective 1	3	-	-	3	50	50	100	PE
15MD52	Computer Aided Engineering Laboratory	0	-	2	1	100	-	100	PC
Total 20 Hrs		**18**	**-**	**2**	**19**	**400**	**300**	**700**	
III SEMESTER									
15MD__	Elective 2	3	-	-	3	50	50	100	PE
15MD__	Elective 3	3	-	-	3	50	50	100	PE
15MD__	Elective 4	3	-	-	3	50	50	100	PE
15MD__	Elective 5	3	-	-	3	50	50	100	PE
15MD__	Elective 6	3	-	-	3	50	50	100	PE
15MD53	Sensor Interface and Robotics Laboratory	0	-	4	2	100	-	100	PC
15MD71	Project Work I	0	-	6	3	100	-	100	EEC
Total 27 Hrs		**15**	**2**	**10**	**21**	**450**	**250**	**700**	
IV SEMESTER									
15MD72	Project Work II	-	-	**28**	**14**	50	50	100	EEC
ELECTIVE THEORY COURSES(Six to be opted)									
15MD21	Design of Mechanical Drives	3	-	-	3	50	50	100	PE
15MD22	Modeling of Dynamic Systems	3	-	-	3	50	50	100	PE
15MD23	Mechanical System Design	3	-	-	3	50	50	100	PE
15MD24	Mechanics of Composites and Smart Materials	3	-	-	3	50	50	100	PE
15MD25	Geometric Modeling	3	-	-	3	50	50	100	PE
15MD26	Product Development and Reverse Engineering	3	-	-	3	50	50	100	PE
15MD27	Design of Automotive Systems	3	-	-	3	50	50	100	PE
15MD28	Design and Analysis of Thermal Systems	3	-	-	3	50	50	100	PE
15MD29	Biomechanics of Tissues and Joints	3	-	-	3	50	50	100	PE
15MD30	Micro Electro Mechanical Systems	3	-	-	3	50	50	100	PE
15MD31	Nanomaterials and Nanotechnology	3	-	-	3	50	50	100	PE
15MD32	Production Tool Design	3	-	-	3	50	50	100	PE
15MD33	Industrial Design	3	-	-	3	50	50	100	PE
15MD34	Rotor Dynamics	3	-	-	3	50	50	100	PE
15MD35	Optimum Design of Mechanical Systems	3	-	-	3	50	50	100	PE
15MD36	Computational Fluid Dynamics	3	-	-	3	50	50	100	PE
15MD37	Creativity and Innovation Management	3	-	-	3	50	50	100	PE
15MD38	Artificial Intelligence and Expert Systems	3	-	-	3	50	50	100	PE
15MD39	Advanced Strength of Materials	3	-	-	3	50	50	100	PE
15MD40	Design of Pressure Vessels	3	-	-	3	50	50	100	PE
15MD41	Fracture Mechanics	3	-	-	3	50	50	100	PE
15MD42	Experimental Stress Analysis	3	-	-	3	50	50	100	PE
15MD43	Design of Press Tools	3	-	-	3	50	50	100	PE
15MD44	Human Body Vibration Diagnostics	3	-	-	3	50	50	100	PE
15MD45	Robot Modeling and Control	3	-	-	3	50	50	100	PE

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

CAT – Category; FC – Foundation Course; PC – Professional Core; PE – Professional Elective

EEC – Employability Enhancement Course

ONE CREDIT COURSES

15MK01	Process Engineering and Costing
15MK02	Strategic and Human Resources Management
15MK03	Measurement of Vibration and Sound
15MK04	Challenges in Implementing Lean Manufacturing
15MK05	Computational Fluid Flow and Heat Transfer Analysis of Mechanical Systems
15MK06	Thermal Analysis of Mechanical Systems using Finite Element Method
15MK07	Creative and Innovative Methods for Design and Development
15MK08	Concepts of Product Design
15MK09	Cooling of Electronic Equipment
15MK10	Value Analysis and Value Engineering
15MK11	Characterization of Turbo Machinery Using CFD
15MK12	Characterization of Heat Exchangers Using CFD

SCIENCE ELECTIVES

15ID01	Micro Electro Mechanical Systems (MEMS)
15ID02	Sensors for Engineering Applications
15ID03	Laser Processing of Materials
15ID04	Plasma Technology
15ID05	Nanosensor and its Applications
15ID06	Nano Magnetism and Spintronics
15ID07	Corrosion Science and Engineering
15ID08	Instrumental Methods of Chemical Analysis
15ID09	Polymer Science and Technology
15ID10	Nanomaterials and Nanotechnology
15ID11	Thin Film Technology

HUMANITIES AND LANGUAGES ONE CREDIT COURSES

15OK01	Research Writing in Engineering Sciences
15OK02	Indian Ethos and Human Values
15OK03	Personality Development
15OK04	Financial Accounting and Cost Accounting